

**DEVELOPING AND ASSESSING THE APPROPRIATENESS OF
THE PRELIMINARY FOOD-BASED DIETARY GUIDELINES
FOR SOUTH AFRICANS**

By

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ABSTRACT

Aim

The aim of this study was to document and provide a critical analysis of the South African Food-Based Dietary Guidelines (FBDGs) development process, and to assess the appropriateness of the proposed South African FBDGs.

To achieve this aim, specific study objectives included the following:

- (1) To document and critically analyse the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO.
- (2) To assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension (perceptions, general understanding and specific interpretations), and application of the guidelines (ability to apply the guidelines when planning a typical day's meals for their families).
- (3) To assess the compatibility of the proposed South Africa FBDGs in terms of food categorisation as perceived by consumers, and as depicted in the food guides that are commonly used.

Methodology

An extensive literature review on the development of international dietary guidelines, the emergence of FBDGs and the FAO/WHO FBDGs process, together with documentation of the South African FBDGs process, was used to critically analyse the process used for developing the proposed South African FBDGs.

Focus group discussions (n=15) and structured individual interviews (n=230) were held in ten magisterial districts within KwaZulu Natal (KZN), randomly selected according to settlement strata (rural, urban informal, urban formal) and ethnicity (Black, Indian, White) to reflect the KZN population. Participants were women with no formal nutrition training, who made the food purchasing and preparation decisions in the household. A total of 103 women participated in the focus group discussions and 230 women in the structured individual interviews.

Results

The process followed by the SA FBDG Work Group has ensured that the proposed South African FBDGs are country-specific in that each FBDG is evidence-based and relates to specific nutrition-related public health concerns of South Africans.

Except for the “Eat healthier snacks” FBDG, participants understood and interpreted the FBDGs as intended by health professionals, and could construct a day’s meals to reflect the FBDGs. Only two other FBDGs were identified as confusing in terms of terminology used, namely, “legumes” and “foods from animals”. By rewording these guidelines the FBDGs would be highly compatible in terms of personal food categorisation.

Use of food guides was low, mainly due to a lack of knowledge about how to use them. In terms of food categorisation as depicted by the reportedly most commonly used food guides (3- and 5-Food Group Guides), these food guides are incompatible with the proposed FBDGs.

Conclusions

Within the South African context, the FAO/WHO FBDGs development process was feasible and practical to implement. However, to ensure sustainability of the South African FBDGs process, it is strongly recommended that the Department of Health appoint a representative scientific committee specifically for the purpose of reviewing and reformulating the South African FBDGs.

Results indicate that a single set of FBDGs can be appropriate for all South Africans provided that certain guidelines are reworded as suggested; and that all the guidelines are accompanied by explanatory information citing commonly consumed foods/drinks as well as practical examples of how to apply the guidelines in light of perceived barriers.

In terms of the appropriateness of food guides commonly used in South Africa, there is a need to either move away from the concept of food groups and/or to develop a new South African food guide that is compatible with the proposed FBDGs.

PREFACE

The experimental work described in this thesis was carried out in the School of Agricultural Sciences and Agribusiness, University of Natal, Pietermaritzburg, from January 1997 to December 2002, under the supervision of Professor Eleni Maunder, Professor Maryann Green and Ms Fiona Ross.

These studies represent original work by the author and have not otherwise been submitted in any form for any degree or diploma to any University. Where use has been made of the work of others it is duly acknowledged in the text.

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LIST OF ABBREVIATIONS

ADA	American Dietetic Association
ADSA	Association for Dietetics in South Africa
BMI	Body Mass Index
CDL	Chronic Diseases of Lifestyle
CIC	Communications/Implementation Committee (Canada)
DHHS	Department of Human and Health Services (US)
DOH	Department of Health
FAO	Food and Agriculture Organisation of the United Nations
FBDGs	Food-Based Dietary Guidelines
FGP	Food Guide Pyramid
HEA	Health Education Authority (UK)
ICN	International Conference on Nutrition
IMR	Infant Mortality Rate
INP	Integrated Nutrition Programme
KZN	KwaZulu Natal
MAFF	Ministry of Agriculture, Fisheries and Food (UK)
MMR	Maternal Mortality Rate
MRC	Medical Research Council
NIDDM	Non-Insulin Dependent Diabetes Mellitus
NSSA	Nutrition Society in South Africa
RDA	Recommended Dietary Allowances
SA	South Africa
UK	United Kingdom
UNICEF	United Nations Childrens' Fund
US	United States
USDA	United States Department of Agriculture
WHO	World Health Organisation

**CHAPTER 1:
PROMOTING APPROPRIATE DIETS AND LIFESTYLES:
THE NEED FOR COUNTRY-SPECIFIC NUTRITION EDUCATION TOOLS**

The promotion of appropriate diets and lifestyles through the development and use of relevant, country-specific nutrition education tools (such as food-based dietary guidelines) is one of several strategies contained in the World Declaration and Plan of Action for Nutrition adopted at the International Conference on Nutrition (ICN) in Rome in 1992. The goal of this strategy is aimed at eliminating or substantially reducing famine and famine-related deaths, chronic malnutrition, micronutrient deficiencies, and diet-related communicable and non-communicable diseases. The reasoning for this was that many factors affecting the health/nutritional status of individuals are linked to their diet and/or lifestyle (FAO/WHO 1992).

When reviewing the health problems faced by many South Africans, namely, the double burden of over- and under-nutrition, it would appear that nutrition education has not made much impact on achieving optimal nutritional status (Labadarios, Steyn, Maunder, MacIntyre, Swart, Gericke, Huskisson, Dannhauser, Vorster & Nesamvuni 2001; Vorster, Oosthuizen, Jerling, Veldman & Burger 1997). A possible reason for this may be that the nutrition/health messages being used to promote healthy diets and lifestyles are inappropriate because they are not country-specific, are largely nutrient-based or only aimed at a population eating a typical Western diet (Vorster, Love & Browne 2001). Motivated by this evidence and the strategies contained within the World Declaration and Plan of Action for Nutrition, the Nutrition Society of South Africa initiated the formation of a working group that could begin the process of developing country-specific food-based dietary guidelines for South Africa (NSSA 1996).

The aim of this study is therefore to document and provide a critical analysis of the South African food-based dietary guidelines (FBDGs) development process, and to assess the appropriateness of the proposed (preliminary) South African FBDGs.

1.1 INTRODUCTION

Over the last decade, many countries have started developing country-specific food-based dietary guidelines (FBDGs) as a nutrition education tool to improve the health and well being of their people and to reduce the risk of diet-related disease by encouraging changes in food consumption patterns. This action has been the result of an international initiative of the Food and Agricultural Organisation of the United Nations (FAO) and the World Health Organisation (WHO). This initiative was launched at the International Conference on Nutrition held in Rome in 1992 where 159 countries, including South Africa, adopted the World Declaration and Plan of Action for Nutrition. Among its strategies, the Plan of Action includes the promotion of appropriate diets and healthy lifestyles through the use of relevant, country-specific, nutrition education tools, namely, FBDGs and other appropriate means, such as food guides (WHO 1998; FAO/WHO 1992).

In response to the World Declaration and Plan of Action for Nutrition, and recognising the need for more effective nutrition education interventions, the FAO and the WHO convened an international consultation in Cyprus in 1995. The aim of this meeting was to discuss the development of FBDGs as an effective nutrition education tool for the promotion of appropriate diets and lifestyles. The meeting concluded that FBDGs could be an effective nutrition education tool if developed as intended, namely, to express the principles of nutrition education mostly in terms of foods, taking into account the customary dietary pattern, ecological setting, socio-economic and cultural factors, and the biological and physical environment in which the population lives (WHO 1998).

Country-specific FBDGs have never been developed for South Africans. Instead, a multitude of different, often conflicting and confusing, nutrition education messages exist, used independently or together with a variety of food guides adapted mostly from westernised countries. Quantitative data regarding the health/disease status of South Africans and their food consumption patterns suggest that nutrition education has not made much impact on achieving optimal nutritional status (Labadarios *et al.* 2001; Vorster *et al.* 1997; WHO 1998).

While FBDGs may address dietary and even lifestyle concerns, it is acknowledged that FBDGs are only educational tools. For such tools to be truly effective, the user requires an in-depth knowledge of their client's needs, resources and constraints (barriers to change) so that appropriate information can be provided to address the many factors that affect nutrition behaviour. When food insecurity is a factor, as can happen during poverty, war and famine, nutrition education, including FBDGs, needs to be modified, with efforts focusing more on combating hunger and under-nutrition, encouraging self-sufficiency, and supporting environmental and economic sustainability (Smith & Smitasiri 1997; ADA 1996).

To improve the effectiveness of nutrition education messages and tools, such as dietary guidelines and food guides, that are to be used to promote appropriate diets and lifestyles in South Africa, it is therefore important that such messages and tools are *country-specific*. As such they would need to reflect (i) the country's nutrition-related public health issues, (ii) the availability, accessibility and price of food, and (iii) the acceptability to all populations taking into account their lifestyle, cultural eating habits and socio-economic circumstances (WHO 1998; Gibney 1997).

The aim of this study is to document and critically analyse the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO. Furthermore, the appropriateness of the proposed South African FBDGs as a country-specific nutrition education tool will be assessed in terms of consumer comprehension and application of the guidelines. Consumer comprehension of the guidelines will be examined in terms of the perceptions, general understanding and specific interpretations of study participants. Consumer application of the guidelines will be examined in terms of the ability of study participants to apply the guidelines when planning a typical day's meals for their families. The compatibility of the proposed South Africa FBDGs will be evaluated in terms of food categorisation as perceived by study participants and as depicted in the food guides that are commonly used in South Africa for nutrition education.

Few countries provide detailed documentation and analysis of the process used when developing dietary guidelines for their country. Even fewer countries conduct extensive consumer testing when developing their dietary guidelines, despite the fact that nutrition experts agree that this is an essential step in the development process. The documentation and critical analysis of the South African FBDGs process and the incorporation of extensive consumer testing as an integral part of this process are therefore important contributions to the FBDGs development process, not only for South African research, but also internationally.

This research study therefore has the potential to play a significant and unique role in contributing to the development of a viable process for the formulation of a uniform (national) set of country-specific nutrition education messages that may be more appropriate for the South African consumer than the existing multitude of different nutrition education messages. In this regard, the development of country-specific dietary guidelines is an attempt at providing consistent nutrition messages with the aim of describing recommended dietary patterns that South Africans should be striving towards whether under-, over- or adequately nourished.

1.2 DEFINING FOOD-BASED DIETARY GUIDELINES

Food-based dietary guidelines (FBDGs) are described as qualitative (descriptive), action-oriented statements. For FBDGs to be an effective nutrition education tool it is recommended that they be country-specific (WHO 1998; Gibney 1997).

To achieve this, a number of criteria are recommended when formulating FBDGs, namely, that each FBDG:

- is developed around the existence of a nutrition-related public health issue
- is developed in a specific socio-cultural context, which requires an understanding of prevailing food and nutrition habits, and of barriers to change, including socio-economic, environmental, cultural and religious factors
- is sustainable and encourages dietary diversification through the production and consumption of micronutrient-rich foods, including appropriate traditional (indigenous) foods
- is expressed in terms of foods and dietary practices rather than numerical nutrient goals, and acknowledges that a wide range of eating patterns can be consistent with good health
- presents current scientific nutrition information as simple, practical, positive advice that encourages the enjoyment of appropriate dietary intakes
- is used in context with other guidelines and not in isolation of them, thereby addressing the total diet and promoting good health, not just disease prevention

(Truswell 1998; WHO 1998; Clay 1997).

The FAO and WHO concur that disseminating nutrition information in the form of FBDGs, as defined above, is a valid strategy for public health nutrition because:

- consumers think in terms of foods rather than nutrients, and
- FBDGs can take account of considerable epidemiological data linking specific food consumption patterns with low incidence of certain diseases, while not requiring a complete understanding of the underlying biological mechanisms (WHO 1998).

1.3 FORMULATING FOOD-BASED DIETARY GUIDELINES

To assist in the formulation of country-specific FBDGs that meet with the criteria mentioned above, the FAO and WHO suggest a 10-step development process, namely:

- Formation of a working group, comprising representatives of agriculture, health, education, food science and nutritional science sectors of academia, consumer groups and other pertinent non-governmental organisations, food industry, communications and anthropology
- Collection of data on nutrition-related diseases, food availability and food intake patterns, current practices, subsidies and other governmental policies in the country
- Identification, after full discussion, of major nutrition-related health problems for which dietary guidelines could be useful and implemented in the present situation
- Formulation of a draft set of FBDG statements
- Preparation of background (technical support) papers for each FBDG statement
- Testing of the FBDG statements on consumers, and revising where necessary
- Finalisation of background papers and submission to local and national interest groups (and possibly international advisers) for comment
- National adoption of FBDG statements
- Dissemination through training of nutrition educators, consumer education materials and programmes, and mass media
- Review of the FBDGs as additional scientific evidence becomes available regarding nutrient-health effects, and in accordance to changes in dietary consumption patterns of the population
(WHO 1998).

1.4 DEFINING FOOD GUIDES

By definition, food guides are a translation of nutrient standards and recommendations (dietary goals and guidelines) into simple, practical advice on the types, and sometimes quantities, of various foods needed for optimum health. This is done by classifying foods into basic groups according to similarity of nutrient content (e.g.: carbohydrate-rich, protein-rich), function (e.g.: energy foods, body-building foods) or food type (e.g.: grains and grain products; meats and meat alternatives). The implication is that a balanced and adequate diet is probable if one or more items from each group are consumed per meal, daily, or within 1-2 weeks. The main purpose of food guides is therefore to assist the *consumer* in choosing a diet adequate in nutrients (Davis, Britten & Myers 2001; Australian Nutrition Foundation 1996; Welsh 1996; Gillespie 1990; Ahlström & Räsänen 1973).

1.5 DESIGNING APPROPRIATE FOOD GUIDES

For food guides to be effective in providing a visual illustration on how to apply dietary guidelines, they need to be designed to complement a country's specific dietary guidelines. Using food guides from other countries, with different health concerns, dietary practices, lifestyles and socio-economic circumstances, has been shown to be ineffective in changing food choices and dietary behaviours (Welsh 1996; Gillespie 1990).

In light of this, three criteria are suggested for the development of effective food guides that will serve their main purpose, namely to translate dietary guidelines into practical recommendations on daily food intake, namely:

- the food guide should complement the dietary guidelines of that specific country
- the food guide should acknowledge the foods/drinks commonly consumed by the people of that specific country, and the way(s) in which these foods/drinks are categorised by the people of that specific country
- illustrations used to depict food categories within the food guide should be readily understood

(Cronin 1998; Macpherson-Sanchez 1998; WHO 1998; Australian Nutrition Foundation 1996; Welsh 1996).

1.6 THE ROLE OF CONSUMER TESTING IN CREATING EFFECTIVE NUTRITION EDUCATION TOOLS

Available evidence suggests that nutrition education tools, such as FBDGs and food guides, are commonly misunderstood and applied inappropriately by consumers (DGA 1996; Deutsch & Morrill 1993; Axelson & Brinberg 1992). Consumer or market testing is therefore strongly recommended by the FAO/WHO as critical to the success of a country's nutrition education tools, to ensure that the public is aware of, understands and can implement them (WHO 1999; ILSI 1996).

When reviewing the creation of FBDGs and food guides by different countries, it is apparent that there is increasing recognition of the need to link *consumer* considerations with professional ideals. However, few countries actually conduct consumer testing to assess the acceptability and appropriateness of their nutrition education tools for their consumer (Australian Nutrition Foundation 1997; Welsh 1996; Ministry of Health, Indonesia 1995; Hunt, Rayner & Gatenby 1995; CSIRO 1994; Hunt, Rayner & Gatenby 1994; BFNE 1993; Connolly 1992; Welsh, Davis & Shaw 1992a, 1992b; Nutrition Task Force 1991; Health & Welfare Canada 1990).

Despite the recognition that nutrition education tools should be created for the consumer's benefit, the majority of nutrition messages and food guides remain professional-based. That is, developed primarily to assist the professional, and only considering the consumer's ability to understand and make use of the nutrition education tool as a secondary function. Such professional-based nutrition education tools ignore the empirical evidence that people learn more easily when the information that is provided builds on pre-existing knowledge. When nutrition education tools are developed by professionals to reflect their own understandings and perceptions (especially in terms of food categorisation), rather than those of the consumer, such guides are inconsistent with consumer perceptions of foods, and tend to be ineffective educational tools (Deutsch & Morrill 1993; Axelson & Brinberg 1992; Axelson, Kurinij & Brinberg 1986).

Without consumer research, it is therefore deemed impossible to determine whether FBDGs or food guides are providing practical advice which people can use in the selection of an adequate diet (Deakin University 1995a, 1995b; Gust, Gutsche & Lohnes 1995a, 1995b; Hunt, Gatenby & Rayner 1995; DHHS/USDA 1995).

1.7 THE SOUTH AFRICAN SCENARIO IN THE DEVELOPMENT OF FOOD-BASED DIETARY GUIDELINES AND APPROPRIATE FOOD GUIDES

Since the early 1980's, the Association for Dietetics in South Africa (ADSA) has held discussions regarding the usefulness and appropriateness of the various nutrition messages (dietary guidelines) and food guides currently used in South Africa. The results of these discussions have highlighted the fact that the majority of these nutrition education tools are "imported" from other, mostly developed, countries, are nutrient-based and/or are aimed only at a population eating a typical Western diet. None of the nutrition education tools used have been subjected to formal evaluation studies to assess their impact on improving the nutrition knowledge and/or dietary practices of South Africans (ADSA Minutes 1988; ADSA Workshop 1988).

Motivated by the FAO/WHO initiatives, the South African Food-Based Dietary Guidelines Work Group was formed in 1997, under the auspices of the Nutrition Society of South Africa. The working group agreed to follow the FAO/WHO FBDGs development process with adaptations where necessary for local conditions. The mandate of the South African FBDGs Work Group is:

- (a) to develop and evaluate a core set of guidelines for the promotion of health to healthy South Africans 5 years of age and older (recently revised to 7 years and older),
- (b) to ensure that these guidelines are environmentally friendly and consumer-friendly {viz: affordable, practical, attuned to food availability, culture-sensitive (encourage the use of traditional foods and eating patterns), positive, non-prescriptive and sustainable},
- (c) to adapt the core set of dietary guidelines for persons with special dietary requirements, namely, young children and infants, pregnancy, lactation, chronic illnesses, and the elderly,
- (d) to review the dietary guidelines every 5 years or sooner in response to major research findings regarding the nutritional status and food consumption patterns of South Africans

(Vorster, Love & Browne 2001).

The first draft set of FBDGs for South Africans was released in August 1998. To safeguard against the development of guidelines that would not be consumer-friendly, the South African Food-Based Dietary Guidelines Work Group agreed that any dietary guidelines developed for South Africans should undergo extensive consumer research to assess their appropriateness. It was also agreed that submissions should be made to the National Department of Health to approve and adopt the final set of FBDGs as national dietary guidelines for use throughout South Africa, as a means of streamlining nutrition messages used within the country (Vorster, Love & Browne 2001).

The South African Food-Based Dietary Guidelines Work Group therefore agreed that formal consumer research studies should be conducted in as many of the nine provinces of South Africa as resources would permit. Each study would also reflect the population of these provinces in terms of settlement type (rural, urban informal and urban formal dwellings), ethnicity (South Africans of Black, Indian, White or “Coloured” (mixed origin) descent), and home language (English, Afrikaans, Zulu, Xhosa, Ndebele, Tshivenda, Siswati, Xitsonga, Sesotho, Setswana, Sepedi) (SAFBDG 1999).

Following full discussion and extensive consumer testing, a proposed set of FBDGs has been submitted to and awaits national approval and adoption by the National Department of Health. It is anticipated that once national approval has been obtained, further discussions will take place regarding the necessity of a new South African food guide that complements the proposed set of FBDGs and is consumer-friendly.

1.8 AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to document and provide a critical analysis of the South African FBDGs development process, and to assess the appropriateness of the proposed (preliminary) South African FBDGs.

To achieve this aim, specific study objectives include the following:

- (1) To document and critically analyse the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO. Data will be collected from the FAO/WHO Consultation Report on the FBDGs process, reports and minutes of the South African FBDG process as well as an extensive literature review of the emergence and use of FBDGs internationally
- (2) To assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension and application of the guidelines. Comprehension of the guidelines will be examined in terms of study participant perceptions, general understanding and specific interpretations. Application of the guidelines will be examined in terms of the ability of study participants to apply the guidelines when planning a typical day’s meals for their families. Data will be collected from focus group discussions and semi-structured individual interviews conducted with women living in KwaZulu Natal.
- (3) To assess the compatibility of the proposed South Africa FBDGs in terms of food categorisation as perceived by women living in KwaZulu Natal, and as depicted in the food guides that are commonly used in South Africa for nutrition education. Data will be collected from focus group discussions and semi-structured individual interviews conducted with women living in KwaZulu Natal.

Objective 1:

To document and critically analyse the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO.

Areas of Investigation

- To describe the development of dietary guidelines internationally
- To discuss the emergence of FBDGs, and the FAO/WHO FBDGs development process
- To critically analyse the process of developing the proposed South African FBDGs based on theoretical underpinnings

Methodology

The development of international dietary guidelines, the emergence of FBDGs and the FAO/WHO FBDGs process will be described based on publications of work done in this area. This literature review, together with documentation of the South African FBDGs process, will be used to critically analyse the process used for developing the proposed South African FBDGs.

Use of Results

These findings will be used to critique the South African FBDGs development process in terms of its usefulness in developing the proposed South African FBDGs, and to make recommendations on how the FBDGs development process may be extended.

Objective 2 overleaf

Objective 2:

To assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension and application of the guidelines among women living in KwaZulu Natal.

Comprehension of the guidelines will be examined in terms of study participant perceptions, general understanding and specific interpretations.

Application of the guidelines will be examined in terms of the ability of study participants to apply the guidelines when planning a typical day's meals for their families.

Areas of Investigation

- To probe comprehension and application of the FBDGs in terms of:

- * previous exposure to and sources of information about concepts conveyed by the proposed FBDGs
- * general understanding and specific interpretations regarding concepts, terminology and descriptions used in the proposed FBDGs
- * perceived importance of applying each FBDG
- * perceived barriers to applying each FBDG
- * ability to plan a typical day's meals that reflect the proposed FBDGs

Methodology

Focus group discussions and semi-structured individual interviews will be conducted with women living in KwaZulu Natal.

Use of Results

Findings will be critically analysed and used to make recommendations regarding the appropriateness of the FBDGs in terms of consumer comprehension and application.

Objective 3 overleaf

Objective 3:

To assess the compatibility of the proposed South Africa FBDGs in terms of food categorisation as perceived by women living in KwaZulu Natal, and as depicted in the food guides that are commonly used in South Africa for nutrition education.

Areas of Investigation

- To identify common foods/drinks (known and consumed frequently by study participants), and reasons for infrequent consumption of known foods/drinks
- To identify personal food categorisation (way/s in which common foods/drinks are categorised by study participants without food group prompting)
- To identify FBDG food categorisation (selection by study participants of foods/drinks per food category as implied by the FBDGs, namely, starchy foods, fruits, vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks)
- To determine previous exposure to and reported usage of food guides commonly used in South Africa, and any influence this may have had on personal food categorisation
- To assess the compatibility of the proposed South African FBDGs in terms of:
 - * personal food categorisation as perceived by study participants
 - * FBDG food categorisation as perceived by study participants
 - * food groupings as depicted in food guides commonly used in South Africa

Methodology

Focus group discussions and semi-structured individual interviews will be conducted with women living in KwaZulu Natal.

Use of Results

Findings will be evaluated and used to make recommendations regarding the compatibility of the proposed South African FBDGs in terms of consumer food categorisation and whether food guides commonly used in South Africa for nutrition education are useful adjuncts to the proposed FBDGs.

1.9 PARAMETERS OF THE STUDY

The researcher is chairman of the SA Food-Based Dietary Guidelines Working Group.

The sample is specific to women living in KwaZulu Natal, who make the food purchasing and preparation decisions in the household, and who have received no formal training in nutrition (degree/diploma in nutrition, nurse, doctor, nutrition advisor, community health worker).

The majority of women in the study are not the primary earner in the household.

The food photographs chosen for the study have purposely excluded “composite” (mixed) foods.

Intra-family differences are not being investigated, therefore questions are aimed at eliciting responses about family eating as a unit.

The measurement of the effectiveness of FBDGs as a nutrition education tool is not part of this study, neither is the measurement of the impact of nutrition education on nutrition behaviour and nutritional status.

1.10 ASSUMPTIONS

Minutes and reports used as documented by the South African Food-Based Dietary Guidelines Work Group are an accurate reflection of decisions made.

There are no language barriers between moderators, interviewers and study participants.

The study participant understands the questions asked.

The study participant is not influenced to answer questions in an effort to please the moderator or interviewer (such as, stating that a food is familiar or eaten when it is not).

The food photographs used in the study are representative of food items commonly consumed by people living in KwaZulu Natal, taking into consideration the influence of availability, culture, religion and socio-economic status.

The study participant is able to identify commonly eaten foods from the food photographs displayed.

1.11 ETHICAL CONSIDERATIONS

This study involved the collection of non-invasive data from human subjects, and was approved by the Ethical Committee of the University of Natal. As evidence of the authenticity of the study, all study participants received information pertaining to the study, written on University of Natal letterhead and signed by the researcher.

All subjects who qualified for the study were free to choose not to participate.

All study participants were informed that all data collected from/about them would be kept confidential and remain anonymous.

Tape recordings of the focus group discussions were erased once the data was transcribed and interpreted.

Minutes and reports obtained from the South African Food-Based Dietary Guidelines Work Group were freely available and for the public domain.

1.12 STRUCTURE OF THE THESIS

This thesis is divided into eight chapters. The structure of the remaining chapters of the thesis is briefly described below.

Chapter two provides a review of the literature. This review begins with a general introduction as to the need for effective nutrition education using the principles of health promotion and communication. The emergence of food-based dietary guidelines (FBDGs) as a means of conducting effective nutrition education is highlighted, with emphasis on the differences between nutrient-based and food-based dietary guidelines, the recommended FAO/WHO FBDGs development process, and an analytical comparison of dietary guidelines used in different countries. The use of food guides as an additional nutrition education tool to assist in the implementation of dietary guidelines is also discussed. The chapter concludes with a review of the role of consumer testing in the development of dietary guidelines and food guides, and the impact of dietary guidelines and food guides on nutrition behaviour.

The process used in developing the proposed South African FBDGs is discussed in chapter three. This discussion covers study objective 1, namely, documentation and critical analysis of the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO. This discussion is presented in three parts, namely, documentation of the South African FBDGs development process, a critical analysis of this process in terms of the FAO/WHO FBDGs development process, and recommendations on how the FBDGs development process might be extended.

Chapter four outlines the research design used in the execution of study objectives 2 and 3, namely: to assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension and application of the guidelines, and to evaluate the compatibility of the proposed South Africa FBDGs in terms of personal and FBDG food categorisation as perceived by study participants and as depicted in the food guides commonly used. Choice of study population, sampling techniques, data collection and data analysis used in the study are revealed. Questionnaires and relevant forms are included as appendices.

The characteristics of the sample are presented in chapter five. Descriptions are provided regarding the size and composition of the study sample, settlement types, age, education attainment, employment, and sources of cooking fuel and water.

Chapter six is devoted to the study results as revealed through focus group discussions and semi-structured individual interviews. These results are presented according to study objectives 2 and 3, as previously outlined.

Chapter seven contains a discussion of the study results. Study objective 2 is discussed with specific reference to each of the FBDGs tested. Study objective 3 is discussed in terms of food categorisation as perceived by study participants, as implied by the proposed FBDGs and as depicted in the food guides that are commonly used for nutrition education.

Chapter eight consists of conclusions regarding the South African FBDGs development process and the appropriateness of the proposed South African FBDGs. Recommendations are also given on how the South African FBDGs process could be improved and areas for future research.

CHAPTER 2:

REVIEW OF THE LITERATURE

Chapter two provides a review of the literature. This review begins with a general introduction as to what constitutes effective nutrition education. The emergence of food-based dietary guidelines (FBDGs) as a means of conducting effective nutrition education is highlighted, with emphasis on the differences between nutrient-based and food-based dietary guidelines, the recommended FAO/WHO FBDGs development process, and an analytical comparison of dietary guidelines used in different countries. The use of food guides as an additional nutrition education tool to assist in the implementation of dietary guidelines is also discussed. The chapter concludes with a review of the role of the consumer in the development of dietary guidelines and food guides, and the impact of dietary guidelines and food guides on nutrition behaviour.

2.1 DEFINING EFFECTIVE NUTRITION EDUCATION

Effective nutrition education can be defined as a communication process that goes beyond information dissemination, but aims at producing nutritionally literate, motivated people who are willing and able to apply their nutrition knowledge in order to create sustained behavioural change conducive to health and well-being (Stuart & Achterberg 1997; ADA 1996).

Nutrition education presents some unique challenges. While the origin of all human behaviours is complex, nutrition behaviour adds a further dimension involving the capacity to discriminate among different foods. This is complicated further by the fact that no food can be singly labelled "bad" or "unhealthy", as it is quantity and frequency of consumption that affects health. One also needs to consider the nature and accessibility of the food supply. When food insecurity is a factor, as can happen during poverty, war and famine, nutrition messages may need to focus more on combating hunger and under-nutrition, encouraging self-sufficiency, and supporting environmental and economic sustainability (Smith & Smitasiri 1997; ADA 1996).

Today's consumers are also faced with a multitude of, often conflicting, nutrition messages. As a consequence, consumers are beginning to discount them entirely – a phenomenon referred to as a *nutrition backlash*, which includes negative feelings towards nutrition information such as scepticism, anger, guilt, worry, fear and helplessness (Patterson, Satia, Kristal, Neuhouser & Drewnowski 2001). To help consumers discriminate among nutrition messages, nutrition educators have to use strategies to make themselves heard above competing information. For effective nutrition education, it is suggested that such strategies make use of approaches, messages and support materials that will enhance awareness, increase knowledge and, most importantly, establish the motivation needed for behaviour change (ADA 1996; Contento, Balch, Bronner, Lytle, Maloney, Olson & Swadener 1995).

In light of this, it is recommended that health promotion and communication models be used when developing nutrition education materials/programmes. Such models advocate the inclusion of the following factors for the development of effective nutrition education messages and/or tools:

- household food security (the availability, accessibility and affordability of food)
 - nutrition-related public health concerns
 - the consumer's socio-economic circumstances
 - the consumer's lifestyle and cultural eating habits
 - the consumer's understanding of and ability to apply the information
- (Gibney 1997; Welsh 1996; Gillespie 1990)

Such models therefore acknowledge that the starting point for health promotion/communication programmes should be the nature and accessibility of the food supply as it is fundamental to the nutritional well being of people and largely determines the nutritional problems that arise among them. The rationale behind this is that nutrition education should go beyond "teaching people to make better use of available food resources", and include strategies that address the problem of inadequate, confusing or insecure food resources. There is also a growing recognition of the need to make use of strategies designed to include the consumer/community in all aspects of planning and implementation, and to strengthen community ownership of programmes for sustainability (Smith 1997; Smith & Smitasiri 1997; Stuart & Achterberg 1997; FAO 1995; Andrien 1994).

The challenge for nutrition educators then, is to conduct nutrition education using principles of health promotion and communication. By doing so, nutrition educators may be better able to reach their intended target groups, and better able to assess the effectiveness of their endeavours based on measured outcomes rather than subjective impressions. This, in turn, might provide more accurate guidance as to how such nutrition education attempts should be modified to improve their effectiveness.

2.2 THE EMERGENCE OF FOOD-BASED DIETARY GUIDELINES AND APPROPRIATE FOOD GUIDES

Sabry (1990) describes the science of nutrition as a process of identifying the nutrients needed to sustain life and health, determining the human requirement levels of these nutrients, and then expressing them in terms of foods that are acceptable and accessible to target populations.

The nutrition education tools developed for the above-mentioned purposes (see Figure 2.1) have included:

- * nutrient standards (such as Recommended Dietary Allowances and Dietary Reference Values)
 - * dietary goals (such as <30% of total energy from fat, <300mg cholesterol/day)
 - * dietary guidelines (such as "enjoy a variety of foods")
 - * food guides (such as the Food Guide Pyramid), which categorise foods into groups
- (Welsh 1996).

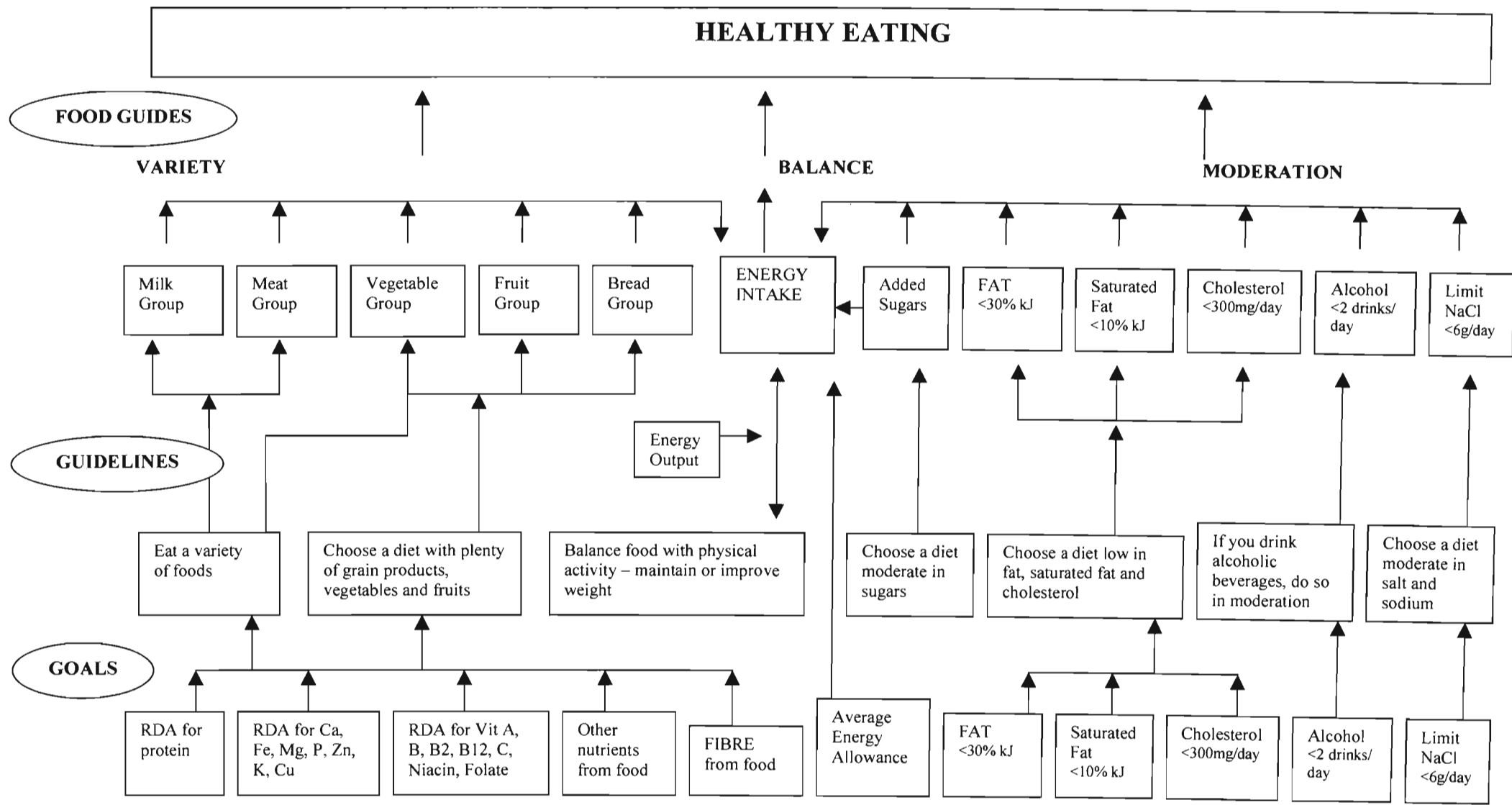


Figure 2.1 The relationship of nutrient standards, dietary goals, dietary guidelines and food guides (after Welsh 1996)

Nutrient standards, dietary goals, dietary guidelines and food guides each define aspects of a healthy diet, but in different ways. While nutrient standards and dietary goals provide quantifiable recommendations for the ingestion of individual nutrients, dietary guidelines introduce a measure of dietary adequacy and balance among nutrients by defining optimal eating patterns in qualitative terms. Food guides are an extension of dietary guidelines, assisting in the process of translating scientific nutrient concepts into simple dietary patterns that can be understood by and benefit the general population.

Nutrient standards and dietary goals are scientific terms, containing quantitative recommendations for the intake of nutrients and food components (see Table 2.1 for examples). Such quantitative tools are intended for use by health professionals to plan national food and nutrition policies, design food products, and evaluate dietary habits of large groups of healthy people. They are not recommended for providing nutrition education to individuals. Where this has occurred, the result has been much consumer confusion (WHO 1998; Welsh 1996).

The setting of such quantitative recommendations makes two presumptions:

- (i) that sufficient scientific evidence exists to support the establishment of recommended amounts to achieve a given physiological effect, and
- (ii) that the recommended amounts chosen, whether correct or not, can be consumed by the general population (Welsh 1996).

Table 2.1 Examples of Dietary Goals
(after Wolmarans 1997; Welsh 1996)

	<i>United States (adopted 1993)</i>	<i>New Zealand (adopted 1993)</i>	<i>South Africa (adopted 1989)</i>
AGE	>2 years	>3 years	>2 years
TOTAL FAT	<30%TE	33%TE	<30%TE
SATURATED FATTY ACIDS	<10%TE	8-12%TE	<10%TE
MONO-UNSATURATED FATTY ACIDS		10-20%TE	
POLY-UNSATURATED FATTY ACIDS	<20%TE	6-10%TE	<10%TE
CHOLESTEROL	<300mg/day		<300mg/day
CARBOHYDRATE		50-55%TE	
FIBRE		25-30g/day (soluble fibre=¼)	20-30g/day
ALCOHOL		2-3 drinks/day	2-3 drinks/day (10-20g alcohol/day)
SODIUM		<7g/day	3g/day (5g NaCl/day)

TE = Total Energy

A detailed discussion of nutrient standards and dietary goals is beyond the scope of this review, but their emergence has led to the development of dietary guidelines and food guides. Over the past century, the differences between these nutrition education tools have sometimes been more apparent than the connection between them. However, since the early 1990's, several factors appear to be bringing the development processes and uses of these nutrition education tools together again – a primary one being consumer demand for the translation of latest scientific findings into practical dietary information (Mertz 2000; WHO 1998; Welsh 1996; Sabry 1990).

The remainder of this review will therefore focus specifically on the emergence of dietary guidelines and food guides as nutrition education tools used in the translation of quantitative nutrient recommendations into qualitative dietary advice that can be understood by and benefit the general population.

2.2.1 The emergence of food-based dietary guidelines

While nutrient standards and dietary goals provide quantifiable recommendations for the ingestion of individual nutrients, dietary guidelines introduce a measure of dietary adequacy and balance among nutrients by defining optimal eating patterns in qualitative terms.

2.2.1.1 Defining food-based dietary guidelines

Dietary guidelines are qualitative (descriptive) statements that express dietary goals in terms of foods, rather than nutrients, and provide user-friendly nutrition information about the total diet. They reflect the most current scientific understanding of nutrition's role in health, and present this information as simple, practical information for choosing optimal eating habits. In some countries, they form the basis of nutrition policies and programmes. Over the years, dietary guidelines have become more positive, focusing on pleasurable food choices that promote good health, not just disease prevention. Using a food-based approach, they take into account customary dietary patterns and indicate dietary modifications to address health concerns particular to the population for which they are compiled (Truswell 1998; WHO 1998; Clay 1997).

2.2.1.2 The importance of using food-based dietary guidelines

Nutrition education was among the priority issues at the International Conference on Nutrition (ICN) held in Rome in 1992, where South Africa was one of 159 countries who formally adopted the World Declaration and Plan of Action for Nutrition. This Declaration comprises a number of goals aimed at eliminating or substantially reducing famine and famine-related deaths, chronic malnutrition, micronutrient deficiencies, and diet-related communicable and non-communicable diseases. To achieve these goals, several strategies are suggested. One of these strategies is the promotion of appropriate diets and lifestyles; the reasoning being that most factors affecting the health/nutritional status of individuals are linked to their diet and/or lifestyle (FAO/WHO 1992).

In response to the World Declaration and Plan of Action for Nutrition, and recognising the need for more effective nutrition education interventions, the Food and Agriculture Organisation of the United Nations (FAO) and the World Health Organisation (WHO) convened an international consultation in Cyprus in 1995. The aim of this meeting was to discuss the development of food-based dietary guidelines (FBDGs) as an effective nutrition education tool (WHO 1998).

The meeting concluded that disseminating information through FBDGs is a valid strategy for public health nutrition because:

- (a) consumers think in terms of foods rather than nutrients, and
- (b) FBDGs can take account of considerable epidemiological data linking specific food consumption patterns with low incidence of certain diseases, while not requiring a complete understanding of the underlying biological mechanisms (WHO 1998).

2.2.1.3 The process of developing food-based dietary guidelines

For FBDGs to be an effective nutrition education tool, the FAO/WHO consultation agreed that FBDGs should be country-specific, that is, they should reflect:

- * the country's specific nutrition-related public health concerns,
- * the availability, accessibility and price of food, and
- * their acceptability to all populations regarding their lifestyle, cultural eating habits and socio-economic circumstances (WHO 1998; Gibney 1997).

To achieve this, a number of criteria are deemed necessary for the formulation of effective FBDGs, namely, that each FBDG:

- is developed around the existence of a nutrition-related public health issue
- is developed in a specific socio-cultural context, which requires an understanding of prevailing food and nutrition habits, and of barriers to change, including socio-economic, environmental, cultural and religious factors
- is sustainable and encourages dietary diversification through the production and consumption of micronutrient-rich foods, including appropriate traditional (indigenous) foods
- is expressed in terms of foods and dietary practices rather than numerical nutrient goals, and acknowledges that a wide range of eating patterns can be consistent with good health
- is easily understood by the general public, with simple terminology
- presents current scientific nutrition information as simple, practical, positive advice that encourages the enjoyment of appropriate dietary intakes
- is used in context with other guidelines and not in isolation of them, thereby addressing the total diet and promoting good health, not just disease prevention

(Truswell 1998; WHO 1998; Clay 1997).

The starting point when developing FBDGs is therefore the relevance to a specific public health concern rather than an existing gap between current intake of a particular nutrient and its numerical recommended daily intake. FBDGs should also be based on what can be realistically achieved within the social, economic, agricultural, supply and cultural contexts of the country rather than an attempt to eliminate in one step the entire difference between desired and actual intakes. Once the public health issues have been identified, a transition needs to be made from the nutrients involved to food-based strategies that are likely to be successful. It is also important to ascertain the extent to which non-nutritional factors (such as infection, safe water, smoking, physical activity) may be implicated, as these may have to be addressed in order for the nutrition strategies to be fully successful (WHO 1998).

The FAO/WHO consultation suggests a 10-step development process for the generation of FBDGs, namely: (WHO 1998)

- Formation of a working group, comprising representatives of agriculture, health, education, food science and nutritional science sectors of academia, consumer groups and other pertinent non-governmental organisations, food industry, communications and anthropology
- Collection of data on nutrition-related diseases, food availability and food intake patterns, current practices, subsidies and other governmental policies in the country

- Identification, after full discussion, of major nutrition-related health problems for which dietary guidelines could be useful and implemented in the present situation
- Formulation of a draft set of FBDG statements
- Preparation of background (technical support) papers for each FBDG statement
- Testing of the FBDG statements on consumers, and revising where necessary
- Finalisation of background papers and submission to local and national interest groups (and possibly international advisers) for comment
- National adoption of FBDG statements
- Dissemination through training of nutrition educators, consumer education materials and programmes, and mass media
- Review of the FBDGs as additional scientific evidence becomes available regarding nutrient-health effects, and in accordance to changes in dietary consumption patterns of the population

Since the publication of the FAO/WHO consultation report, proposals have been made for international collaboration in the development of FBDGs. As a first step in this process, European Union countries have begun to gather food and nutrient intake data to provide a basis for the formulation of relevant FBDGs for the region as a whole. This process has been published in the *British Journal of Nutrition* 1999: 81: Supplement 2. To date, a preliminary set of FBDGs for this region has not been developed.

For the Western Pacific region (East Asia, Oceania and Pacific Islands) a “Seminar and Workshop on National Dietary Guidelines” was convened in Singapore in 1996 resulting in the publication of criteria for the formulation of FBDGs specific to this region (WHO 1999). To date, changes to existing dietary guidelines, based on these criteria, have not been disseminated.

To address the development of FBDGs in the Southern and East African region, a “Food-Based Dietary Guidelines and Nutrition Education Workshop” was held in Harare, Zimbabwe in 1999. From this workshop, it was apparent that only two countries in the region, South Africa and Namibia, were attempting to develop country-specific FBDGs using the recommended FAO/WHO process. To date, development of FBDGs by other countries in the Southern and East African region has not progressed (Glasauer 2001; FAO/ILSI 1999).

2.2.1.4 A comparison of food-based dietary guidelines from other countries

Dietary guidelines have been published in over 20 countries (see Appendix 1). These guidelines appear to be a product of a review of the literature on nutrient requirements and on the various relationships linking nutrition and disease. Nutrient-based guidelines are still in existence for some countries, while many countries also still make use of negative language.

Guidelines of the more affluent (“developed”) countries (such as the United Kingdom, United States, Canada, Australia, New Zealand, Europe, Japan and Singapore) emphasise prevention and control of *chronic diseases of lifestyle* and the promotion of health through dietary and lifestyle changes. Dietary guidelines for these countries therefore focus on body weight/activity and reduction of intakes for meats, fats, salt, sugar and alcohol. While starchy foods, vegetables and fruits are promoted by nearly all affluent “developed” countries, legumes are promoted by few (Kennedy & Davis 2000; O’Brien 2000; De Henauw & De Backer 1999; Australian Nutrition Foundation 1998; HEA/MAFF 1997; Shils, Olson & Shike 1994; BFNE 1993; Nutrition Task Force 1991; Health and Welfare Canada 1990).

For poorer (“lesser developed”) countries (such as Malaysia, China, Korea, Philippines, Thailand and India), guidelines emphasise both prevention and control of *under-nutrition* as well as problems associated with *urbanisation* (over-nutrition and chronic diseases of lifestyle). Dietary guidelines for these countries therefore include the same focus as that of “developed” countries, with more emphasis on the promotion of legumes and food safety (Chinese Nutrition Society 2000; Department of Health, Thailand 1999; Asian Nutrition Foundation 1997; Ministry of Health, Malaysia 1997; ILSI 1996; Ministry of Health, Indonesia 1995; Shils, Olson & Shike 1994).

India provides two sets of dietary guidelines – one for the poor (promoting the use of inexpensive and traditional foods, and the consumption of grains and legumes with some milk and vegetables each day) and one for the affluent (with an emphasis on fat, sugar and salt restriction). This provision of two sets of dietary guidelines is an attempt to address the “double burden” of under- and over-nutrition that exists in the country (Gopalan 1997).

Whether a “developed” or “lesser developed” country, comparisons of the different sets of dietary guidelines (see Table 2.2) show the following:

- there is almost complete agreement on six recommendations, though the wording may differ slightly from one set to another, namely:
 - eating a nutritionally adequate diet composed of a variety of foods
 - eating less fat, particularly saturated fat
 - adjusting energy balance for body weight control – less energy intake; more exercise
 - eating more whole-grain cereals, vegetables and fruits
 - reducing salt intake
 - drinking alcohol in moderation or avoiding it
- guidelines that remain controversial and less widely recommended include information about reducing intakes of meats and dairy products (unsaturated fats and cholesterol) and sugars

Certain dietary guidelines appear infrequently (see Appendix 1), predominantly from “lesser developed” countries, namely:

- the encouragement of breastfeeding
- the encouragement of regular meals (breakfast, lunch and dinner)
- eating clean and safe food
- eating legumes (vegetable protein) more frequently
- eating foods rich in specific micronutrients (calcium, iron, iodine, vitamin A)
- limiting caffeine
- preserving traditional dietary patterns and encouraging the use of indigenous foods
- drinking water (of a safe and/or fluoridated supply)
- the use of iodised salt
- the promotion of oral hygiene practices

When comparing dietary guidelines of different countries, it is evident that countries are attempting to address nutrition-related public health concerns specific to their country. When reviewing the successive sets of American Dietary Guidelines (see Table 2.3), it is clear that they reflect new scientific evidence and changing health priorities (seen as the re-ordering of the fat and starch guidelines). They also reflect a move towards more positive language that emphasises the enjoyment, rather than the avoidance, of foods. Nutrient terminology, such as “starch” and “fibre”, has also been replaced with more consumer-friendly food terms, such as “vegetables, fruits and grain products”. Technical language such as “Maintain and ideal body weight” has also been replaced with more action-oriented phrases such as “Aim for a healthy weight” and “Be physically active” (Keenan & Abusabha 2001; Truswell 1998; Kennedy, Meyers & Layden 1996; DHHS/USDA 1995).

The most recent edition of the American Dietary Guidelines, released in 2000 (see Table 2.3), shows an even greater move towards a food-based approach. Such efforts began as a result of a consumer research-driven collaborative project, “Dietary Guidelines Alliance”, formed in 1996 to develop positive, practical and actionable dietary messages (DGA 1996). Additional research conducted by the USDA to test how the 1995 dietary guidelines were being communicated confirmed that these guidelines needed simplification and translation in to practical terms for consumer implementation. As a result, the American Dietary Guidelines 2000 contain three additional guidelines, and all guidelines are organised around three broad principles, namely, “Aim for fitness” (healthy weight; physically active), “Build a healthy base” (pyramid, grains, fruits/vegetables, safe food) and “Choose sensibly” (fats, sugars, salt, alcohol). The three new guidelines comprise a separate statement on physical activity (as the benefits go beyond energy balance and weight maintenance), a separate statement on fruits and vegetables (to clarify the distinct advantages between these plant foods and grains), and a new statement on food safety (to minimise risk of foodborne illness) (Borra, Kelly, Tuttle & Neville 2001; Johnson & Kennedy 2000; Kennedy & Davis 2000).

While many countries are embracing the concept of FBDGs, it is clear however that the true concept of “food-based” dietary guidelines has not yet been universally adopted. A number of dietary guidelines are still essentially nutrient-based, recommending intakes of specific nutrients (calcium, iron, vitamin A, vitamin C) rather than listing foods that are rich sources of these nutrients. Many dietary guidelines still make use of negative language (avoid, limit) which does not encourage the enjoyment of food, and some countries still include numeric dietary goals (such as Singapore - fat intake 20-30% of total energy) as part of their dietary advice.

Despite the non food-based approach of many countries, most countries, both “developed” and “lesser developed”, consistently recommended a high carbohydrate eating pattern, promoting starchy foods (grains), fruits and vegetables with lower intakes of meats and dairy products.

Table 2.3 Dietary Guidelines for Americans (1980-2000)
(after Kennedy & Davis 2000; DHHS/USDA 1995)

1980 (1st edition)	1985 (2nd edition)	1990 (3rd edition)	1995 (4th edition)	2000 (5th edition)
Eat a variety of foods.	Eat a variety of foods.	Eat a variety of foods.	Eat a variety of foods.	Let the pyramid guide your food choices.
Maintain ideal weight.	Maintain desirable weight.	Maintain healthy weight.	Balance the food you eat with physical activity – maintain or improve your weight.	Aim for a healthy weight.
				Be physically active.
Avoid too much fat, saturated fat and cholesterol.	Avoid too much fat, saturated fat and cholesterol.	Choose a diet low in fat, saturated fat and cholesterol.	Choose a diet with plenty of grain products, vegetables and fruits.	Choose a variety of grains daily, especially whole grains.
				Choose a variety of fruits and vegetables daily.
				Keep food safe to eat.
Eat foods with adequate starch and fibre.	Eat foods with adequate starch and fibre.	Choose a diet with plenty of vegetables, fruits and grain products.	Choose a diet low in fat, saturated fat and cholesterol.	Choose foods low in saturated fat and cholesterol and moderate in other fats.
Avoid too much sugar.	Avoid too much sugar.	Use sugars only in moderation.	Choose a diet moderate in sugars.	Choose beverages and foods to moderate your intake of sugars.
Avoid too much sodium.	Avoid too much sodium.	Use salt and sodium only in moderation.	Choose a diet moderate in salt and sodium.	Choose and prepare foods with less salt.
If you drink alcohol, do so in moderation.	If you drink alcoholic beverages, do so in moderation	If you drink alcoholic beverages, do so in moderation.	If you drink alcoholic beverages, do so in moderation.	If you drink alcoholic beverages, do so in moderation.

2.2.1.5 The emergence of food-based dietary guidelines in South Africa

The majority of dietary messages in use in South Africa are either nutrient-based or only aimed at a population eating a typical Western diet. The majority of nutrition education interventions make use of a food grouping system such as the three or five food group guides (DOH/HMAC 1992; Diet Consensus Panel 1989). Motivated by the FAO/WHO initiatives, the Nutrition Society of South Africa (NSSA) decided to form a working group that could start the process of developing food-based dietary guidelines (FBDGs). Under the leadership of Professor HH Vorster, volunteers were invited to serve on the working group to develop FBDGs for South Africans. The South African Food-Based Dietary Guidelines (SA FBDG) Work Group was officially formed in May 1997 (NSSA 1996).

The evolution of the proposed South African FBDGs is discussed in detail in Chapter 3 of this thesis. Suffice to say that these proposed FBDGs are an attempt at providing country-specific, consistent nutrition messages in a non-segregating manner. They describe a target diet that South Africans (7 years and older) should be aiming towards whether under-, over- or adequately nourished. Their non-quantitative nature allows flexibility for nutrition educators to adapt the messages according to client needs, either to reinforce existing desirable dietary practices or to alter undesirable ones (such as reducing fat intake or increasing carbohydrate intake).

Food categories as suggested by the proposed South African FBDGs parallel traditional food groupings as used by nutrition educators to address major nutrient requirements (see Table 2.4). However, to ensure a total diet approach, the FBDGs also include non-traditional food groupings, namely, water and alcohol. The adoption of this approach is evident in dietary guidelines released by other countries (see Appendix 1). Foods that appear in these guidelines are usually large groups such as vegetables, fruits, cereals and meats. In some cases specific foods are mentioned, such as fatty fish, rice, bread and citrus fruits. A few guidelines also provide advice about choosing foods that have been minimally processed, such as wholegrains, fresh fruits and vegetables.

Table 2.4 Rationale for the food categories as suggested by the FBDGs
(after SA FBDG Work Group 1998)

FOOD CATEGORIES	ENERGY	CHO	FIBRE	FAT	PROTEIN	VITAMINS	MINERALS
STARCHY FOODS	XX	XX	XX		X	XX	X
FRUITS	XX	XX	XX		X	XX	X
VEGETABLES	X	X	XX		X	XX	X
LEGUMES	XX	XX	XX	X	XX	XX	XX
FOODS FROM ANIMALS	XX			XX	XXX	XX	XX
FATS	XXX			XXX	XX	X	X
SALT	X	X	X	XX	X	X	X
ALCOHOL	XX	X		XX			
SNACKS	XX	XX	X	XX	X	X	X

CHO=Carbohydrate

2.2.2 The emergence of food guides

Food guides are an extension of dietary guidelines, making use of pictorial representations (graphics) to assist in the process of translating scientific nutritional concepts into simple dietary patterns that can be understood by and benefit the general population.

2.2.2.1 Defining food guides

Food guides are a visual translation of nutrient standards and recommendations (dietary goals and dietary guidelines) into simple, practical advice on the types, and sometimes quantities, of various foods needed for optimum health. This is done by classifying foods into basic groups according to similarity of nutrient content (e.g.: carbohydrate-rich, protein-rich), function (e.g.: energy foods, body-building foods) or food type (e.g.: grains and grain products; meats and meat alternatives). The implication is that a balanced and adequate diet is probable if one or more items from each group are consumed per meal, daily, or within 1-2 weeks (Davis, Britten & Myers 2001; Australian Nutrition Foundation 1996; Welsh 1996; Gillespie 1990; Ahlström & Räsänen 1973).

Axelsson & Brinberg (1992) describe food guides as having two components:

- a knowledge component – used to communicate basic nutrition concepts to the consumer i.e.: food groupings/classification system based on similarity of nutrient content, function or food type
- a behavioural component – used to translate the food groupings/classification system in to concrete actions i.e.: qualitative advice, and suggested minimum numbers of servings per food group per day

By definition and description, the main purpose of food guides is therefore to visually complement the country's dietary guidelines and to assist the *consumer* in choosing a diet that will achieve these dietary guidelines.

2.2.2.2 The importance of using appropriate food guides

Many nutrition educators consider food guides an indispensable tool for communicating, to the consumer, information needed for selecting the types and amounts of various foods that, together, will provide a nutritionally satisfactory diet. In contrast to this, since the 1980's the use of food guides for "lesser developed" countries has been berated by certain nutrition educators as obsolete, inappropriate, misleading and a disservice, especially when families have a limited choice of foods, and even the staple food is in short supply (Welsh 1996; Axelsson & Brinberg 1992; Alnwick 1987; Ritchie 1981).

Criticisms regarding the use of food guides for "lesser developed" countries include:

* Not recognising cultural eating patterns - Most rural people eating a staple food, such as cassava, maize, rice or potatoes, consider other foods as flavourings (relishes) to make the staple food tastier.

* De-emphasising staple foods by classifying them as “Energy Foods” - It has been estimated that staple foods can provide more than 50% of the protein requirements of the diet due to such large quantities being eaten. Furthermore, when eaten with legumes (as is common), the resultant diet constitutes a very important source of protein in terms of quantity and quality.

* Not distinguishing between carbohydrate-rich and fat-rich “Energy Foods” – While people need carbohydrate and fat in their diet, the emphasis should be on a higher carbohydrate intake in order to keep fat intake at a moderate level.

* Implying that individual foods are linked exclusively to a single physiological function - Most foods contain more than one nutrient and can therefore perform more than one function. Some foods are also eaten just for enjoyment, rather than as a nutrient source.

* Implying that a meal will only be balanced if it contains a food from each food group. Such a meal may not necessarily be balanced or familiar e.g.: egg, lemon and margarine.

* Labelling foods as “bad” (unhealthy) on the basis that they are not ‘internally balanced’ - Such as sugar or oil, which may not contribute micronutrients directly to the diet, but when added to other foods, they improve the energy density and palatability of these foods resulting in greater intakes of these foods (and of micronutrients).

* Emphasising the types (quality) of foods to eat - Without advice about amounts (quantity) to eat.

* Failing to consider ways to increase the energy intake of young children e.g.: by improving the palatability and energy density of bulky staple foods; feeding more frequently.

* No discussion about the use of soft drinks, sweets and alcohol – Ignoring the fact that these items are commonly consumed.

* Classifying legumes with meat products - Implying that they are nutritionally equivalent, which contradicts with advice to eat legumes with cereals for a full amino acid complement.

* Emphasising dairy products as a separate group - Dismissing the fact that these foods are not commonly consumed by some ethnic groups, and are often unavailable and expensive in “lesser developed” countries.

In light of these criticisms, many nutrition educators have suggested that the approach to use in “developing” countries should be based on already established, positive eating patterns, rather than on standardised food groups (Werner & Bower 1995; Savage-King & Burgess 1992; Alnwick 1987; Alade 1986; Ritchie 1981; Waterlow & Payne 1975).

2.2.2.3 The process of developing appropriate food guides

In light of the many criticisms surrounding the use of food guides, it is recommended that food guides be developed according to three criteria if they are to be effective and serve their main purpose, namely, to translate dietary guidelines in to practical recommendations on daily food intake:

- the food guide should complement the dietary guidelines of that specific country
 - the food guide should acknowledge the foods/drinks commonly consumed by the people of that specific country, and the way(s) in which these foods are classified/categorised by the people of that specific country
 - visual illustrations used to depict the food guide should be readily understood
- (Cronin 1998; WHO 1998; Australian Nutrition Foundation 1996; Welsh 1996).

Such a recommendation is not new. In the early 1980's, Gillespie (1985) designed a conceptual framework for developing a dietary guidance system "that can facilitate the translation of scientific knowledge of food and nutrient needs into specific dietary advice for *consumers* and that can provide *consumers* with a tool for making wise food choices". Emphasis was placed on the importance of designing a food guide that was useful to the consumer.

2.2.2.4 A comparison of food guides from other countries

Despite the fact that the use of food guides has received much criticism, they remain central to most nutrition education efforts. Even countries that have not developed a pictorial representation (graphic), such as New Zealand and Thailand, still make use of a food grouping/classification system.

Little is known about how and when food guides were first developed, and how soon they became common. The United States, Canada and the United Kingdom provide the most extensive data available on the development of their food guides. Less information can be found in the literature on the development and popularity of food guides in other "developed" countries, and documentation available for "lesser developed" countries is fragmented and scanty. This may partly be due to the fact that official decisions are seldom involved when a food guide is adopted. Instead, private advisory organisations and people concerned with nutrition education seem to adopt various food guides from foreign sources, occasionally adapting them to suit local needs and conditions (Hunt, Rayner & Gatenby 1995; Ahlström & Räsänen 1973).

During World War II, the "Basic Four" food guide of the United States was modified for use in the United Kingdom. It was probably then that the now familiar "three food groups" concept was first widely promoted with its "Body Builders/Grow Foods", "Protective/Glow Foods" and "Energy/Go Foods". Immediately following World War II, malnutrition became increasingly recognised as a major problem in young children in "lesser developed" countries. Most 'Westerners' attributed the problem to ignorance, illiteracy and dietary taboos, resulting in available food being unused. 'Westerners' pointed out, correctly, that the way Africans fed their children and themselves, and the foods they used, were different to practices 'back home'. However, different was assumed to be bad, and nutrition education took a paternalistic approach - teaching mothers how to feed their families balanced diets based on Western eating patterns (Alnwick 1987; Gurney 1982).

The diagnosis of kwashiorkor as being primarily due to a deficiency of protein was taken by many to be proof of the validity of the “Three Food Groups” model, with its emphasis on protein-rich foods. Since the early 1970’s, however, this has been extensively challenged and it is currently accepted that kwashiorkor is caused by a complex combination of factors, including infection, multiple nutrient deficiency, and perhaps dietary toxins and psycho-social factors. Virtually none of this information, however, has filtered down to nutrition educators. Reasons cited include poor communication, lack of clear consensus among academics, and perhaps a reluctance by some to admit that earlier messages have changed as the science of nutrition has evolved (Alnwick 1987; Waterlow & Payne 1975).

A review of food guides from different countries (see Appendix 2) reveals the following:

* The emphasis of food guides has shifted over the years from focusing on providing a foundation diet that will ensure adequacy, to providing a total diet that addresses both adequacy (prevention of under-nutrition) and prudence (prevention of over-nutrition). This shift parallels the emergence of chronic diseases of lifestyle as “developed” countries have become more affluent and “lesser developed” countries have become more urbanised.

* Foods are classified into groups on the basis of:

- nutrient content of the foods
- how previous food guides grouped foods
- consumer use of foods
- local food availability, consumption patterns and habits
- local nutrition problems and/or commodity or agricultural base of the country

* While a carbohydrate-rich diet is promoted in all countries, an emphasis on animal proteins and dairy products is still apparent in the food guides of “developed” countries. Where these foods are not traditional items in the diet (such as the Mediterranean, Asia and Africa), legumes, nuts and seeds (and sometimes fish with edible bones) have replaced them.

* The number of food groups used varies between countries, ranging from 4-6 groups for most “developed” countries, 9-11 groups for the Mediterranean and Asia, and 3-5 groups for Africa and other “lesser developed” countries. In some countries (such as South Africa), food guides with different numbers of food groupings are used, aimed at different (socio-economic) target groups.

* Advice about the use of fats, sugars and alcohol varies. A separate “energy dense” or “extras” group, or a “use sparingly/in moderation/in small amounts” statement appears in the food guides of “developed” countries. Alcohol is not mentioned in the food guides of “lesser developed” countries, and fats and sugars are often classified together as low bulk, concentrated energy supplements.

* Serving sizes and a recommended range of servings are provided in some food guides. Where serving sizes are assigned, this is done according to typical portion sizes as reported in food consumption surveys, ease of use (household units), similar nutrient content, and traditional use. Other guides are less specific, indicating only relative frequencies to highlight the fact that many different eating patterns are associated with good health.

* Visual illustrations also vary between countries, with pyramidal (triangular) and circular designs the most popular. Research has been conducted by some countries to determine the effectiveness of the pictorial representation (graphic) in conveying the concepts of variety and proportion.

As with the dietary guidelines of many countries, while several differences exist between the food guides of countries, the core message of these food guides is the promotion of starchy foods (grains), fruits and vegetables with lower intakes of meats and dairy products.

2.2.2.5 The emergence of food guides in South Africa

Food guides currently used in South Africa (SA) are “imported” systems, predominantly from the United States and the United Kingdom. Prior to 1988, the 3,4,5 and 7 “Food Groups” were all used in various settings and for various purposes. In general, the “Three Food Groups” was used with poorer people and those with little education. The “Four Food Groups” and “Five Food Groups” were used mostly with wealthier, more educated people, and the “Seven Food Groups” were used to compile ‘exchange lists’ for therapeutic diets (Department of Health and Welfare 1986; Fedfood & Vandenburgs 1985).

In 1988, several meetings were held with representatives of the Department of Health, dietetic/nutrition departments of academic institutions, and dietitians employed by industry to discuss the validity of the various food guides used for nutrition education. It was agreed that all nutrition educators should advocate the same messages so as not to confuse their audiences and that people should be able to follow nutrition advice even if their circumstances changed. The benefits and disadvantages of the various food guides were debated. The decision was taken to use the “Three Food Groups” and “Five Food Groups” because they were well-known and familiar to many, could be used for different socio-economic groups, and provided people with an understanding of the importance of a balanced and varied diet (ADSA Minutes 1988).

Following the election of the new democratic government in 1994, the amalgamation of the Departments of Health began. A single Department of National Health was created, with one national Nutrition Directorate. To date, no policy decision has been made by the Nutrition Directorate regarding the food guide(s) to be used for nutrition education. The Development Bank of Southern Africa, however, strongly recommends the development of appropriate nutrition education messages and materials, and the integration of these into primary health care services, as part of the South African Nutrition Strategy (Ngcobo 1998; McLachlan & Kuzwayo 1997).

With most of the attention being on the resolution of the problems of under-nutrition, especially stunting, the promotion of traditional (indigenous) foods, with an emphasis on making use of available, accessible and affordable resources, is reappearing. Mackeown, Cleaton-Jones and Hargreaves (1994) have suggested the development of basic regional food lists, as food choices and quantities eaten often differ between regions according to culture, geographical area, climate, income and availability. For example, Mopani worms are commonly eaten in the Northern province, whilst snoek (salted, dried fish) is commonly eaten in the Western Cape. Since 1996, The Valley Trust Nutrition Education Programme (in KwaZulu-Natal) has begun to concentrate on the promotion of traditional,

home-grown foods among rural women, following investigations which showed that most did not identify with the “Three Food Groups” being taught to them (The Valley Trust 1996).

When planning nutrition education strategies and developing country-specific nutrition education messages to improve the health status of South Africans many of whom are experiencing the “double burden” of under- and over-nutrition, nutrition messages need to focus on adequacy as well as moderation (prudence). They also need to bear in mind barriers that may prevent the implementation of these messages, such as existing dietary habits and socio-economic influences (Vorster 1997). The development of appropriate nutrition education messages and materials, and the integration of these as part of the Integrated Nutrition Programme (INP) is also strongly supported by the National Department of Health: Nutrition Directorate, but as yet, this is still a fragmented activity (Ngcobo 1998; McLachlan & Kuzwayo 1997).

2.3 THE ROLE OF THE CONSUMER IN THE DEVELOPMENT OF FBDGs AND FOOD GUIDES

Available evidence suggests that nutrition messages are commonly misunderstood and applied inappropriately by consumers. Studies conducted in the 1990’s in the United Kingdom and the Netherlands found that less than 1% of the population was achieving the country’s specific dietary guidelines. In a more recent consumer attitudinal survey of the European Union, a number of barriers to the implementation of dietary advice were identified, namely, time, taste of food, willpower, price, and preferences of others. One of the most significant findings was that 71% of participants believed that they “did not need to change their diets as it was already healthy enough” (Kearney & McElhone 1999).

During the 1990’s, the United States conducted several national surveys to assess the impact of their dietary guidelines on changing dietary behaviour. In 1991, the “Survey of American Dietary Habits” indicated that only 44% of respondents were achieving or striving to achieve a healthy diet. A repeat of this survey in 1993 saw a drop in this figure to 39%. The 1994 “Trends in the United States: Consumer Attitudes and the Supermarket” survey had only 33% of respondents striving to improve their diets. Commonly perceived obstacles to good nutrition included taste, time and confusion. These findings were confirmed by food intake data studies done at the time, namely, that while intakes of grain products, fruits and vegetables were increasing, little progress was being made to reduce intakes of fats and saturated fats (Crane, Hubbard & Lewis 1998; Morreale & Schwartz 1995; McBean 1994; Kant, Schatzkin, Ziegler & Nestle 1991).

Consumer or market testing is therefore strongly recommended by the FAO/WHO as critical to the success of a country’s FBDGs and food guides, to ensure that the public is aware of, understands and can apply the dietary information (WHO 1998). There is little documentation, however, of formal consumer studies being conducted to determine whether the target audience for which the dietary guidelines are intended actually understand and can implement the guidelines. Where consumers are involved in the development process, their inclusion appears to be that of a minor role, namely, with representatives of various consumer groups attending general meetings (WHO 1999; ILSI 1996).

Where consumer research and evaluation is done, it focuses on the ability of the food guide (and in particular, its graphic design) to facilitate recall, rather than facilitate behavioural change (Hertzler 1996; Welsh 1996; Gust, Gutsche & Lohnes 1995a, 1995b; Hunt, Rayner & Gatenby 1995; Anon 1994; Achterberg, McDonnell & Bagby 1994; Hunt, Rayner & Gatenby 1994; Maskow 1992; Welsh, Davis & Shaw 1992b).

While there is a paucity of data on consumer testing of dietary guidelines involving representative samples of a country's population, the recently released American Dietary Guidelines 2000 illustrate the importance of including consumer testing in the development phase. Fourteen qualitative focus group sessions were held in three cities totalling 100 participants representing a demographic mix. There was a low level of awareness of the 1995 dietary guidelines, and a consistent request for technical concepts to be simplified and translated into practical terms. Participants across the board requested action-oriented guidelines with meaningful examples on how to fit the guidelines in to their everyday lives. Based on these findings, a number of changes were made to the wording of several of the dietary guidelines resulting in the current 2000 version (Keenan & Abusabha 2001; Kennedy & Davis 2000).

In terms of a country's food guide, apart from the United States, little data is available on attempts made by countries to evaluate the impact of their food guides. Where evaluation has occurred, it has focused on the ability of the food guide graphic to facilitate recall, rather than facilitating positive behavioural change. Without this information it is difficult to determine whether food guides are achieving their primary goal, namely, to provide practical advice to assist people in the selection of an adequate diet (Deakin University 1995a, 1995b; DHHS/USDA 1995; Gust, Gutsche & Lohnes 1995a, 1995b; Hunt, Gatenby & Rayner 1995).

In 1995, the United States Department of Agriculture (USDA) developed the "Healthy Eating Index" to measure how well Americans were following the dietary advice provided by the national food guide. Results confirmed findings of several national surveys conducted during the 1990's to assess the impact of the national food guide on dietary behaviour, namely that the food guide was not facilitating positive behavioural change:

- * <33% of respondents consumed the suggested number of servings from the nutrient-dense food groups

- * 20% of respondents consumed fewer fruits, vegetables and grains as recommended

- * >80% of respondents consumed more total and saturated fat than recommended

(DHHS/USDA 1995).

Of those countries that have subjected their food guides to consumer research, much of this has occurred *after* the number of food groupings has been determined (usually by the health professionals developing the food guide). There is therefore little documented research to show consideration of one of the main criteria recommended in the development of effective food guides, namely, that the food guide should acknowledge the way(s) in which foods are categorised by the people of that specific country (Cronin 1998; WHO 1998).

Axelson, Kurinij & Brinberg (1986) tested whether the United States "Basic Four" food guide reflected how consumers categorise foods. Study participants seemed to group foods in a manner related to, but more complex than, the "Basic Four". They did not classify eggs, peanut butter and dried (navy) beans as meat substitutes. They also grouped rice,

corn, fried potatoes and dried (navy) beans together (foods which the “Basic Four” grouped in the ‘bread’, ‘vegetable’, ‘vegetable’ and ‘meat’ groups, respectively). The researchers suggested that these findings be considered when developing a new food guide, and that a “legumes” (plant protein) group and “starchy vegetables” group be created. These findings, however, were not included when work began on the United States Food Guide Pyramid in 1988.

The circular “5-food group” food guides for Australia and the United Kingdom (UK) both feature potatoes. The Australian food guide places potatoes in the vegetable group, while the UK food guide places them in the cereal group. In both cases, the placement of potatoes is based on current dietary patterns. To encourage a wider use of legumes, the Australian food guide places legumes (chick peas, soya beans and lentils) in both the vegetable and meat groups. Neither the Australian nor the UK food guides conducted consumer research to determine if such groupings were understood by the consumer (The Children’s Health Development Foundation, South Australia, and Deakin University, Victoria 1998; Gatenby, Hunt & Rayner 1995).

A food guide that has undergone consumer research and actually incorporated consumer food categorisation in to its design is the Puerto Rico Food Guide Pyramid. Using the United States Food Guide Pyramid as a starting point (because so many foods are imported from America and the pyramid is part of the product label) it was found that while the general concept of food groupings was understood, actual foods grouped together varied and additional food groupings existed. “Viandas” are a staple of the Puerto Rico diet - foods that are cooked with meat in a stew e.g.: green bananas, calabaza (local pumpkin) and carrots. Nutritionists in Puerto Rico considered these foods as part of the fruit or vegetable groups. Consumers, however, classified these foods as part of the cereal group. The Puerto Rico Food Guide Pyramid therefore features “viandas” as part of the cereal group as this reflects consumer categorisation of these foods (Macpherson-Sanchez 1998).

A food guidance process for cross-cultural counselling is also being used in the United States to create more culturally specific food guides. Interactive focus group discussions are conducted with culturally diverse groups to generate ideas about food situations and problems encountered by them in the United States. This information is then used to modify the national food guide (Food Guide Pyramid) and to develop additional support materials to assist them in integrating American foods into their existing diets. It is hoped that this process will reduce the problem of imposing the professional’s values on the cultural group, and blaming the participant for programme failure (Hertzler, Stadler, Lawrence, Alleyne, Mattioli & Majidy 1995).

It would appear that while remarkable agreement exists between the dietary guidelines of different countries, such dietary guidelines have generally been derived from epidemiological data with little or no account of consumer attitudes and perceptions. Such guidelines may therefore be theoretically ideal, but, unless they provide nutrition information in a way that overcomes perceived or encountered barriers, they are likely to remain unattainable to a large proportion of the population. These findings present a formidable challenge for nutrition educators. Apart from the provision of nutrition information, more efforts may need to be made to help people evaluate their eating habits, recognise the possible need to alter their habits, and apply strategies to improve habits as determined by the specific circumstances of the person.

In terms of food guides, despite the recognition that these should be developed for the consumer's benefit, upon review it is apparent that the majority of food guides remain professional-based. That is, developed primarily to assist the professional, and only considering the consumer's ability to use the guide as a secondary function. Consumer research is seldom used to assess the acceptability of the chosen food groupings to the consumer for whom the food guide is intended. Such professional-based food guides ignore the empirical evidence that people learn more easily when the information that is provided builds on pre-existing knowledge. When food guides are developed by professionals to reflect their own perceptions of food groupings, rather than those of the consumer, such guides may be inconsistent with consumer perceptions of foods, and may be ineffective educational tools (Deutsch & Morrill 1993; Axelson & Brinberg 1992; Axelson, Kurinij & Brinberg 1986).

In South Africa, nutrition education attempts have been ad hoc and their impact on knowledge and behaviour change has not been extensively evaluated. Quantitative data regarding the health/ disease status of South Africans and their food consumption patterns indicate that nutrition education has not made much impact on achieving desired behaviour change and optimal nutritional status. It is suggested that this is the result of poor coverage, insufficient education materials, inconsistent messages and, mainly, the use of nutrition messages that are inappropriate because they do not reflect the needs of the people. The development of country specific nutrition messages that are subjected to consumer testing has therefore been a prime consideration for the South African FBDG Work Group (Ladzani, Steyn & Nel 2000; Vorster *et al.* 1997; Walker 1996; IUPHC 1995; Walsh 1995; Steyn, Louw & Neethling 1993; Langenhoven, Rossouw, Jooste, Chalton, Swanepoel, Rossouw, Jordaan & Steyn 1991).

2.4 SUMMARY

Today's consumers are faced with a multitude of, often conflicting, nutrition messages. As a consequence, consumers are beginning to discount them entirely – a phenomenon referred to as a *nutrition backlash*. To help consumers discriminate among nutrition messages, it is suggested that nutrition educators make use of approaches, messages and support materials that will enhance awareness, increase knowledge and, most importantly, establish the motivation needed for behaviour change.

In light of this, it is recommended that health promotion and communication models be used when developing nutrition education materials/programmes, where the starting point is the nature and accessibility of the food supply. There is also a growing recognition of the need to make use of strategies designed to include the consumer/community in all aspects of planning and implementation, and to strengthen community ownership of programmes for sustainability.

The challenge for nutrition educators then, is to conduct nutrition education using principles of health promotion and communication. By doing so, nutrition educators may be better able to reach their intended target groups, and better able to assess the effectiveness of their endeavours based on measured outcomes rather than subjective impressions. This, in turn, might provide more accurate guidance as to how such nutrition education attempts should be modified to improve their effectiveness. A public health promotion strategy recommended by the FAO/WHO consultation, in response to the World

Declaration and Plan of Action for Nutrition, is the dissemination of nutrition information through country-specific FBDGs (and appropriate food guides).

When comparing dietary guidelines of different countries, it is evident that while many countries are embracing the concept of FBDGs, the true concept of “food-based” dietary guidelines has not yet been universally adopted. A number of dietary guidelines are still essentially nutrient-based, include numeric dietary goals, and make use of negative language (avoid, limit). There is also a paucity of information regarding the process followed by a country when developing its dietary guidelines. Even less information is available as to whether formal consumer testing has been conducted whilst developing dietary guidelines, despite the fact that nutrition experts agree that this is an essential step in the development process. Such guidelines may therefore be theoretically ideal, but, unless they provide nutrition information in a way that overcomes perceived or encountered barriers, they are likely to remain unattainable to a large proportion of the population.

It is recommended that for food guides to fulfil their main purpose - to translate nutrient standards and recommendations (dietary goals and guidelines) into simple, practical advice on the types, and sometimes quantities, of various foods needed for optimum health - they should complement the country’s dietary guidelines, reflect foods/drinks commonly consumed and way(s) in which consumer’s personally categorise these foods/drinks, and make use of graphic designs that are readily understood by the consumer. Upon review it is apparent that the majority of food guides are developed primarily to assist the professional, only considering the consumer’s ability to use the guide as a secondary function. Consumer research is seldom used to assess the acceptability of the chosen food groupings to the consumer for whom the food guide is intended. Where consumer research and evaluation is done, it focuses on the ability of the food guide (and in particular, its graphic design) to facilitate recall, rather than facilitate behavioural change.

Country-specific food-based dietary guidelines have never been developed for South Africans. Instead, a multitude of different, often conflicting and confusing, nutrition education messages exist, used independently or together with a variety of food guides adapted mostly from westernised countries. Quantitative data regarding the health/disease status of South Africans and their food consumption patterns suggest that such nutrition education has not made much impact on achieving optimal nutritional status. It is likely that the nutrition messages (dietary guidelines) and food guides being used to promote healthy diets and lifestyles are inappropriate because they have not been developed to address the country’s specific nutrition-related public health issues, or tested to ensure consumer understanding and implementation.

The documentation and critical analysis of the South African FBDGs process and the incorporation of extensive consumer testing as an integral part of this process are therefore important contributions to the FBDGs development process, not only for South African research, but also internationally. This study therefore has the potential to play a significant and unique role in establishing a viable process for the development of a uniform (national) set of country-specific nutrition education messages that may be more appropriate for the South African consumer than the existing multitude of different nutrition education messages.

CHAPTER 3: THE SOUTH AFRICAN FOOD-BASED DIETARY GUIDELINES

The process used in developing the proposed South African food-based dietary guidelines (FBDGs) is discussed in chapter three. This discussion covers study objective 1 - the documentation and critical analysis of the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO consultation. This discussion is presented in three parts, namely, documentation of the South African FBDGs development process, a critical analysis of this process in terms of the FAO/WHO FBDGs development process, and recommendations on how the FBDGs development process might be extended.

Few countries provide detailed documentation and analysis of the process used when developing dietary guidelines for their country. Even fewer countries conduct extensive consumer testing when developing their dietary guidelines, despite the fact that nutrition experts agree that this is an essential step in the development process. The documentation and critical analysis of the South African FBDGs process and the incorporation of extensive consumer testing as an integral part of this process are therefore important contributions to the FBDGs development process, not only for South African research, but also internationally.

3.1 DEVELOPMENT PROCESS OF THE SOUTH AFRICAN FBDGs

Existing guidelines in South Africa are either nutrient-based or only aimed at a population eating a typical Western diet (DOH/HMAC 1992; Diet Consensus Panel 1989). Motivated by the FAO/WHO FBDG initiative, the Nutrition Society of South Africa (NSSA) decided to form a working group that could start the process of developing country-specific FBDGs. Under the leadership of Professor HH Vorster, volunteers were invited to serve on the working group to develop FBDGs for South Africans (NSSA 1996). The South African Food-Based Dietary Guidelines (SA FBDG) Work Group was officially formed in May 1997. Since its inception, the SA FBDG Work Group has held several meetings culminating in a draft set of ten proposed FBDGs for South Africans. A chronological review of the main outcomes of these meetings is presented in Table 3.1.

Table 3.1 Chronological review of main outcomes of various meetings related to the SA FBDGs
(after Pietinen 2002; SA FBDG Work Group 2001; 2000; 1999; 1998)

DATE	No. People	TYPE OF MEETING	MAIN OUTCOMES
19-05-1997	present: 7	SA FBDG Work Group Committee Meeting	Agreed to follow the recommended FAO/WHO 10-step FBDGs process.
22-10-1997	present: 12 apologies: 7	SA FBDG Work Group Committee Meeting	Overall aim of the FBDGs should be to address the nutrition transition experienced. Mandate – to develop separate FBDGs for the promotion of health to healthy South Africans older/younger than 5 years of age (revised to 7 years of age in October 2001).
09-02-1998	present: 9 apologies: 8	SA FBDG Work Group Committee Meeting	First draft set of 14 FBDGs compiled based on reviews of nutrition-related public health concerns, mortality trends, and food consumption patterns of South Africans. No consensus regarding guidelines for calcium, fat/salt, caffeine or lifestyle advice.
27-05-1998	present: 67	Full-Day Workshop held during biennial Nutrition Congress	Full discussion with nutrition/health professionals regarding each proposed FBDG in terms of health relevance, scientific evidence, practical application, comprehension and ability to address nutrition transition (adequacy and prudence). Second draft set of 11 FBDGs compiled, taking into consideration input from nutrition/ health professionals.
01-08-1998	present: 10 apologies: 3	SA FBDG Work Group Committee Meeting	Wording of proposed FBDGs reviewed in terms of FAO/WHO criteria, namely, action-oriented, positive, and concise. Third draft set of 11 FBDGs compiled.
22-01-1999	present: 7 apologies: 5	SA FBDG Work Group Committee Meeting	Agreed that the third draft set of FBDGs should be subjected to extensive consumer testing across all socio-economic spectra within South Africa in order to identify cross-cultural interpretations and to establish accurate translations. Agreed to form sub-committees to address adaption of FBDGs for other priority groups (HIV, pregnancy, breastfeeding, paediatrics, elderly, chronic illness).
18-01-2000	present: 10 apologies: 6	SA FBDG Work Group Committee Meeting	Presentation of consumer testing results for KwaZulu Natal and Western Cape provinces, and proposed changes to certain FBDGs based on these findings.
17-08-2000	approx. 200	Half-Day Symposium held during biennial Nutrition Congress	FBDGs symposium at the National Nutrition Congress, with presentations and full discussion of the consumer study results and FBDGs process.
18-10-2000	present: 9 apologies: 4	SA FBDG Work Group Committee Meeting	Agreed that the final draft set of 10 FBDGs should be submitted to Department of Health for national approval and adoption. Agreed that technical support papers should be finalised prior to submission.

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Continuation of Table 3.1 Chronological review of main outcomes of various meetings related to the SA FBDGs (after Pietinen 2002; SA FBDG Work Group 2001; 2000; 1999; 1998)

DATE	No. People	TYPE OF MEETING	MAIN OUTCOMES
February 2001			FBDG Consumer study results for KwaZulu Natal and Western Cape published in SAJCN (2001), Vol. 14, No 1.
11-06-2001	FBDG: 3 HMC: 35	Presentation to HMC (Health Management Committee): National Department of Health	Presentation made by members of the SA FBDG Work Group for consideration of approval and adoption of the proposed FBDGs as national dietary guidelines for South Africa. SA FBDG Work Group requested to consider including a FBDG on sugar and to reword "foods from animals" FBDG to de-emphasise frequent consumption of these foods.
21-08-2001	present: 30	Workshop with Department of Health	Workshop to discuss outcomes of Health Management Committee meeting, in particular, the formulation of a "sugar" FBDG.
September 2001			Technical support papers published in SAJCN (2001) Supplement, Vol. 14, No. 3.
01-10-2001	present: 9 apologies: 3	SA FBDG Work Group Committee Meeting	Agreed to proposal from paediatric FBDG sub-committee to change age cut-off of FBDGs from 5 years to 7 years.
22-01-2002	present: 3	Meeting between SA FBDG Chairman and representatives from WHO and Department of Health.	Meeting to discuss the formulation of the "sugar" FBDG. Agreed that this FBDG will be formulated based on findings of the WHO Expert Report on Chronic Diseases (due for release during 2002).
January – September 2002			Consumer testing of proposed "sugar" FBDGs within KwaZulu Natal (English and Zulu), and the Western and Eastern Cape (Afrikaans and Xhosa).
October 2002			Release of independent report "Evidence for a FBDG on sugar", compiled on behalf of the Department of Health, with the proposed "sugar" FBDG "Eat foods and drinks containing sugar sparingly and not between meals".
04-10-2002	present: 8 apologies: 5	SA FBDG Work Group Committee Meeting	Agreed that the "sugar" FBDG to be submitted to Department of Health for national approval and adoption would be worded "Use sugar and sugar-containing foods and drinks in moderation".
02-12-2002	HMC: 35	Presentation to HMC (Health Management Committee): National Department of Health	Presentation made by Nutrition Directorate for consideration of approval and adoption of reworded "foods from animals" FBDG and a "sugar" FBDG. Approval given for both FBDGs (with "sugar" FBDG as proposed by independent report). All (eleven) proposed FBDGs to be recommended by the HMC to the Public Health Restructuring Committee (PHRC) meeting for national approval.

At the first meeting of the SA FBDG Work Group (19-05-1997), it was agreed that the FAO/WHO 10-step process for developing FBDGs would be followed, namely:

- Formation of a working group, comprising representatives of agriculture, health, education, food science and nutritional science sectors of academia, consumer groups and other pertinent non-governmental organisations, food industry, communications and anthropology
- Collection of data on nutrition-related diseases, food availability and food intake patterns, current practices, subsidies and other governmental policies in the country
- Identification, after full discussion, of major nutrition-related health problems for which dietary guidelines could be useful and implemented in the present situation
- Formulation of a draft set of FBDG statements
- Preparation of background (technical support) papers for each FBDG statement
- Testing of the FBDG statements on consumers, and revising where necessary
- Finalisation of background papers and submission to local and national interest groups (and possibly international advisers) for comment
- National adoption of FBDG statements
- Dissemination through training of nutrition educators, consumer education materials and programmes, and mass media
- Review of the FBDGs as additional scientific evidence becomes available regarding nutrient-health effects, and in accordance to changes in dietary consumption patterns of the population

(WHO 1998).

Although an advertisement was placed in the local peer-reviewed journal for volunteers to serve on the SA FBDG Work Group, this elicited few responses (NSSA 1996). It was therefore agreed that a concerted effort should be made to identify and invite representatives from as many of the areas as recommended by the FAO/WHO FBDGs development process. A number of organisations and individuals were approached and, to date, the SA FBDG Work Group consists of an interdisciplinary and inter-sectorial group of twelve members, with representation from:

- Department of Health, Nutrition Directorate
- United Nations Children's Fund (UNICEF)
- academia (University of Cape Town, University of Natal, Potchefstroom University)
- agricultural producer organisations (Dry Bean, Red Meat)
- food industry (South African Sugar Association, Unifoods)
- professional associations (Association for Dietetics, Nutrition Society)
- Medical Research Council

(SA FBDG Work Group 1998).

Attempts were made to include the Departments of Agriculture and Education, but due to limited resources representatives were unable to attend meetings. Several agricultural producer organisations were, for various reasons, also unable to attend the meetings. Despite non-attendance at the meetings, communications were kept open with these individuals/organisations so that they could receive feedback on the FBDGs development process. Minutes of all meetings of the SA FBDG Work Group were circulated to the twelve members of the working group and were also available on request to other individuals/organisations (SA FBDG Work Group 1998).

Members of the SA FBDG Work Group were tasked with the collection of data as suggested by the FAO/WHO FBDGs development process, namely, nutrition-related diseases, food availability and food intake patterns, current practices, subsidies and other governmental policies in the country. This information was presented at the second meeting of the SA FBDG Work Group (22-10-1997) and confirmed that South Africans are experiencing a nutrition transition characterised by changes in traditional eating patterns to those more typical of an urbanised lifestyle. The consequence of this is a high incidence of malnutrition, with diseases of both under- and over-nutrition (Labadarios *et al.* 2001; Vorster *et al.* 1997).

Following the collection and presentation of data (as described above), three areas were identified as priority concerns to consider when generating FBDGs for South Africa. These areas were the existence of household food insecurity, different nutrition-related public health concerns for children and adults, and a range of dietary practices and nutrient intake patterns for people determined by culture, ethnicity, religion and/or socio-economic factors. How this information was used to construct the preliminary FBDGs is described in more detail below. It should be noted that, to facilitate discussion regarding the SA FBDG development process, the nutrition-related public health information presented in this chapter has been updated from that originally collected by the SA FBDG Work Group.

3.1.1 Household food insecurity

There is general agreement that, while national food security exists in South Africa, household food security does not. This is especially so in rural areas where agriculture contributes very little at present to household income or food intake (Vorster *et al.* 1997). A recent comparison of national food security (data from 1998/99 food balance sheets) with household food security (data from dietary surveys) indicates that large sectors of the South African population are food insecure, in particular, Black and Coloured children (Steyn, Robertson, Mekuria & Labadarios 1998). The high prevalence of stunting among South African children is regarded as a reflection of poor household food security, as well as other inequalities (Steyn, Abercrombie & Labadarios 2001; Steyn *et al.* 1998).

Poverty is universally accepted as a fundamental cause of under-nutrition and in South Africa it is considered a serious problem. Figures released by Health Systems Trust (1996) estimated an overall poverty rate for South Africa of 85.9%, of which 57.2% were Black households, 19.8 % were Coloured households, 6.8% were Indian households and 2.1% were White households. A comparison of income, expenditure and household subsistence data conducted by Rose and Charlton (2000) indicated that 43.5% of South African households experienced food insecurity in 1995. Higher food insecurity rates were found with decreasing income, increasing household size, and among households headed by Black females. These results were consistent with previous reports on overall poverty (Steyn 1998).

When asked about difficulty feeding the household, 97% and 98% of White and Indian households reported that they never go hungry, compared with 71% of Coloured and 45% of Black households. Eighty-eight percent of those households reporting that they often go hungry had incomes below the minimum living level (total household income below R900) (CASE 1995). Similar findings were produced from the 1999 South African National Food Consumption Survey (under 10 year olds). Two out of four households experienced

hunger, one out of four households were at risk of hunger, and only one out of four households appeared food secure. In rural areas, a significantly higher percentage of households experienced hunger compared with those in urban areas (Labadarios *et al.* 2001).

An important consequence of poverty in South Africa is the inadequate or poor education of women, who are predominantly responsible for the health of the household. This often results in a struggle to gain control over limited resources, and is a risk factor for inappropriate nutritional practices leading to malnutrition (Labadarios *et al.* 2001; Vorster *et al.* 1997; Krige & Senekal 1997; UNICEF 1993).

3.1.2 Nutrition-related public health concerns

In South Africa, the co-existence of under- and over-nutrition is evident between populations, but also within populations and even within the same household. A nutrition status survey, undertaken in a semi-rural village of Lebowa (Northern Province), revealed that of 659 pre-school children, 12% were underweight and 28% stunted. Of their siblings, 21% were underweight and 36% stunted. In contrast, 31% of their carers (mother or grandmother) were overweight (Steyn, Nel, Tichelaar, Prinsloo, Dhansay, Oelofse & Benade 1994).

The nutrition-related public health concerns of both children and adults were investigated to determine any similarities and/or differences. The main nutrition-related public health concerns of South Africans (see Tables 3.2 and 3.3) can be summarised as follows:

- high maternal mortality rate among (rural) Black women (Health Systems Trust 2001; 1998)
- high infant mortality rate among (rural) Black infants (Health Systems Trust 1998)
- low life expectancy for Black and Coloured adults (Health Systems Trust 1998)
- under-nutrition, especially among Black and Coloured children under 5 years of age in the form of low birth weight, wasting, underweight for age, stunting, and low micronutrient (in particular, vitamin A, iron and folate) intakes (Labadarios *et al.* 2001; Benade, Oelofse, Van Stuijvenberg, Jooste, Weight & Benade 1997; Vorster *et al.* 1997; SAVACG 1995; Dhansay & Hendriks 1994; DOH 1994)
- overweight and obesity among children (aged 1-9years) and adults (aged 15-64years) (Labadarios *et al.* 2001; Health Systems Trust 2001)
- chronic diseases of lifestyle among adults (aged 16-64years), in the form of hypertension, heart disease, stroke, non-insulin dependent diabetes mellitus (NIDDM), and cancer; and dental decay among the total population (Health Systems Trust 2001, 1996; Fritz 1995; Levitt & Mollentze 1995; NOHS 1994)
- “risky” lifestyle behaviours among the total population, in the form of smoking, excessive alcohol consumption, inactivity and HIV/AIDS (Dorrington, Bourne, Bradshaw, Laubscher & Timaeus 2001; Health Systems Trust 2001, 1996; CASE 1995; Noakes & Lambert 1995; Yach 1995)

Table 3.2 Nutrition-related public health concerns of South Africans
– Consequences of under-nutrition

NUTRITION-RELATED PUBLIC HEALTH CONCERN	SOUTH AFRICAN DATA	REFERENCES
Life Expectancy at Birth (if current mortality trends were to continue for rest of person's life)	Black adults 55.5 years Coloured adults 58.4 years Indian adults 61.5 years White adults 65.5 years	Health Systems Trust (2001)
Projected Life Expectancy due to impact of HIV infection	Year 2000 55 years Year 2010 40 years	Dorrington <i>et al</i> (2001)
Maternal Mortality Rate (expressed as number of maternal deaths per 100 000 live births per annum)	Black women estimated at 150 Coloured women 22 Indian women 5 White women 8	Health Systems Trust (2001); Health Systems Trust (1998)
Infant Mortality Rate (expressed as number of infant deaths per 1000 live births per annum)	Black infants 47.0 Coloured infants 18.8 Indian infants ---- White infants 11.4	Health Systems Trust (2001)
Under 5 Mortality Rate (expressed as number of under 5 deaths per 1000 live births per annum)	Black infants 63.6 Coloured infants 28.2 Indian infants ---- White infants 15.3	Health Systems Trust (2001)
Low Birth Weight (<2.5kg)	Neonates - 12-19% (mostly rural Black neonates 18-24%)	Dhansay & Hendriks (1994)
Wasting (>2SD below mean weight for height)	Under 5 years – 2-3% Primary school – 2.6% (N West, N Cape, N Province)	Labadarios <i>et al</i> (2001); Vorster (1997); Vorster <i>et al</i> (1997); SAVACG (1995); DOH (1994)
Underweight for Age (>2SD below mean weight for age)	All children – 3-19% Under 5 years – 16% (9-15% Blacks) Primary school – 9% (mostly rural areas, especially N Cape)	
Stunting (>2SD below mean height for age)	All children – 25-35% Under 5 years – 20-30% Primary school – 13.2% (N Cape, E Cape, N Province)	
Anaemia (Hb <11g/dl; serum ferritin <12mcg/l)	Urban Black infants Girls and women (aged 11-65 years)	Vorster <i>et al</i> (1997)
Low Folate Status	Infants, children, adolescents – 8-31% (areas unspecified)	Vorster <i>et al</i> (1997)
Vitamin A Deficiency (serum vitamin A <20mcg/l)	Under 5 years – 25-38% (N Province, KZN, Mpumalanga)	Vorster <i>et al</i> (1997); SAVACG (1995)
Iodine Deficiency (visible goitre)	All children – 1% (N Province, N Cape, KZN, east Gauteng)	Benade <i>et al</i> (1997); Vorster <i>et al</i> (1997)

* SD – standard deviations

* Hb – haemoglobin

Table 3.3 Nutrition-related public health concerns of South Africans
– Chronic diseases of lifestyle & “risky” behaviours

NUTRITION-RELATED PUBLIC HEALTH CONCERN	SOUTH AFRICAN DATA				REFERENCES
Obesity (W/H = >2SD) (South African children – 1-9 years)	National average	6.0%			Labadarios <i>et al</i> (2001)
	Urban children (1-9y)	7.5%			
	Rural children (1-9y)	2.5%			
Obesity (BMI>30) (South African adults – 15-64 years)		Males	Females		Health Systems Trust (2001)
	Black adults	7.7%	30.5%		
	Coloured adults	9.1%	28.3%		
	Indian adults	8.7%	20.2%		
	White adults	19.8%	24.3%		
Hypertension (blood pressure >160/95mmHg) (South African adults – 16-64 years)		Males	Females		Health Systems Trust (2001)
	Black adults	10.3%	13.0%		
	Coloured adults	12.4%	17.1%		
	Indian adults	9.9%	9.3%		
	White adults	15.2%	12.0%		
Hypercholesterolaemia (total cholesterol >5.7mmol/L) (South African adults)	Rural Black adults	15%			Fritz (1995)
	Urban Black adults	31%			
	Urban Coloured adults	74%			
	Urban Indian adults	72%			
	Urban White adults	86%			
Cancer (age standardised incidence rate per 100 000 population) (South African adults – 16-64 years)	Men	163			Health Systems Trust (1996)
	(skin, prostate, oesophagus, lungs)				
	Women	146			
	(cervix, breast, skin)				
Non-Insulin Dependent Diabetes Mellitus (South African adults – 16-64 years)	Urban Black adults	6.0%			Health Systems Trust (1996); Levitt & Mollentze (1995)
	Urban Coloured adults	8.7%			
	Urban Indian adults	11-13%			
	Urban White adults	3.7%			
Dental Decay Mean DMFT % no teeth (35-44years) % no teeth (60-64years)	Black	Coloured	Indian	White	NOHS (1994) (more recent 1998/99 data not yet available)
	1.7	2.1	1.3	1.8	
	2.0	51.0	2.0	17.0	
	10.0	67.0	20.0	40.0	
HIV Prevalence (% total South Africa population estimated to be HIV+)	1995 – 4.5%				Health Systems Trust (2001)
	1998 – 9.9%				
	1999 – 12.9%				
Smoking Rates (% South African adults who smoke)		Males	Females		Health Systems Trust (1996); Yach (1995)
	Black adults	46.0%	6.0%		
	Coloured adults	63.0%	49.0%		
	Indian adults	48.0%	8.0%		
	White adults	40.0%	34.0%		
Alcohol Consumption (% South African adults who consume alcohol)		Males	Females		CASE (1995)
	Black adults	46.0%	13.0%		
	Coloured adults	56.0%	27.0%		
	Indian adults	32.0%	3.0%		
	White adults	77.0%	58.0%		

* W/H – waist to hip ratio

* SD – standard deviations

* BMI – body mass index

* DMFT (decayed, missing due to decay, filled teeth)

With urbanisation and industrialisation, it is predicted that mortality from infectious diseases and undernutrition will decrease among the younger age groups, and life expectancy will rise along with an increased risk of chronic diseases of lifestyle (CDL). As South Africa's life expectancy improves, mortality from CDL, currently estimated at 28.5% of all adult mortality, can therefore be predicted to increase (Murray & Lopez 1997; Health Systems Trust 1996; Popkin, Siega-Riz & Haines 1996; Bradshaw, Bourne, Schneider & Sayed 1995).

The effect of HIV/AIDS, however, is predicted to decrease life expectancy considerably if transmission prevention and treatment programmes are not intensified. It is currently estimated that 40% of South African adult (15-49 years) deaths during the year 2000 were due to HIV and 20% due to AIDS. When this figure is combined with deaths in childhood, it is estimated that AIDS accounted for about 25% of all deaths in the year 2000 (Dorrington *et al.* 2001).

3.1.3 Dietary practices and nutrient intake patterns

Currently, the diet of the rural Black South African dweller is closest to meeting dietary recommendations for fat and carbohydrate intakes. However, with improved socio-economic circumstances, such diets are evolving, as is evident from the diets of many urban Black households, which are beginning to resemble those of other urban populations. A brief description of typical South African dietary patterns is provided below.

Settled rural Black South Africans still follow a traditional diet. Breakfast, if eaten, consists of bread or a bowl of soft maize ("mealie-meal") porridge with sugar, and tea. Two main meals are the norm, usually eaten at noon and sunset. Between meal snacks are uncommon. Staple foods include maize porridge ("puthu"), green/dried corn ("mealies"), coarsely ground corn ("samp"), millet and sorghum (used primarily to make beer), rice and mealie-rice (eaten on Sundays), amadumbe ("Zulu potato"), and to a lesser degree, brown bread. Common vegetables eaten are wild spinaches ("imifino"), giant mushrooms and pumpkin. Fruit, eaten mostly by the women and children, include wild plums and prickly pears. Protein is supplied mostly via plant sources (legumes, roasted groundnuts), with edible insects, wild birds, small game, rodents, goat's meat, eggs, beef, mutton, chicken or pork eaten 2-3 times a week. Fish is eaten only 1-2 times a month. Dairy intake is low and mainly in the form of soured milk and curds ("amasi"). Thin, fermented maize porridge ("amahewu"), sour milk, tea and beers are usual beverages (Vorster *et al.* 1997; Walker 1996; SANSS 1995; Dhansay & Hendriks 1994; Vorster, Venter, Mennsink, Van Staden, Labadarios, Strydom, Silvis, Gericke & Walker 1994; Iputo & Makuzeni 1993; Mackeown, Cleaton-Jones & Senekal 1993; Richardson, Sinwel & Cleaton-Jones 1991; Coetzee 1982; Manning, Mann, Sophangisa & Truswell 1974).

Urban Black South Africans eat a partially westernised diet, with few traditional foods and dishes. Two to three meals are eaten daily, with between meal snacking. Staple foods include brown bread, refined maize ("mealie") meal and rice. Intakes of dairy products are low, with artificial whiteners and creamers commonly used in place of milk. Vegetables and fruits are eaten in small amounts. Intakes of animal protein and saturated fat are high (Vorster *et al.* 1997; Van Eeden & Gericke 1996; Walker 1996; Langenhoven, Wolmarans, Jooste, Dhansay & Benade 1995; Bourne, Langenhoven, Steyn, Jooste, Nesamvuni & Laubscher 1994; Mackeown *et al.* 1994; UNISA 1994).

Urban Coloured South Africans eat two to three meals a day (breakfast being the meal that is often missed). Between meal snacking is common. A variety of foods are eaten by urban dwellers, with less variety in rural areas. Staple foods include bread (commonly white), rice and potatoes. Fruits and vegetables are not frequently eaten. Dairy consumption is low (<200ml milk/day) (Vorster *et al.* 1997; Walker 1996; Langenhoven *et al.* 1995; UNISA 1994; Steyn, Pettifor, Van der Westhuyzen & Van Niekerk 1990; Langenhoven, Steyn & Van Eck 1988; Langenhoven, Steyn, Van Eck & Gouws 1988).

Urban Indian South Africans have varied dietary habits as influenced by their religion. Muslims eat no pork or shellfish, and meat must be Halaal. Hindus may be vegetarians; non-vegetarians do not eat beef. Staple foods include rice, unleavened pancake (“roti”), white bread and potatoes. Fruits and vegetables are eaten two to three times a week. Dairy consumption is low (<200ml milk/day). Fat intake is high and supplied via clarified butter (“ghee”), butter, oil and margarine (Vorster *et al.* 1997; Walker 1996; Langenhoven *et al.* 1995; UNISA 1994; Richardson *et al.* 1991; Richardson & Cleaton-Jones 1986).

Urban White South Africans mostly eat three meals a day with between meal snacking. Staple foods include bread (all types), potatoes, sweet potatoes, rice and pasta. A variety of vegetables, fruits and animal proteins are eaten. Twenty-five percent of adults drink less than 400ml milk/day. Fat intake is via animal protein sources as well as the use of oil, margarine and butter (Vorster *et al.* 1997; Langenhoven *et al.* 1995; Mackeown *et al.* 1994; UNISA 1994; Richardson *et al.* 1991; Bremner, Langenhoven, Swanepoel & Steyn 1990).

At a national level, data from the National Food Consumption Survey (24-hour recall) indicated that the most commonly consumed food items were maize (“mealie-meal”), sugar, tea, whole (full cream) milk and brown bread. These same food items, together with hard margarine, were also identified as being the most commonly consumed food using quantified food frequency questionnaires. It was also important to note that these same six food items were also the most frequently procured and found most frequently in the house (Labadarios *et al.* 2001).

Nutritional analysis of typical dietary patterns as conducted by the South African National Food Consumption Survey (1999), as well as regional and ad hoc nutrient intake studies, indicate that:

- energy intakes are low for Black children younger than 16 years of age, but high for adults, especially Black, Coloured and Indian females older than 25 years
- among rural Black dwellers, protein intakes are adequate in volume, but not necessarily in quality. The protein intakes for urban dwellers are high, especially from animal sources
- for all South Africans, fat intakes, especially saturated fat, are increasing (average 35-39% of total daily energy intake), with a corresponding decrease in carbohydrate and fibre intakes
- calcium and iron intakes are low, especially among children and females
- folate and vitamin A intakes range from low to marginal, especially among children and females
- sodium intakes are high
- added sugar intakes range between 9.4% and 9.5% of total daily energy intake for children and adults respectively

(Nel & Steyn 2002; Labadarios *et al.* 2001; Vorster *et al.* 1997; Charlton & Wolmarans 1995; SANSS 1995; Bester, Weich & Dannhauser 1993; Faber, Kriek, Wolmarans, Van Staden, Benade, Labadarios, Slazus & Taljaard 1992; Walker, Walker & Walker 1992).

Such findings support the fact that the main dietary considerations for many South Africans are:

- household food insecurity (especially in rural areas and former homelands)
- low intakes of energy-dense weaning foods among the young
- low intakes of fruits, vegetables, legumes and possibly milk for all ages
- high intakes of animal foods (meat, poultry, eggs), total and saturated fats (fatty meats, coffee/tea creamers, oil, margarine, butter) and sodium (salted foods) among urban dwellers

These nutrient intake patterns are reflected in the health profile and mortality trends of South Africans, namely the co-existence of diseases related to under- and overnutrition (Vorster *et al.* 1997; Steyn, Fourie & Bradshaw 1992).

3.1.4 Construction of the preliminary FBDGs

When planning nutrition education strategies to improve the health status of South Africans, one is faced with the co-existence of under- and overnutrition. Dietary guidelines therefore need to focus on adequacy as well as prudence (moderation). They also need to bear in mind barriers that may prevent the achievement of dietary guidelines, such as traditional and/or cultural dietary practices and socio-economic influences. The need for consistent nutrition messages, such as a national set of dietary guidelines that promote adequate yet prudent (moderate) dietary habits, is therefore essential to prevent the negative health consequences of the South African nutrition transition (characterised by changes in traditional eating patterns to those more typical of an urbanised lifestyle, the consequence of which is a high incidence of malnutrition, with diseases of both under- and over-nutrition).

In South Africa, the issue of food insecurity in particular needs urgent attention. In relation to the development of country-specific FBDGs for South Africa, where food insecurity is a factor, such dietary guidance will need to focus more specifically on making better use of available food resources and providing suitable strategies on how to do so. Programmes aimed at combating hunger and alleviating poverty need to be intensified in this regard.

Additional efforts should also be made to better understand the economic role of women and decision-making processes in households (especially female-headed households) as well as strategies used by households to cope with food insecurity.

Based on the information collected (as previously described) decisions were made about the aim, target groups and content of the proposed South African FBDGs. To determine the aim, and to identify target groups and dietary issues, the SA FBDG Work Group compiled a table of the most prevalent nutrition-related public health concerns affecting South Africans, and possible implicated dietary and lifestyle factors (see Table 3.4).

Table 3.4 A comparison between South African nutrition-related public health concerns and possible implicated dietary and lifestyle factors (after SA FBDG Work Group 1998)

VULNERABLE GROUPS	NUTRITION-RELATED PUBLIC HEALTH CONCERNS AND POSSIBLE IMPLICATED DIETARY & LIFESTYLE FACTOR(S)	REFERENCES
<5 year (25-38%) mostly rural Black children	Marginal vitamin A status * moderate to low vitamin A intakes * moderate to low vitamin C intakes * low energy intakes * ? low fat intakes - ↓ absorption * fibre intakes - ↓ utilisation * tannin (tea) intakes - ↓ utilisation * ? zinc status/intake * infectious disease * unsafe water supply * poor sanitation	Labadarios <i>et al</i> (2001); Vorster <i>et al</i> (1997); Krige & Senekal (1997); CASE (1995); Dhansay & Hendriks (1994); Steyn <i>et al</i> (1994); Ramphele, Heap & Trollip (1991).
<5 year (20-30%) mostly rural Black children	Stunting * marginal vitamin A status (see above) * low energy intakes * protein intake used for energy instead of growth	
Urban Black infants; Girls and women (aged 11-65 years)	Anaemia * marginal vitamin A status (see above) * cereal-based diet (plant protein) - ↓ absorbable iron * low iron intakes * low folate intakes * moderate to low vitamin C intakes	
Children of all ages (8-31%)	Low folate status * low folate intakes	
<5 years (16%)	Underweight-for-age * low energy intakes * ? moderate to low fat intakes	
<5 years (2-3%)	Underweight-for-height (wasting) * low energy intakes * protein intake used for energy * ? moderate to low fat intakes	

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Continuation of Table 3.4 A comparison between South African nutrition-related public health concerns and possible implicated dietary and lifestyle factors (after SA FBDG Work Group 1998)

VULNERABLE GROUPS	NUTRITION-RELATED PUBLIC HEALTH CONCERNS AND POSSIBLE IMPLICATED DIETARY & LIFESTYLE FACTOR(S)	REFERENCES
Females >16years (20-30%) Males >16years (7-20%) Children (1-9years) (7.5%)	Obesity * undernutrition during foetal development and/or infancy * sedentary lifestyle * genetic predisposition * ↑ energy intakes * ↑ intakes of fats (mainly saturated) * ↑ intakes of animal protein * ↑ alcohol intakes * ↓ carbohydrate intakes * ↓ fibre intakes	Walker (1995); Barker, Gluckman, Godfrey, Harding, Owens & Robinson (1993)
Females >16years (9-17%) Males >16years (10-15%)	Hypertension * ? ↑ sodium intakes * ? ↓ calcium intakes * weight gain * smoking * alcohol * stress * insulin resistance * low renin status	Opie (1995)
Urban adults >16 years (31-86%)	Hypercholesterlaemia * genetic predisposition * hyperlipidaemia * hypercholesterolaemia * hypertension * non-insulin dependent diabetes * obesity * sedentary lifestyle * smoking * ↓ antioxidant intakes * ↓ intakes of vitamins B6, B12, folate	Oelofse, Jooste & Styen (1996); Mollentze, Moore, Steyn, Joubert, Steyn, Oosthuizen & Weich (1995); Seftel, Raal & Joffe (1995)
>16 years old (4-13%)	Non-Insulin Dependent Diabetes Mellitus * genetic predisposition * obesity * urbanisation	Levitt & Mollentze (1995)
Females >16 years: 146/100 000 Males >16years: 163/100 000	Cancer * genetic predisposition * ↑ intakes of fats (mainly saturated) * ↑ intakes of animal protein * ↑ intakes of nitrates/nitrites * ↓ antioxidant intakes * ↓ beta-carotene intakes * ↓ folate intakes * ↓ fibre intakes * ? resistant starch * ? fatty acids * smcking * alcohol * sun exposure	Sitas, Terblanche & Madhoo (1996); Sitas & Norman (1995)

3.1.4.1 Aim of the dietary guidelines

It was agreed that the overall aim of the FBDGs should be to address the nutrition transition experienced by many South Africans, the consequence of which is the double burden of over- and undernutrition, often occurring within the same household. The proposed South African FBDGs would therefore describe a target diet that South Africans older than 5 years of age (revised to 7 years and older in October 2001) should be aiming towards whether under-, over- or adequately nourished (SA FBDG Work Group 1998).

The mandate of the SA FBDG Work Group was therefore agreed as follows:

- * To develop a single (core) set of guidelines for the promotion of health to healthy South Africans older than 5 years of age (revised to 7 years and older in October 2001).
- * To ensure that the guidelines developed are affordable, practical, attuned to food availability, culture-sensitive (encourage the use of traditional foods and eating patterns), positive and non-prescriptive, sustainable, and environmentally friendly.
- * To adapt the finalised guidelines for infants and young children, and persons with special dietary requirements (such as pregnancy, lactation, chronic illness, elderly).
- * To review and revise the guidelines every 5 years or sooner in response to major research findings.

(SA FBDG Work Group 1998).

3.1.4.2 Target groups of the dietary guidelines

The decision to develop separate guidelines for South African infants and young children was based on the fact that South African children have specific nutrition-related public health issues (mainly undernutrition), and children per se, have specific dietary needs for growth and development. An initial age cut-off of older than 5 years of age was therefore agreed upon (SA FBDG Work Group 1998).

However, following the establishment of a sub-committee to investigate the adaption of FBDGs for infants and young children, a proposal was put forward in October 2001 to change the cut-off age from 5 years to 7 years. After much deliberation with the SA FBDG Work Group it was agreed to adjust the age cut-off to 7 years of age and older, for the following reasons:

- * According to regulations set out by the Department of Education, children under 7 years would be preschoolers, and children 7 years and older would be of school-going age (and may be participants in a school feeding scheme).
- * The WHO dietary reference values use the following age cut-offs: 0-6 months, 6-12 months, 1-3 years, 3-5 years, and 5-7 years.

(Paediatric FBDG Sub-Committee 2001).

3.1.4.3 Content of the dietary guidelines

The content of the dietary guidelines, aimed at South Africans older than 5 years, was formulated by the SA FBDG Work Group based on the identified nutrition-related public health concerns and possible implicated dietary and lifestyle factors as cited in the scientific literature. The nutrition-related public health concerns considered a priority for South Africans older than 5 years were obesity, hypertension, hypercholesterolaemia, non-insulin dependent diabetes and cancer (see Table 3.4). Dietary goals and preliminary dietary information were then formulated to address these nutrition-related public health concerns (see Table 3.5).

At the third meeting of the SA FBDG Work Group (09-02-1998), a first draft set of FBDGs was compiled based on associations found between identified nutrition-related public health concerns, dietary consumption patterns and lifestyle factors of South Africans (see Table 3.5). The SA FBDG Work Group could not gain consensus on the following issues:

- (a) to have a separate dairy (calcium) guideline;
- (b) to combine the fat and salt guidelines;
- (c) to include the tea/coffee (caffeine) guideline; and
- (d) if lifestyle advice (alcohol, smoking and stress) should be considered as part of food-based/dietary advice.

(SA FBDG Work Group 1998).

It was therefore agreed to present the first draft set of FBDGs to other nutrition and health professionals for fuller discussion. This took place at the biennial Nutrition Congress of the Nutrition Society of South Africa (NSSA) and the Association for Dietetics in South Africa (ADSA), in May 1998. The objective of the workshop was to develop a maximum of ten (10) food-based dietary guidelines based on, and with the aim of improving, current dietary practices and prevailing nutrition-related public health issues of South Africans. The workshop was attended by 67 delegates (SA FBDG Work Group 1998).

Nutrition professionals debated each proposed guideline of the first draft set in terms of:

- Health relevance – Do the FBDGs address existing/potential nutrition-related public health issues facing South Africans?
- Scientific evidence – Are the FBDGs supported by credible scientific evidence?
- Practical application – Are the FBDGs achievable, sustainable, affordable, culturally sensitive and environmentally sensitive?
- Comprehension – Are the FBDGs understandable and able to be translated in a meaningful manner?
- Prudence (moderation) and adequacy – Do the FBDGs, as a set, address the nutrition transition of over- and under-nutrition?

(SA FBDG Work Group 1998).

Table 3.5 Dietary goals and rationale, preliminary dietary information and eventual first draft of food-based dietary guidelines (FBDGs) to address nutrition-related health concerns of South Africans older than 5 years of age (after SA FBDG Work Group 1998)

DIETARY GOALS & RATIONALE	PRELIMINARY DIETARY INFORMATION	FIRST DRAFT SET OF FBDGs
<p>VARIETY No single food or meal will meet all the requirements for essential and, as yet, unidentified nutrients.</p>	<p><i>Enjoy a variety of foods from what you have available and what you can afford.</i></p>	<p>Enjoy as wide a variety of foods as is affordable and locally available.</p>
<p>MEALS Blood glucose levels and appetite are balanced best through eating a minimum of three meals a day; breakfast being the most important. An increase in the number of meals eaten can increase the variety of the diet.</p>	<p><i>Eating two meals a day is good – eating three meals a day is better.</i></p>	<p>It is best to eat smaller meals more often than one big meal each day, but have no more than 6 food intakes a day for the sake of your teeth, and make sure that you eat food in the morning.</p>
<p>SNACKS While in-between meal eating can assist in maintaining blood glucose levels, it can also result in a high intake of fats, salt, sugar and total energy depending on food selection. Frequent contact of foods with the teeth can also promote the development of tooth decay.</p>	<p><i>To prevent obesity, eat snack foods that are low in fat.</i></p>	
<p>BODY WEIGHT/EXERCISE Energy balance and body weight management is to be encouraged through food choice and exercise. Rather than the setting of an upper limit on energy intake; advise to exercise up to 30 minutes a day and more on most days of the week.</p>	<p><i>Achieve and maintain a healthy weight by enjoying regular physical activity and healthy eating.</i></p>	<p>Enjoy eating enough food and doing regular (daily) physical activity to achieve and maintain a healthy body weight.</p>
<p>ENERGY Diet to provide energy consistent with age, gender, activity and physiological requirements, and the maintenance of a healthy body weight.</p>	<p><i>Eat enough food to meet your energy needs.</i></p>	

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Continuation of Table 3.5 Dietary goals and rationale, preliminary dietary information and eventual first draft of food-based dietary guidelines (FBDGs) to address nutrition-related health concerns of South Africans older than 5 years of age (after SA FBDG Work Group 1998)

DIETARY GOALS & RATIONALE	PRELIMINARY DIETARY INFORMATION	FIRST DRAFT SET OF FBDGs
<p>CARBOHYDRATE 50-60% total daily energy; emphasise unprocessed to achieve adequate intakes of fibre (20-30g/day), vitamins and minerals (vitamins C and B6, beta-carotene, folate, iron, potassium).</p>	<p><i>Include high fibre breads, cereals and grain products in every meal.</i></p> <p><i>Eat a variety of fruits and vegetables every day, especially those that are dark green, dark orange or yellow.</i></p> <p><i>When cooking vegetables or fruit, cook for a short time in very little water so that the goodness is not destroyed.</i></p>	<p>Make starchy foods the basis of most meals – maize, bread, rice, sorghum, pasta or potatoes. Some of these foods should be minimally processed.</p> <p>Eat plenty of raw or lightly cooked vegetables and fruits every day in meals and for snacks – dark green, yellow and dark orange ones are good choices.</p>
<p>PROTEIN 10-20% total daily energy (meat-based diet 8-10%; plant-based diet 10-12%); vitamins A and B12, iron, zinc, calcium.</p>	<p><i>Eat legumes (dry beans, lentils, split peas) at least twice a week.</i></p> <p><i>Eat small portions of lean meat, fish and chicken.</i></p>	<p>Eat more legumes – dry beans, peas, lentils, soya products and nuts.</p> <p>Foods from animals can be eaten every day – milk and milk products, fish, chicken, eggs and lean meat.</p>
<p>FAT <35% total daily energy for children, active adults, non-obese adults, elderly experiencing weight/muscle mass loss. <30% total daily energy for all, excluding above. * Trans fatty acids – limit * Saturated fatty acids - <10% total daily energy (TE) * Poly-unsaturated fatty acids - <10% TE * Mono-unsaturated fatty acids - <10% TE * Cholesterol - <300mg/day</p>	<p><i>Eat at least one low fat dairy product every day.</i></p> <p><i>Eat foods and meals made with little or no fat.</i></p>	<p>Eat low fat meals and foods, and use fat sparingly when preparing foods.</p>
<p>SODIUM <3g sodium/day <5g salt/day</p>	<p><i>Eat foods and meals made with little or no salt.</i></p>	<p>Eat foods and meals made with little or no salt.</p>

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Continuation of Table 3.5 Dietary goals and rationale, preliminary dietary information and eventual first draft of food-based dietary guidelines (FBDGs) to address nutrition-related health concerns of South Africans older than 5 years of age (after SA FBDG Work Group 1998)

DIETARY GOALS & RATIONALE	PRELIMINARY DIETARY INFORMATION	FIRST DRAFT SET OF FBDGs
WATER At least 1 litre/day.	<i>Drink clean, safe water to quench your thirst.</i>	Drink lots of clean, safe water to quench your thirst.
ALCOHOL Males: <22units/week; females: <12units/week; pregnancy/lactation: 0units/week.	<i>If you drink alcohol, keep intake to less than 2 alcoholic beverages every second day.</i> <i>Drinking alcohol whilst pregnant or breastfeeding is not advisable.</i>	If you drink alcohol, drink sensibly.
TEA/COFFEE Concerns regarding high caffeine intakes.	<i>If you drink regular tea and/or coffee, keep intake to 4-5 cups or less per day.</i>	If you drink tea and/or coffee, keep intake to 4-5 cups or less per day.
SMOKING Concerns related to incidence of cancer and heart disease.	<i>Smoking is addictive and harmful to your health - it is never too late to give it up.</i>	Smoking is addictive and harmful to your health – it is never too late to give up.
STRESS Concerns related to incidence of heart disease.	<i>Control stress. Make time to relax. Laugh a little, smile a lot.</i>	Control stress – make time to relax.

Workshop participants queried the ability of the general public to correctly interpret some of the terminology and concepts used, namely variety, frequently, meals, snacks, healthy body weight, starchy foods, legumes, foods from animals. Questions also arose regarding how consumers categorise dairy products (together or separate from meat products), whether they perceive alcohol as a factor influencing dietary intake, and if their water supply is safe and clean. To keep the number of guidelines to a minimum, workshop participants agreed to exclude the guidelines regarding tea and coffee (caffeine), smoking and stress on the basis that:

- caffeine intake was not a priority in terms of the identified nutrition-related public health problems
 - the Department of Health was already adequately addressing the smoking issue with its anti-smoking campaign
 - stress referred to lifestyle, not dietary, change
- (SA FBDG Work Group 1998).

A second draft set of FBDG resulted from the workshop (see Table 3.6), and was reviewed at a fourth meeting of the SA FBDG Work Group (01-08-1998). In keeping with the FAO/WHO criteria for FBDGs, namely, action-oriented, positive, simple guidelines, it was agreed that the final set of FBDGs should preferably comprise no more than ten guidelines which are positive and concisely written, and which are accompanied by explanatory consumer text. A third draft of eleven preliminary FBDGs resulted from these deliberations (see Table 3.6) (SA FBDG Work Group 1998; WHO 1998).

According to the recommended FAO/WHO FBDGs development process the next step, following the formulation of a draft set of FBDGs, is the preparation of technical support papers for each FBDG statement. At the fifth meeting of the SA FBDG Work Group (22/01/1999), it was agreed that the third draft set of FBDGs should first be subjected to consumer testing and, once refined, technical support papers could be prepared. This was regarded as a time saving step. It was also agreed that sub-committees should be formed to address the adaption of the proposed FBDGs for other priority groups (HIV, pregnancy, breastfeeding, paediatrics, elderly, chronic illness) (SA FBDG Work Group 1999).

To increase the credibility of the FBDGs testing phase, it was decided that consumer testing should take the form of formal research studies. It was also agreed that such studies should be conducted in as many of the nine provinces of South Africa as resources would permit so as to access the different ethnic groups within the country (SA FBDG Work Group 1999).

Results of the consumer testing studies from the KwaZulu Natal and Western Cape provinces were reported at the sixth meeting of the SA FBDG Work Group (18-01-2000). Results from the consumer testing produced similar findings, namely, that consumers:

- considered fruit an expensive commodity compared to vegetables
- were familiar with the term “legumes”, but regarded it as uncommon
- misunderstood the phrase “foods from animals”
- understood the word “fat” to include cooking fats, but not fatty foods and spreads
- were confused by the guideline “Eat healthier snacks”

(Love, Maunder, Green, Ross, Smale-Lovely & Charlton 2001).

Table 3.6 Draft sets of food-based dietary guidelines for South Africans (>5 years) (after SA FBDG Work Group 1999; 1998)

First Draft Set of Food-Based Dietary Guidelines for South Africans (>5years)	Second Draft Set of Food-Based Dietary Guidelines for South Africans (>5 years)	Third Draft Set of Food-Based Dietary Guidelines for South Africans (>5 years)
Enjoy as wide a variety of foods as is affordable and locally available.	Enjoy as wide a variety of foods as is affordable and locally available.	Enjoy a variety of foods.
It is best to eat smaller meals more often than one big meal each day, but have no more than 6 food intakes a day for the sake of your teeth, and make sure that you eat food in the morning.	Eat meals more often and eat in the morning.	Eat healthier snacks.
Enjoy eating enough food and doing regular (daily) physical activity to achieve and maintain a healthy body weight.	Eat enough food for physical activity and to maintain a health body weight.	Be active!
Make starchy foods the basis of most meals – maize, bread, rice, sorghum, pasta or potatoes. Some of these foods should be minimally processed.	Make starchy foods the basis of most meals.	Make starchy foods the basis of most meals.
Eat plenty of raw or lightly cooked vegetables and fruits every day in meals and for snacks – dark green, yellow and dark orange ones are good choices.	Eat vegetables and fruits as frequently as possible/at least 5 a day.	Eat plenty of fruits and vegetables every day.
Eat more legumes – dry beans, peas, lentils, soya products and nuts.	Eat legumes regularly/as frequently as possible.	Eat legumes regularly.
Foods from animals can be eaten every day – milk and milk products, fish, chicken, eggs and lean meat.	Foods from animals can be eaten every day.	Foods from animals can be eaten every day.
Eat low fat meals and foods, and use fat sparingly when preparing foods.	Eat low fat meals and foods, and use fat sparingly when preparing foods.	Use fat sparingly.
Eat foods and meals made with little or no salt.	Eat foods and meals made with little or no salt.	Use salt sparingly.
Drink lots of clean, safe water to quench your thirst.	Drink lots of clean, safe water to quench your thirst.	Drink lots of clean, safe water.
If you drink alcohol, drink sensibly.	If you drink alcohol, drink sensibly.	If you drink alcohol, drink sensibly.
If you drink tea and/or coffee, keep intake to 4-5 cups or less per day.		
Smoking is addictive and harmful to your health – it is never too late to give up.		
Control stress – make time to relax.		

Based on these findings and to reflect consumer perceptions and understanding, changes were proposed to specific FBDG statements, namely, that:

- “vegetables” should be listed before “fruits” as fruits are considered more expensive and less frequently available
- “legumes” should be replaced with actual food examples i.e.: “dry beans, peas, lentils and soya”
- “foods from animals” should be replaced with actual food examples i.e.: “meat, fish, chicken, milk or eggs”
- “use fat” sparingly should be replaced with “eat fats” sparingly, as the former implied only fat used for cooking (oil, Holsum), and excluded fats in the form of spreads (margarine, butter) and fatty foods
- the “Eat healthier snacks” guideline should be omitted, but with information on wise snacking to be included in the explanatory text.

These changes resulted in the formulation of a fourth draft set of FBDGs (see Table 3.7). (SA FBDG Work Group 2000).

Table 3.7 Fourth draft set of food-based dietary guidelines for South Africans (>5 years) (after SA FBDG Work Group 2000)

1. Enjoy a variety of foods.
2. Be active!
3. Make starchy foods the basis of most meals.
4. Eat plenty of vegetables and fruits every day.
5. Eat dry beans, peas, lentils and soya regularly.
6. Meat, fish, chicken, milk or eggs can be eaten every day.
7. Eat fats sparingly.
8. Use salt sparingly.
9. Drink lots of clean, safe water.
10. If you drink alcohol, drink sensibly.

The fourth draft set of FBDGs (as listed in Table 3.7) and consumer testing results from KwaZulu Natal, Western Cape and Northern Province were presented at the biennial Nutrition Congress in August 2000, where discussions took place regarding the South African FBDGs development process. Comments from the Nutrition Congress were considered at the seventh meeting of the SA FBDG Work Group (18-10-2000). It was agreed that, once approved as national dietary guidelines, supporting documentation should be made available regarding the FBDGs, and that this documentation should be structured on three levels:

- **consumers** – via pamphlets that provide practical information on how to apply the FBDGs, taking into consideration the diverse cultural eating habits that exist and levels of literacy
 - **health care workers/nutrition educators** – via a training manual that provides justification for each of the FBDGs and practical instruction on how to use the FBDGs for nutrition education
 - **health professionals** - via published technical support papers that provide scientific evidence to justify the existence of each of the FBDGs
- (SA FBDG Work Group 2001).

A draft copy of the explanatory consumer text is attached as Appendix 3. A draft copy of the health care worker training manual has also been compiled (but is not included in this document due to its length). The technical support papers providing scientific evidence for each of the proposed FBDGs have been published in the South African Journal of Clinical Nutrition, September 2001:14(3): supplement S1-S80. The scientific evidence for inclusion of each of the proposed South African FBDGs is summarised in Table 3.8, and is further validated when reading the scientific evidence of similar dietary guidelines for other countries (DGAC 2000; NHMRC 1998).

Following the publication of the technical support papers, an editorial comment was made that “*one should consider making the guidelines more specific and self-explanatory*”, for example, that the consumption of unrefined starchy foods should be encouraged. The editorial comment also questioned the ability of one set of guidelines to address the co-existence of under- and overnutrition in South Africa (Labadarios & Steyn 2001).

As explained in the SA FBDG Work Group’s response to the editorial, the proposed FBDGs are an attempt at providing consistent nutrition messages in a non-segregating manner, aimed at those who are under-, over- or adequately nourished. In order to achieve this, each FBDG conveys a dietary principle in a succinct manner, using positive, broad terminology. Hence the consistent recommendation that all FBDGs should be accompanied by an explanatory consumer text which would elaborate on specific activities and strategies to apply the FBDGs (Love 2001).

An additional outcome of the seventh meeting of the SA FBDG Work Group (18-10-2000) was that, once the technical support papers had been accepted for publication, the proposed FBDGs should be presented to the Department of Health for national approval and adoption (SA FBDG Work Group 2001).

The proposed FBDGs and technical support papers were presented to the Health Management Committee (HMC) meeting on 11 June 2001. The outcome of this meeting was that “*the Health Management Committee noted, with appreciation, the work done in drafting the guidelines, but that the following needed consideration*”:

- * an explanation of the terms “sparingly” and “sensibly” (considered too vague)
 - * an explanation of the “meats” guideline (considered too open-ended)
 - * the inclusion of a guideline on “sugar” (to address dental caries)
- (DOH/FBDG Workshop 2001)

Table 3.8 Summary of Technical Support Papers - Published for each of the South African Food-Based Dietary Guidelines
(SAJCN 2001:14(3): supplement S1-S80)

FOOD-BASED DIETARY GUIDELINE	SUMMARY OF PUBLISHED ARTICLE
Enjoy a variety of foods	No single nutrient is most important, and no single food supplies all the nutrients the body needs. Eating a variety of foods therefore makes it easier to obtain all the nutrients needed. Nutritionally, there are also no "bad" foods. What is important is how different foods are eaten to make a healthy diet. People should therefore strive to eat as wide a variety of foods as is affordable and acceptable. When food is scarce or difficult to obtain due to poverty or inaccessibility, it is important to make the best possible food choices from what is available. Locally produced and traditional foods should not be forgotten as they can make a valuable contribution to a varied diet. It is suggested that prevailing low micronutrient intakes, low energy intakes as well as overconsumption of food and resultant chronic diseases of lifestyle will be addressed by this guideline. The challenge is to ensure that these goals are achieved within the context of high household food insecurity and increasing urbanisation (Maunder, Matji & Hlatshwayo-Molea 2001).
Be active!	Implementing this guideline and the other nine that concern diet will assist in the achievement and maintenance of a healthy body weight, thereby preventing obesity and associated chronic diseases of lifestyle. Moderate exercise is recommended (40-60 minutes, 3-5 times a week) (Lambert, Bohlmann & Kolbe-Alexander 2001).
Make starchy foods the basis of most meals.	Starchy foods are good sources of carbohydrate. Minimally processed and fortified starchy foods are also good sources of fibre, vitamins (especially vitamin-B), and minerals. Starchy foods are also low in fats, depending on how they are prepared and what is added to them when they are eaten. Starchy foods are often economical, widely available foods, and can therefore contribute significant amounts of nutrients to the diet, particularly when unrefined varieties are chosen. Starchy foods should form the central part of each mixed meal and be eaten in larger amounts than the other foods at the meal. An increased carbohydrate (starchy food) intake can result in a decreased fat intake. Although starchy foods are an important part of the diet, they cannot provide all the nutrients needed by the body. For a healthy diet, other foods need to be added to starchy foods, such as vegetables, fruits, dry beans, soya, meat, fish, chicken, eggs, milk or milk products (Vorster & Nell 2001).
Eat plenty of vegetables and fruits every day.	Vegetables and fruits provide a variety of different vitamins, such as folate, vitamin C and beta-carotene. When eaten with their skins/peels on, fruits and vegetables also provide fibre. Vegetables and fruits should be eaten as often as possible. Latest recommendations suggest that at least 5 portions of vegetables or fruits be eaten everyday. If fruit is expensive, more vegetables can be eaten. Edible wild fruits and vegetables can also be eaten. Vegetable gardens and fruit trees can also be planted at home to provide fresh vegetables and fruit for the family and even for sale. National and regional nutrition studies have shown that South Africans are not eating at least 5 portions of vegetables or fruit everyday. Affordability (lack of household income) is given as the main barrier, as well as lack of availability (especially fruits) and resistance from the children and, in some cases, the men in the household (Love & Sayed 2001).

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Continuation of Table 3.8 Summary of Technical Support Papers - Published for each of the South African Food-Based Dietary Guidelines (SAJCN 2001:14(3): supplement S1-S80)

FOOD-BASED DIETARY GUIDELINE	SUMMARY OF PUBLISHED ARTICLE
Eat dry beans, peas, lentils and soya regularly.	These foods (commonly referred to as legumes or plant proteins) are good sources of protein. They also contribute carbohydrate, vitamins and fibre. Most are low in fat and all are cholesterol-free. Their 'incomplete' amino acid content can be corrected easily by eating them with starchy foods, or with meat, fish, chicken, eggs or milk. Dry beans, peas, lentils and soya are generally inexpensive, they can be eaten everyday, and should be eaten at least two to three times a week. When these foods are unfamiliar, it may be difficult to persuade people to eat them regularly (at least once a week). But there are delicious and novel ways of incorporating these foods into meals. Raw dry beans take a while to cook, and people may be hesitant to include them in their diets when cooking fuel is expensive (such as electricity, paraffin and gas) or scarce (such as wood). To overcome this barrier, raw dry beans can be soaked in water overnight to soften them before cooking and a "Hay Box" can also be used to cook them. Including legumes as part of a healthy diet helps to promote proper bowel function, and to reduce the risk for high blood cholesterol (heart disease), diabetes mellitus, cancer and osteoporosis (Venter & Van Eyssen 2001).
Meat, fish, chicken, milk or eggs can be eaten every day.	Animal-derived foods are good sources of protein. They also contain saturated fats (a concentrated energy source) and cholesterol. Dairy products and the soft edible bones of fish (pilchards, sardines) are good sources of calcium, which is needed for strong bones and teeth, blood clotting and wound healing. Chicken, fish, meat and egg yolks are good sources of iron, essential for the prevention of anaemia. Vitamin B12, also needed for the prevention of anaemia, is only found in animal foods, namely, chicken, fish, meat, milk and eggs. Where animal-derived foods are not eaten for cost, personal or religious reasons, it is possible to eat a healthy diet by substituting with dry beans, split peas, lentils or soya products. Because animal-derived foods are good sources of fats and cholesterol, smaller portions and lower fat or lean varieties of these foods should be eaten when trying to promote health and to prevent obesity, heart disease, stroke and cancer. National and regional nutrition studies indicate that many South Africans are eating sufficient, and often excess, amounts of meat, chicken and eggs. Fish and milk consumption, however, tends to be low. Culture and cost are the main reasons given for this (Scholtz, Vorster, Matshego & Vorster 2001).
Eat fats sparingly.	Fats and foods with fats are very concentrated sources of energy and help in the absorption of fat-soluble vitamins A, D, E and K, as well as beta-carotene. These foods also supply essential fatty acids such as linoleic, arachidonic and linolenic acids. Some fat is therefore needed in the daily diet. However, eating too much fat (especially foods rich in saturated fats and cholesterol) can result in the development of obesity, heart disease and certain cancers. To prevent these diseases it is important to focus on reducing total fat and saturated fat consumption (Wolmarans & Oosthuizen 2001)

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Continuation of Table 3.8 Summary of Technical Support Papers - Published for each of the South African Food-Based Dietary Guidelines (SAJCN 2001:14(3): supplement S1-S80)

FOOD-BASED DIETARY GUIDELINE	SUMMARY OF PUBLISHED ARTICLE
Use salt sparingly.	Salt is commonly used to add flavour to foods, and comes in the form of table salt, spices, soup and gravy powders, stock cubes and salt-based seasonings. Many people use excessive amounts of these salty seasonings when cooking or eating. A high intake of salt (sodium) has been linked to high blood pressure and increases the risk for heart disease, kidney disease and stroke. A high salt intake also increases the amount of calcium excreted in the urine. Loss of too much calcium from the bone can increase the risk for osteoporosis and bone fractures. In 1995, the South African National Department of Health passed the "Salt Iodization Regulation" as a means to eliminate iodine deficiency. All people should therefore be encouraged to use iodized salt rather than coarse salt that is not iodized, however, any type of salt should be used sparingly (Charlton & Jooste 2001)
Drink lots of clean, safe water.	The water (homeostatic) balance of the human body must be maintained if it is to survive. The body has no "water storage compartment" and therefore needs to replace any lost water continuously. Adults need 2-2½ litres daily (10 glasses/day) and children about 1½-2 litres daily (7 glasses/day). This water intake should be increased during times of excessive water loss e.g.: diarrhoea, vomiting, haemorrhaging, or states of profuse perspiration (exercise, high external temperatures, illness). Drinking fluoridated water also has the added benefit of protecting teeth from dental caries. South Africa has recently passed legislation for the fluoridation of municipal water, which will assist in the promotion of good oral hygiene. In South Africa, where many people obtain their water from streams, rivers and dams that may be contaminated, it is essential that people are educated about making their water supply safe and clean before using it for drinking or cooking (Bourne & Seager 2001).
If you drink alcohol, drink sensibly.	1998 statistics show that just under 50% of South African males and 20% of South African females, 15 years and older, consume alcohol. Very high levels of risky drinking occur, particularly over weekends. Excessive alcohol consumption has been linked to an increased risk for cancer, heart disease, high blood pressure, stroke, dementia, liver disease (cirrhosis), and certain birth defects during pregnancy (e.g.: Foetal Alcohol Syndrome). Alcohol abuse also plays a major role in cases of child abuse, rape, assault, murder, suicide and road deaths. Chronic excessive consumption should be avoided given its adverse effects physically and socially. People who should not drink alcohol include children, pregnant and breastfeeding women, people who plan to drive, people taking medications that may interact with alcohol, and people who are unable to restrict their drinking to sensible levels (Van Heerden & Parry 2001).

To discuss these issues, a 2-day workshop was held on 21-22 August 2001 with representatives of the SA FBDG Work Group and the Department of Health. The conclusions of the 2-day workshop were positive, with full support of the FBDGs. Issues raised by the HMC meeting were resolved as follows:

- * the terms “sparingly” and “sensibly” were regarded by all as adequately tested and understood by consumers, and that additional quantifiable information would be provided in the explanatory consumer text
- * the “meats” guideline would be altered to read “Chicken, fish, milk, meat or eggs could be eaten daily” to de-emphasise the role of red meat, and to reaffirm that this guideline does not have to be implemented on each consecutive day
- * the issue of dental caries would be addressed through the formulation of a “sugar” guideline (regarding this, the Department of Health requested the compilation of an independent report on the role of sugar in respect to healthy diets in South African adults and children).

(DOH/FBDG Workshop 2001)

Following the 2-day workshop, the SA FBDG Work Group met (01-10-2001) to discuss a potential “sugar” guideline that would meet the criteria for FBDGs. Two proposals were submitted to the Department of Health for comment from national and provincial offices, namely:

- * If you have sugar and sugar containing foods and drinks, have them only occasionally
- * If you consume sugar and sugar containing foods and drinks, do so sensibly

(SA FBDG Work Group 2001).

Feedback from the Department of Health highlighted the following issues:

- * consensus could not be gained regarding the use of “sparingly”, “occasionally” or “sensibly”
- * it was recommended that the word “have” replace “consume” for better understanding
- * the guideline should focus on “sugar and sugar containing foods and drinks (products)”

In light of this, the SA FBDG Work Group reformulated the proposed “sugar” FBDGs as follows:

- * If you have sugar and sugar containing foods and drinks, do so in moderation
- * Use sugar in moderation

(SA FBDG Work Group 2001).

On the request of the Department of Health, a representative from the World Health Organisation (WHO) met with the Chairman of the SA FBDG Work Group to discuss the formulation of the proposed “sugar” FBDG. At this meeting (22-01-2002), it was agreed that the WHO Expert Report on Chronic Diseases (being compiled at the time of the meeting) should be used upon which to base decisions (Pietinen 2002).

A draft copy of the WHO Expert report on Chronic Disease was released in April 2002, following which the Department of Health approached a nutrition expert and oral health expert to co-author an independent report on the role of sugar in respect to healthy diets in South African adults and children. The authors of the report concluded that the proposed “sugar” FBDG should be worded as follows: “Eat food and drinks containing sugar sparingly and not between meals” (Steyn & Myburgh 2002).

Due to the lack of consensus regarding the proposed “sugar” FBDGs, it was agreed that all proposed statements would be subjected to consumer testing. These statements were those provided by members of the DOH/FBDG workshop, the SA FBDG Work Group, the Paediatric FBDG Sub-Committee, national and provincial offices of the Department of Health (Directorate Nutrition, Directorate Oral Health and Directorate Chronic Diseases), and the authors of the independent report on sugar compiled on behalf of the Department of Health (SA FBDG Work Group 2002).

The proposed “sugar” FBDGs were:

- Use sugar and foods with added sugar sparingly/in moderation (DOH/FBDG workshop)
 - Use sugar and sweetened products sparingly/in moderation (DOH/FBDG workshop)
 - Use sugar and sugar containing products sparingly/in moderation (DOH/FBDG workshop)
 - Eat food containing added sugar sparingly/in moderation (DOH/FBDG workshop)
 - Eat sweet sticky snacks sparingly/occasionally (DOH/FBDG workshop)
 - Eat sugar-containing foods only at mealtimes (Directorate: Oral Health)
 - Use sugar in moderation (SA FBDG Work Group)
 - Use sugars in moderation (SA FBDG Work Group)
 - Use sugar and sugar containing foods and drinks in moderation (SA FBDG Work Group)
 - Use sugar and foods and drinks containing added sugar in moderation (SA FBDG Work Group)
 - Go easy on sugar and sugary foods and drinks (SA FBDG Work Group)
 - If you have sweet treats and drinks, have small amounts with meals (Paed FBDG committee)
 - Eat food and drinks containing sugar sparingly and not between meals (DOH independent report)
- (SA FBDG Work Group 2002).

Consumer testing was conducted in KwaZulu Natal (English and Zulu), the Western Cape (Afrikaans) and the Eastern Cape (Xhosa). Findings were presented to the SA FBDG Work Group on 4 October 2002 where it was agreed that the “sugar” FBDG to be submitted to Department of Health for national approval and adoption would be worded “Use sugar and sugar-containing foods and drinks in moderation” (SA FBDG Work Group 2002).

On 2 December 2002, the Nutrition Directorate, on behalf of the SA FBDG Work Group, made a re-submission of the FBDGs to the HMC meeting. The meeting recommended the guideline on sugar as suggested by the authors of the independent report, namely: “Eat food and drinks containing sugar sparingly and not between meals”, and accepted the changes suggested for the “meats” FBDG, namely: “Chicken, fish, milk, meat or eggs could be eaten daily”. The meeting therefore recommended the eleven FBDGs be presented at the Public Health Restructuring Committee meeting for national approval (Behr 2002).

Following national approval and adoption of the guidelines, it is envisaged that a national awareness campaign will be implemented for the dissemination of the FBDGs and supporting documents to health professionals, nutrition educators/health care workers and consumers.

For the management of chronic diseases of lifestyle and HIV/AIDS, it is also crucial that the FBDGs be appropriately modified to meet the specific dietary needs of these people. Such guidelines should be compatible with the FBDGs for healthy people so that, within a household, nutrition messages are more consistent and easier for the household to follow.

The “South African National Guidelines on Nutrition for People Living With TB, HIV/AIDS and other chronic debilitating conditions” was officially released in February 2002. These guidelines were developed by an independent group on behalf of the Department of Health, but in consultation with the SA FBDG Work Group. The HIV/AIDS nutrition guidelines are therefore compatible with the proposed FBDGs (DOH 2001).

In KwaZulu Natal, existing diet sheets provided to hospital and clinic patients have been adapted for diabetes mellitus, heart disease and general healthy eating so as to be more in line with the proposed FBDGs (see Appendix 4). This work has been done by the KwaZulu Natal Clinical Dietitians Working Group, in consultation with the SA FBDG Work Group.

3.2 A CRITICAL ANALYSIS OF THE SOUTH AFRICAN FBDGs DEVELOPMENT PROCESS

The proposed South African FBDGs have been developed according to the recommended FAO/WHO 10-step process for developing FBDGs. The critical analysis of the South African FBDGs development process therefore examines each of these 10-steps in terms of their usefulness in developing the proposed South African FBDGs.

3.2.1 Formation of a working group, comprising representatives of agriculture, health, education, food science and nutritional science sectors of academia, consumer groups and other pertinent non-governmental organisations, food industry, communications and anthropology

The mandate of the SA FBDG Work Group is as follows:

- * To develop a core set of guidelines for the promotion of health to healthy South Africans older than 5 years of age (revised to 7 years and older in October 2001).
- * To ensure that the guidelines developed are affordable, practical, attuned to food availability, culture-sensitive (encourage the use of traditional foods and eating patterns), positive and non-prescriptive, sustainable, and environmentally friendly.
- * To adapt the finalised guidelines for infants and young children, and persons with special dietary requirements (such as pregnancy, lactation, chronic illness, elderly).
- * To review and revise the guidelines every 5 years or sooner in response to major research findings.

(SA FBDG Work Group 1998).

The SA FBDG Work Group can therefore be regarded as a technical working group, providing expertise and input in to the process of developing South African FBDGs. The advertisement placed in the local peer-reviewed journal for volunteers to serve on the SA FBDG Work Group elicited only 7 responses. It was therefore agreed that a concerted effort should be made to identify and invite representatives from as many of the areas as recommended by the FAO/WHO FBDGs development process. A number of organisations and individuals were approached and, to date, the SA FBDG Work Group consists of an interdisciplinary and inter-sectorial group of twelve members, with representation from:

- Department of Health, Nutrition Directorate
- United Nations Children's Fund (UNICEF)
- academia (University of Cape Town, University of Natal, Potchefstroom University)
- agricultural producer organisations (Dry Bean, Red Meat)
- food industry (South African Sugar Association, Unifoods)
- professional associations (Association for Dietetics, Nutrition Society)
- Medical Research Council

The SA FBDG Work Group agreed that the working group should elect a chairperson with sufficient commitment and enthusiasm to sustain the project. Due to the relationship of the FBDG project with the researcher's area of study, the SA FBDG Work Group unanimously elected the researcher as chairperson of the SA FBDG Work Group. Being both chairperson and researcher for the FBDG process has meant that the FBDG development process, especially the consumer testing phase, has been subjected to greater scrutiny and consultation than may otherwise have occurred. Collaboration between study supervisors and members of the SA FBDG Work Group has therefore assisted the researcher in maintaining objectivity.

Attempts were made to include the Departments of Agriculture and Education, but due to limited resources representatives were unable to attend meetings. Several agricultural producer organisations were, for various reasons, also unable to attend the meetings. Nutrition-related consumer groups that were approached were the Heart Foundation, Diabetes Association and Cancer Association. Again, due to limited resources representatives were unable to attend meetings. Despite non-attendance at the meetings, communications were kept open with these individuals/organisations so that they could receive feedback on the FBDGs development process and provide input if desired.

Whilst representation was achieved to a large extent, the nature of a working group comprised of (unpaid) volunteers naturally tends to hinder continuous attendance of some members at certain times, and possibly limited the attendance of potential participants. The SA FBDG Work Group overcame this difficulty to a large degree by maintaining contact with individuals and organisations unable to attend through the circulation of minutes of the meetings.

The representation of ethnicity and gender on the SA FBDG Work Group could be criticised by some. Of the twelve core members of the SA FBDG Work Group, all members are female and only one member is of African descent (the rest being of Caucasian descent). The nutrition and dietetics professions are largely comprised of females and therefore it was not considered a priority to specifically elicit male membership to the working group. As already mentioned, attendance on the working group was voluntary and the working group therefore could not dictate gender or ethnic

composition of the membership. Furthermore, opinions of health professionals of various ethnicity and gender were included later at several stages of the development process when the proposed FBDGs were subjected to fuller discussions.

With a view towards national approval and adoption, it is apparent that a key role player within the SA FBDG Work Group is the representative from the National Department of Health. It was unfortunate that this representative changed three times in the course of the first few meetings, which disrupted continuity and led to certain misunderstandings about the role of the Department of Health in the FBDGs development process. A vital misunderstanding was that the representative from National Department of Health would provide regular feedback on the process to other health sectors of the national office, as well as to the regional and provincial health and nutrition offices. This misunderstanding became apparent following the HMC meeting, where it was clear that members of this committee (representing all health sectors) were not sufficiently sensitised to the FBDGs process.

Considering the outcome of the presentation made to the HMC meeting regarding national approval and adoption (namely, the need to develop a “sugar” FBDG), it is apparent that all government health divisions (nutrition, oral health, mother and child, food control/labelling, HIV/AIDS, geriatrics, chronic diseases) should either be represented on the working group or at least be provided with continuous feedback from the Department of Health representative. This would assist in prioritising identified nutrition-related public health concerns and could enhance government ownership of the process. Earlier consultation with the Departments of Agriculture and Education would also have been useful in discussions relating to the potential impact of the FBDGs on agricultural practices and the school curriculum, respectively.

In terms of involvement of representatives from food industry, these individuals comprised dietitians and home economists that served on the working group as potential sponsors but mainly to offer their professional nutrition knowledge and expertise. It is apparent that while the government encourages public-private partnerships, the use of food industry funding is subject to much scrutiny to ensure that the process remains objective. It would appear that the best way in which to achieve such objectivity is to have absolute transparency regarding funding and expenditure, openly acknowledging all sponsors and how the funds are used, as has been done by the SA FBDG Work Group.

A recommendation from WHO following a meeting held on 22-01-2002 with the SA FBDG Chairman and Department of Health representative, is that an authoritative body, such as a National Nutrition Council, be appointed by the Department of Health. The Council is then responsible for appointing a Scientific Committee to make proposals concerning scientific issues, such as dietary guidelines. Such a process is regarded as providing greater representation and adding credibility to the process (Pietinen 2002). The FBDG development process becoming the responsibility of the National Department of Health is an approach that the SA FBDG supports as, in this way, government involvement in and commitment to the project is firmly established.

3.2.2 Collection of data on nutrition-related diseases, food availability and food intake patterns, current practices, subsidies and other governmental policies in the country

At the time of collection of this data, South Africa had not as yet completed its first national food consumption survey. However, numerous ad hoc and regional nutrient studies and a recent meta-analysis of nutrient intake studies conducted in South Africa between 1975 and 1996 were available. A Department of Health representative from the Nutrition Directorate was also able to provide information about subsidies and various health policy documents.

While information on the nutritional status of adult South Africans is limited, available data indicates that their nutritional status is sub-optimal. This is supported by data reported in the South African Annual Health Reviews, which lists obesity and related chronic diseases as priority health concerns.

While the data collected regarding nutritional status, food availability, food intake patterns and current practices, subsidies and other governmental policies in the country was incomplete in some areas, it was sufficient to identify nutrition-related public health concerns and related dietary practices within the country.

3.2.3 Identification, after full discussion, of major nutrition-related health problems for which dietary guidelines could be useful and implemented in the present situation

Although the SA FBDG Work Group compiled the initial first draft set of FBDGs, this set was opened to a wider audience for full discussion in a one-day workshop held at the biennial Nutrition Congress in 1998. This opportunity proved valuable in dealing with conflict areas or lack of consensus, such as having a separate dairy (calcium) guideline; combining the fat and salt guidelines; including the tea/coffee (caffeine) guideline; and if lifestyle advice (alcohol, smoking and stress) should be considered as part of food-based/dietary advice.

The biennial Nutrition Congress is attended predominantly by nutritionists and dietitians, with limited attendance from the broader health community. Additional opportunities for fuller discussion with other members of the health community could therefore have been sought, such as through professional associations and societies.

At the time of conducting this step in the FBDGs development process, the SA FBDG Work Group felt that sufficient data had been collected for the working group to identify priority public health concerns. However, following the outcome of the meeting with the HMC in relation to oral health concerns, it is clear that this step would have benefited from the inclusion of other sectors of the National Department of Health. The issue of whether or not a "sugar" FBDG was warranted could have been finalised prior to any submission to government, thereby possibly hastening the process of approval and adoption.

3.2.4 Formulation of a draft set of FBDG statements

The formulation of the first draft set of FBDGs was based on a comparison of identified public health concerns affecting South Africans and possible implicated dietary and lifestyle factors as mentioned in the scientific literature (see Table 3.4).

At this early stage, the question of oral health did arise as is evident in discussion pertaining to frequency of consumption of snacks and the inclusion of the words “...*but have no more than 6 food intakes a day for the sake of your teeth...*” in the second guideline of the first draft. While oral disease can be associated with considerable pain and cost, the SA FBDG Work Group did not consider it to be a priority public health concern in terms of fatal outcome compared with that of other identified chronic diseases (obesity, diabetes, heart disease, stroke and cancer) (FAO/WHO 1997).

With oral disease being linked more strongly to frequency of intake than quantity consumed, the SA FBDG Work Group regarded dietary information for oral health as being addressed through the proposed snacking guideline “Eat healthier snacks”. Consumer testing of this proposed FBDG, however, showed immense misunderstanding, hence the decision by the SA FBDG Work Group to omit a snacking guideline per se, but to include information about snacking within the planned explanatory consumer material under other relevant FBDGs.

The ordering of the FBDGs was decided by the SA FBDG Work Group based on the following scientific principles:

- Variety of intake supports the concept that no foods are good or bad (hence the introductory statement “Enjoy a variety of foods”)
- The promotion of activity, together with sound dietary information, addresses the issue of energy balance and weight management (hence the second statement “Be active!”)
- Carbohydrate-rich foods (statements pertaining to starchy foods, vegetables, fruits, legumes) appear high on the list, above that of foods with a high fat content (namely, animal derived foods and fats). The message is that a reduction in fat is easier to achieve by increasing carbohydrate intake.

A further suggestion made by members of the nutrition community is that a more practical approach to dealing with the diverse South African population, where both under- and overnutrition coexist, might be to have two sets of dietary guidelines (Labadarios & Steyn 2001). The SA FBDG Work Group considered this option very carefully, but decided that on balance it would be better to have one set of dietary guidelines. Different sets of nutrition messages can imply segregation and can also cause confusion should the individual be exposed to both sets of information (as may happen with migration or urbanisation). The proposal for separate FBDGs for the under- and over-nourished also ignores the evidence that many South Africans are faced with the coexistence of under- and overnutrition within the same household and even in the same person. While it can be argued that other countries, such as India, do make use of more than one set of dietary guidelines, there is unfortunately no data available as to the impact of these different sets of guidelines and whether the use of more than one set is problematic or not (Labadarios & Steyn 2001; Love 2001).

The proposed South African FBDGs are therefore an attempt at providing consistent nutrition messages in a non-segregating manner. They describe a target diet that South Africans (7 years and older) should be aiming towards whether under-, over- or adequately nourished. Their non-quantitative nature allows flexibility for nutrition educators to adapt the messages according to client needs, either to reinforce existing desirable dietary practices or to alter undesirable ones (such as reducing fat intake or increasing carbohydrate intake).

3.2.5 Preparation of background (technical support) papers for each FBDG statement

Background (technical support) papers serve the purpose of providing scientific justification for the existence of each FBDG. The collection of this information began during step 4 of the FBDG development process, namely, when formulating draft FBDGs based on a comparison of identified public health concerns affecting South Africans and possible implicated dietary and lifestyle factors (see Table 3.4).

The SA FBDG Work Group agreed that the third draft set of FBDGs should first be subjected to consumer testing and, once refined, the background (technical support) papers would be written up. This was considered a time saving step, as certain guidelines might need to be modified following consumer testing. Relevant consumer testing results could also be included in the background (technical support) papers, such as justification of particular wording or phrasing used.

Considering the outcomes of the consumer testing and the HMC meeting, the decision to complete this step once the proposed FBDGs were closer to finalisation has proven to be a wise one. This point was verified by the confusion caused with the preparation of the independent report on sugar prior to the formulation of a “sugar” FBDG by the SA FBDG Work Group. This resulted in the authors of the report formulating their own guideline as opposed to providing scientific justification for the “sugar” FBDG eventually agreed upon by the SA FBDG Work Group. In terms of the FAO/WHO recommended criteria for FBDGs, and the mandate of the SA FBDG Work Group, the “sugar” FBDG approved by the HMC meeting, namely, “Eat food and drinks containing sugar sparingly and not between meals”, could be considered contrary to being simple, practical and positive and non-prescriptive.

3.2.6 Testing of the FBDG statements on consumers, and revising where necessary

Using the methodology as described in this thesis, the third draft set of FBDGs has been subjected to extensive consumer testing across all socio-economic spectra within South Africa, namely, rural, informal urban and formal urban dwellers. To date, testing has been conducted in KwaZulu Natal, Western Cape, Northern Province and Gauteng – 4 of the 9 South African Provinces – helping to identify cross-cultural interpretations and to establish appropriate translations (see Table 3.9). Discussions continue with other provinces for consumer testing to be done in other official languages and to retest those FBDGs that have been reworded.

Consumer testing of the proposed FBDGs has been the most important step in the entire development process, as it has provided valuable insights into the acceptability of the proposed FBDGs in terms of culture and language, and whether a single (core) set of guidelines could be used. For South Africa, with such a diversity of cultures and languages, consumer testing has been imperative to ensure that consumer interpretation and understanding of the FBDGs will be as is intended and to enhance application of the FBDGs by consumers in their daily lives. The findings of the consumer testing are discussed further in chapters 6 and 7.

Table 3.9 Translated versions of the third draft set of FBDGs (subjected to consumer testing) (after Love, Maunder, Green, Ross, Smale-Lovely & Charlton 2001; Greyvenstein 2000)

ENGLISH	ZULU	XHOSA	AFRIKAANS	TSWANA
Enjoy a variety of foods.	Thokozela ukudla okwahlukene noma okunhlobonhlobo.	Yitya iintlobo ezahlukeneyo zokutya.	Geniet 'n verskeidenheid kosse.	Ja dijo tsa mefutafuta.
Be active!	Khuthalela ukwelula umzimba.	Sebenza, ushukumise umzimba.	Wees aktief.	Matlhagatlhaga.
Make starchy foods the basis of most meals.	Isitashi akube yisona sisekelo sokundla noma esiningi ngezikhathi zonke.	Yitya ukutya okumhlophe (isitashi) amaxesha onke, umzekelo: iitapile, umngqusho.	Styselkosse moet basis van alle maaltye wees.	Dira dijo tsa seteisele go jewa letsatsi le letsatsi.
Eat plenty of fruits and vegetables everyday.	Yidla izithelo kanye nemifino eminingi ngazo zonke izinsuku.	Yitya iziqhamo nemifuno ntsuku zonke.	Eet baie vrugte en groente elke dag.	Ja maungo le merogo e mentsi letsatsi le letsatsi.
Eat legumes regularly.	Yidla izinhlobonhlobo zikabhontshisi njalo.	Yitya iintlobontlobo zemboty.	Eet peulgroente gereeld.	Ja dinawa, diêrkisi, lensisi le soya gangwe le gape.
Foods from animals can be eaten everyday.	Ukudla okutholakala kwizilwane ezahlukenengakudla zonke izinsuku.	Yitya ukutya okufumaneka ezilwanyaneni okunjengobisi, amaqanda, iinyama njalonjalo yonke imibla.	Kos vanaf diere kan elke dag geëet.	Dijo tse di tswang go diphologolo di ka jewa letsatsi le letsatsi.
Use fat sparingly.	Sebenzisa amafutha kancane.	Sebenzisa amafutha amancinici.	Gebruik vet spaarsamig.	Se dirise mafura thata.
Use salt sparingly.	Sebenzisa usawoti kancane.	Sebenzisa ityiwa kancinana.	Gebruik sout spaarsamig.	Se dirise letswai thata.
Drink lots of clean, safe water.	Phuza ngokwenele amanzi ahlanzekile nangenangozi.	Sela amanzi acocekileyo amaninzi.	Drink baie water wat skoon en veilig is.	Nwaa metsi a a phepa a mantsi.
If you drink alcohol, drink sensibly.	Uma uphuza utshwala, kwenze ngokuhlakanipha.	Ukuba usela utywala, sela ngokuzilinganisela.	As jy alkohol drink, drink matig.	Fa o nwa bojalwa, nwa jo boleaneng ka keletlhoko.
Eat healthier snacks.	Yidla ukudla okuncane noma okuphakathi kwezikhathi; zokudla okunomsoco.	Ukutya okutya phakathi kwezidlo makube kokunempilo.	Eet gesonde peuselkosse.	A o ja dijo snacks tse di itekanetseng.

3.2.7 Finalisation of background (technical support) papers and submission to local and national interest groups (and possibly international advisers) for comment

For the chairperson of the SA FBDG Work Group, this task involved a great deal of liaison between authors, editors and sponsors. The printing of the background (technical support) papers was expensive and sponsorship had to be obtained from reputable sources. Publication of the FBDGs consumer testing results and the FBDGs technical support papers also elicited a response from the editor of the Journal in which these were published, which required a reply from the Chairperson on behalf of the SA FBDG Work Group.

This step in the FBDGs development process is a time-consuming but extremely valuable one as it lends much credibility to the FBDGs process, creates awareness and respect among health professionals, and provides scientific evidence to justify the existence of the final set of FBDGs. These documents also provide the scientific base for making submissions to government for national approval and adoption.

As a result of the strong network of health professionals in South Africa, it was not difficult to find reputable professionals in the field of nutrition to write the background (technical support) papers. However, as is the nature of voluntary work, the representativeness of authors and co-authors may be open to criticism as it may not reflect diversity regarding ethnicity or gender. The choice of authors and co-authors was agreed upon by all members of the SA FBDG Work Group and, as such, were regarded as sufficiently professional, credible and knowledgeable.

The background (technical support) papers were circulated within the SA FBDG Work Group for comment prior to submission to the South African Journal of Clinical Nutrition. Once submitted to the Journal, the papers were then also subjected to the mandatory peer-review process of the Journal, which lends further credibility to the content of these documents. The background (technical support) papers therefore achieved their objective of providing credible scientific justification for the existence of each of the FBDGs.

Eleven background (technical support) papers for the proposed South African FBDGs have been published in the South African Journal of Clinical Nutrition September 2001 Vol. 14 No. 3 (Supplement S1-S80). The introductory paper describes the development process followed and the remaining ten papers deal with each of the ten proposed FBDGs (excluding the “sugar” FBDG that was decided upon later). All members of the Nutrition Society of South Africa and the Association for Dietetics in South Africa have received a copy of the FBDG supplement. Additional copies are also available for purchase through these organisations. Once finalised, the “sugar” FBDG technical support paper will also be published in a local peer-reviewed journal.

3.2.8 National adoption of FBDG statements

The proposed FBDGs and background (technical support) papers were presented to the HMC meeting on 11 June 2001. The main outcomes of this meeting were that the “meats” guideline should be reworded and that a “sugar” guideline should be formulated (DOH/FBDG Workshop 2001).

A re-submission of the FBDGs was made to the HMC meeting on 2 December 2002. The Committee accepted the reworded “meats” guidelines and the “sugar” guideline (as proposed by the authors of the independent report on sugar). The Nutrition Directorate: National Department of Health will make further submissions to another internal committee, resulting in approval and adoption of the FBDGs as national dietary guidelines for South African adults.

As a national set of dietary guidelines, the proposed South African FBDGs will provide consistent nutrition messages in a non-segregating manner, describing a target diet that South Africans (7 years and older) should be aiming towards whether under-, over- or adequately nourished. Their non-quantitative nature will allow flexibility for nutrition educators to adapt the messages according to client needs, either to reinforce existing desirable dietary practices or to alter undesirable ones.

With a view towards national approval and adoption, it is apparent that a key role player within the SA FBDG Work Group is the representative from the National Department of Health. Considering the outcome of the first submission made to the HMC meeting regarding national approval and adoption (namely, the need to develop a “sugar” FBDG), it is apparent that all government health divisions (nutrition, oral health, mother and child, food control/labelling, HIV/AIDS, geriatrics, chronic diseases) should either be represented on the working group or at least be provided with continuous feedback from the Department of Health representative. This would assist in prioritising nutrition-related public health concerns and addressing the needs of the Department of Health prior to submission, which may hasten the approval and adoption process.

This point further supports the recommendation from the World Health Organisation (WHO) that an authoritative body, such as a National Nutrition Council, be appointed by the Department of Health to make proposals concerning scientific issues, such as dietary guidelines (Pietinen 2002).

3.2.9 Dissemination through training of nutrition educators, consumer education materials and programmes, and mass media

Following national approval and adoption of the guidelines, it is envisaged that a national awareness campaign will be planned and implemented for the dissemination of the FBDGs. It is hoped that this campaign can be a joint activity between the National Department of Health, the Association for Dietetics in South Africa (ADSA), and The Nutrition Society of South Africa (NSSA).

Explanatory and teaching materials that are currently in draft form will be finalised and made available to health professionals, nutrition educators/health care workers and consumers. The development of such materials will become the task of a representative working group comprising members of the Department of Health: Nutrition Directorate, and Health Promotion and Communication Directorate; SA FBDG Work Group; ADSA; NSSA; South African Dental Association; and food industry (DOH/FBDG 2001). The formation of such a working group will promote input in terms of dietary differences between cultures, assist in translating of materials, prevent duplication of materials, increase credibility for the process (especially among the public), and create opportunities for public-private partnerships (between government and food industry).

To date, numerous activities (Table 3.10) have been conducted in an attempt to create awareness and disseminate information regarding the FBDGs development process and the proposed South African FBDGs.

3.2.10 Review of the FBDGs as additional scientific evidence becomes available regarding nutrient-health effects, and in accordance to changes in dietary consumption patterns of the population

A vital final step in the FBDGs development process is measuring the impact of the FBDGs. This step is important so that the FBDGs can be reviewed periodically as additional scientific evidence becomes available regarding nutrient-health effects, and in accordance to changes in dietary consumption patterns and nutrition-related public health concerns of the population.

The challenge regarding this final step is the lack of a national food consumption survey representative of all age groups within South Africa from which to obtain baseline data for comparative purposes. To date the country has only conducted a survey among 0-9year olds. Representative surveys (especially amongst adults) are imperative to provide baseline data against which to evaluate the impact of the FBDGs on food consumption patterns.

The SA FBDG Work Group has recommended that this final step in the FBDG development process become the responsibility of the National Department of Health: Nutrition Directorate. It is envisaged that this function can be done via the various tertiary training institutions (universities, technikons, colleges) throughout the country in much the same manner as was done when conducting the national food consumption survey. Ownership, credibility and awareness of the FBDGs process are also broadened in this way.

Table 3.10 Dissemination of FBDG-related information

ACTIVITY	DESCRIPTION
Brochure	Entitled: "Food-Based Dietary Guidelines – Information for Health Professionals" Written by the researcher in 1999 explaining the FBDGs development process to health professionals. The SA FBDG Work Group reviewed the contents of this brochure and sponsorship was obtained from the South African Sugar Association.
Nutrition Education Tools Workshop	Sponsored by the South African Sugar Association, and co-ordinated and co-presented by the researcher in Gauteng in February 2000. The aim of the workshop was to disseminate the use of the proposed FBDGs for nutrition education. Workshop participants included national and provincial representatives of the Department of Health: Nutrition Directorate, the Department of Agriculture, and numerous nutrition training institutions (universities, technikons and nursing colleges).
Adaption of clinical diet sheets	Within the KwaZulu Natal province, the researcher has worked closely with the Clinical Dietitians Working Group (comprised of clinical dietitians representing the various hospitals throughout the province) so that existing provincial diet sheets (which are largely nutrient-based and feature lists of foods "allowed" and "to be avoided") can be adapted to complement the proposed FBDGs (see Appendix 4).
Journal publications	Results of consumer testing studies in KwaZulu Natal and the Western Cape. <i>"South African Food-Based Dietary Guidelines: Testing of the preliminary guidelines among women in KwaZulu Natal and the Western cape"</i> – SAJCN 2001:14(1)9-19.
	Editorial comment: <i>"Open Debate – South African Food-Based Dietary Guidelines"</i> - South African Journal of Clinical Nutrition 2001(14)2:42-43
	Background (technical support) papers for the FBDGs - SAJCN 2001:14(3): Supplement, S1-S80
Scientific presentations	<i>"Development of the South African Preliminary Food-Based Dietary Guidelines"</i>
	FAO/ILSI Workshop on Food-Based Dietary Guidelines and Nutrition Education - (Harare, Zimbabwe, 26-29 October 1999)
	<i>"The Appropriateness of the South African Preliminary Food-Based Dietary Guidelines for Women in KwaZulu Natal"</i>
	19 th National Conference: Dietitians Association of Australia - (Canberra, Australia, 18-21 May 2000)
	13 th International Congress of Dietetics - (Edinburgh, Scotland, 23-27 July 2000)
<i>"Interpretation of the South African Preliminary Food-Based Dietary Guidelines by Women in KwaZulu Natal"</i>	
<i>"Do Food Guides currently used in South Africa complement the Food-Based Dietary Guidelines?"</i>	
Biennial Nutrition Congress of the Nutrition Society of South Africa and the Association of Dietetics in South Africa - (Durban, South Africa, 15-18 August 2000)	
<i>"The Evolution and Testing of the South African Dietary Guidelines"</i>	
<i>"Effective Nutrition Education in South Africa: Is there a Role for a Food Guide?"</i>	
6 th National Congress of the South African Association of Family Ecology and Consumer Studies (SAAFECs) - (Pretoria, South Africa, 1-5 October 2001)	
Book chapter	<i>Dietary Guidelines. Chapter 12. In: The Hospitality Industry Handbook on Nutrition and Menu Planning. Gordon Davis L, Van Rensburg L (2002). Cape Town: Juta & Co.</i>
	<i>Food-Based Dietary Guidelines. Chapter 6: Nutrition. In: Manual for Fitness Professionals. Exercise Teachers Academy (2002). Cape Town: Sports Science Institute of South Africa.</i>

3.3 OVERALL RECOMMENDATIONS ON THE FBDGs DEVELOPMENT PROCESS

“FBDGs should be based on the realities in each country and on what can be achieved over time” (WHO 1998).

With the ultimate aim being the approval and adoption of FBDGs as national dietary guidelines, it is recommended that the FBDG development process begin with as wide a consultative process as possible from key role players in the health/food sectors of government. In this way, government involvement in and commitment to the project is more firmly established from the beginning.

To assist in prioritising identified nutrition-related public health concerns and to enhance government ownership of the FBDGs development process, it is strongly recommended that all divisions of the Department of Health (nutrition, oral health, mother and child, food control/labelling, HIV/AIDS, geriatrics, chronic diseases) be represented on the working group or at least be provided with continuous feedback from the Department of Health representative. Earlier consultation with the Departments of Agriculture and Education is also recommended in relation to the potential impact of the FBDGs on agricultural practices and the school curriculum, respectively.

Such contact with the Department of Health will also enable the FBDGs to be considered in the wider context of government policies that relate to health, nutrition, education, social welfare, agriculture and macroeconomics (foreign trade, exchange rates and food prices). Specific nutrition-related policies needing consideration include the Integrated Nutrition Programme, Agricultural Policies for Household Food Security and the Poverty Alleviation Programme. This will help to ensure consistency between the FBDGs and relevant national policies to support and enable the application of FBDGs by individuals.

Although the first draft set of FBDGs was subjected to fuller discussions with nutritionists and dietitians, such discussions had limited attendance from the broader health community. It is therefore recommended that to assist fuller discussions, additional opportunities should be sought with other members of the health community through professional associations and societies, such as doctors, nurses, dentists, oral hygienists and community health workers.

The decision to conduct consumer testing and refine the proposed FBDGs prior to the finalisation of the background (technical support) papers proved to be a time saving step in the development process.

For sustainability of a project of such magnitude and ramifications as the FBDGs, it is recommended that any working group that initiates such a project and seeks national approval and adoption, first approaches the Department of Health to enlist their support and commitment to the process. The establishment of a permanent working group, responsible to government, might be the best way to ensure better communication within the Department of Health, and hence more rapid approval and adoption.

Another advantage of establishing such a working group as a permanent function of the Department of Health is that the responsibility of dissemination of FBDG education materials and periodic review of the guidelines becomes that of the Department of Health. It is envisaged that this function can be done via the various tertiary training institutions (universities, technikons, colleges) throughout the country. Ownership, credibility and awareness of the FBDGs process are also broadened in this way.

A final recommendation is that once national approval and adoption of the proposed FBDGs is achieved, all individuals and organisations involved in nutrition/health education in any form should work towards integrating the FBDGs into nutrition/health policies, programmes and materials (such as diet sheets, food/nutrition labels, school curricula and tertiary level education textbooks). Such activities will require action on the part of national and provincial government (in particular, health, agriculture and education departments), nutrition and health professional organisations, the food industry and food service sector, and non-governmental organisations.

The FAO/WHO FBDG Development Process can therefore be regarded as having been a viable process for the development of FBDGs for South Africa as it was possible to adapt the process to meet the realities of the country and what could be achieved over time.

It is strongly recommended, however, that the Department of Health appoint a representative scientific committee specifically for the purpose of reviewing and reformulating the South African FBDGs to ensure sustainability of this process. Such a recommendation is supported by the report of the WHO representative following a meeting held on 22-01-2002 with the SA FBDG Chairman and Department of Health representative (Pietinen 2002). It is suggested that an authoritative body, such as a National Nutrition Council, be appointed by the Department of Health, for a specific term of office, headed by a reputable person with members representing academia, government, non-governmental organisations and consumer groups. The Council is then responsible for appointing a Scientific Committee to make proposals concerning scientific issues, such as dietary guidelines. Such a process is regarded as providing greater representation and adding credibility to the process.

It should also be remembered that food security is an issue for at least 50% of South African households. While FBDGs may be an effective nutrition education tool to address the nutrition-related public health problems experienced by many South Africans, these dietary guidelines will need to be applied sensitively where food insecurity is apparent. FBDGs may not improve household food security by increasing the availability of and access to food, but they can assist in promoting the best use of available resources, including food. For this to occur effectively, however, the starting point when using FBDGs should always be the consumer's needs, namely, their predominant nutrition-related health problems, constraints and circumstances.

For the long-term resolution of nutrition-related health problems in South Africa, nutrition education needs to be accompanied by several strategies to improve access to basic resources (such as water and fuel). Nutrition education, and the use of FBDGs, therefore needs to be part of a larger programme, not only focusing on combating hunger and micronutrient deficiencies, but also on encouraging self-sufficiency and economic sustainability.

CHAPTER 4:**RESEARCH DESIGN**

This chapter outlines the research design used in the execution of study objectives 2 and 3, namely:

- to assess the appropriateness of the proposed South African FBDGs to study participants in terms of comprehension and application of the guidelines, and

Comprehension of the guidelines will be examined in terms of study participant perceptions, general understanding and specific interpretations.

Application of the guidelines will be examined in terms of the ability of study participants to apply the guidelines when planning a typical day's meals for their families.

- to evaluate the compatibility of the proposed South Africa FBDGs in terms of personal and FBDG food categorisation as perceived by study participants, and food categorisation as depicted in the food guides that are commonly used in South Africa.

Data collection methodologies used for the execution of objectives 2 and 3 were a combination of qualitative and quantitative research methods, namely, focus group discussions and semi-structured individual interviews.

For both objectives 2 and 3, focus group participants were subjected to intentional participant observation during which they were required to perform different tasks using a selection of colour food photographs. This was done as a means of observing application of knowledge regarding the dietary guidelines and to provide feed back to participants to determine if participants regarded the findings as a reasonable account of their experiences.

Choice of study population, sampling procedure, sample size, data collection and data analysis used in the study are revealed below. Questionnaires and relevant forms are included as appendices.

An overview of choice of methodology, data collection and data analysis used in the investigation of study objectives 2 and 3 is provided in Table 4.1:

Table 4.1 Description of choice of methodology, data collection and data analysis used to investigate study objectives 2 and 3

STUDY OBJECTIVES	AREAS OF INVESTIGATION	METHODOLOGY	DATA COLLECTION	DATA ANALYSIS
<p>Objective 2: To assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension and application of the guidelines among women living in KwaZulu Natal.</p>	<p>To probe comprehension and application of the FBDGs in terms of:</p> <ul style="list-style-type: none"> * previous exposure to and sources of information about concepts conveyed by the proposed FBDGs * general understanding and specific interpretations regarding concepts, terminology and descriptions used in the proposed FBDGs * perceived importance of applying each FBDG * perceived barriers to the application of the proposed FBDGs * ability to plan a typical day's meals that reflect the proposed FBDGs 	<p>Focus group discussions</p> <p>Intentional participant observation</p> <p>Semi-structured individual interviews</p> <p>Conducted with women living in KwaZulu Natal.</p>	<p>Focus group transcripts</p> <p>Food photograph tasks</p> <p>Interview questionnaires</p>	<p>Atlas.ti and descriptive analysis; Statistical analysis (MS Excel)</p>

Table 4.1 continued over page/

Table 4.1 Description of choice of methodology, data collection and data analysis used to investigate study objectives 2 and 3 (continued)

STUDY OBJECTIVES	AREAS OF INVESTIGATION	METHODOLOGY	DATA COLLECTION	DATA ANALYSIS
<p>Objective 3: To assess the compatibility of the proposed South Africa FBDGs in terms of food categorisation as perceived by women living in KwaZulu Natal and as depicted in the food guides that are commonly used in South Africa.</p>	<p>(a) To identify common foods/drinks (known and consumed frequently by participants), and reasons for infrequent consumption of known foods/drinks.</p> <p>(b) To identify personal food categorisation (way/s in which common foods/drinks are categorised by participants without food group prompting).</p> <p>(c) To assess FBDG food categorisation (selection of foods/drinks by participants per food category as implied by the FBDGs, namely, starchy foods, fruits, vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks).</p> <p>(d) To determine previous exposure to and reported usage of food guides commonly used in South Africa, and any influence this may have had on personal food categorisation.</p> <p>(e) To assess the compatibility of the proposed South African FBDGs in terms of: * personal food categorisation as perceived by participants * FBDG food categorisation as perceived by participants * food groupings as depicted in food guides commonly used</p>	<p>Focus group discussions</p> <p>Intentional participant observation</p> <p>Semi-structured individual interviews</p> <p>Conducted with women living in KwaZulu Natal.</p>	<p>Focus group transcripts</p> <p>Food photograph tasks</p> <p>Interview questionnaires</p>	<p>Descriptive analysis; Comparative analysis; Statistical analysis (MS Excel)</p>

4.1 STUDY POPULATION

This cross-sectional study was conducted in KwaZulu Natal, the most populated province in South Africa, comprising 8.4 million people with the following features:

- gender: 53.1% female
 - ethnicity: 81.7% Black; 9.4% Indian; 6.6% White; 1.4% Mixed Origin (“Coloured”)
 - home language: 79.8% Zulu; 15.8% English; 1.6% Afrikaans; 1.6% Xhosa
 - settlement type: 43.1% urban dwellers; 56.9% rural dwellers
- (Statistics SA 1998)

4.2 SAMPLING PROCEDURE

The sampling procedure used in this study is illustrated in Figure 4.1.

Magisterial districts within KwaZulu Natal were supplied by Statistics South Africa (KwaZulu Natal Provincial Office) according to settlement type criteria, namely, rural, urban informal and urban formal. Within these settlement types, additional stratification was done to provide ethnic representation within KwaZulu Natal, namely, Black Zulu-speaking, Indian English-speaking and White English-speaking. This resulted in five levels of selection, namely: rural Black Zulu-speaking; urban informal Black Zulu-speaking; urban formal Black Zulu-speaking; urban formal Indian English-speaking; and urban formal White English-speaking.

Within each of these five selection levels, two geographically separate magisterial districts were selected using a random number table. Magisterial districts included in the National Food Consumption Survey, being conducted in KwaZulu Natal at the time of this study, were removed from the selection list to eliminate possible study participant fatigue. A total of ten (10) geographically separate magisterial districts were selected – five for focus group discussions and five for semi-structured interviews – so as to reduce cross-contamination of the study population. Within each of the ten selected magisterial districts, one enumerator area was selected using a random number table. A total of ten (10) enumerator areas were selected - five for focus group discussions and five for semi-structured interviews. The magisterial area of Pietermaritzburg was selected as the pilot site for pilot testing of the individual interview questionnaire (see Table 4.2).

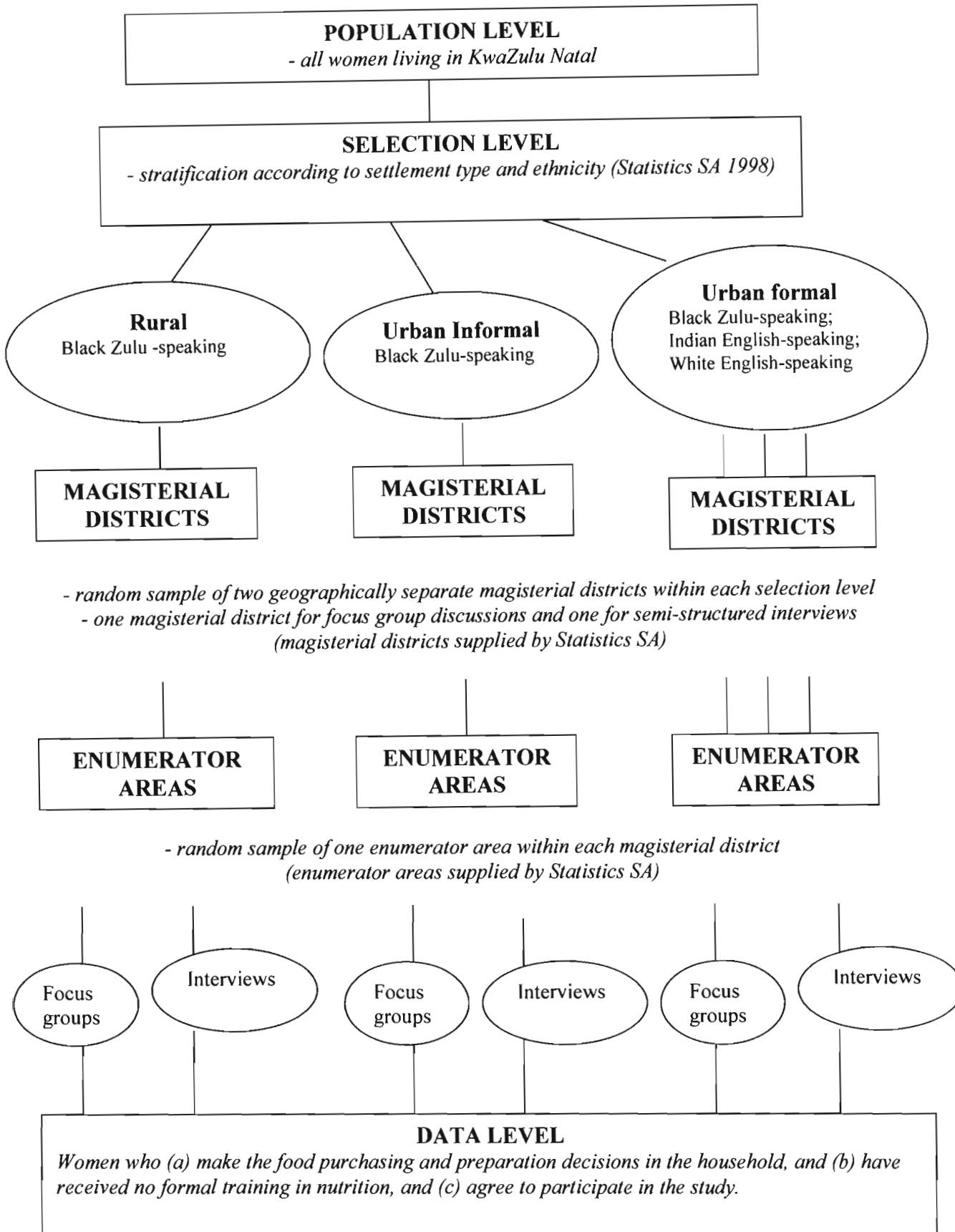


Figure 4.1 Sampling procedure (after Leedy 1993)

Table 4.2 Magisterial districts and enumerator areas selected for investigation

Methodology	Settlement Type & Ethnicity	Magisterial Districts	Enumerator Areas
Focus group discussions	Rural Black Urban Informal Black Urban Formal Black Urban Formal Indian Urban Formal White	Estcourt Durban Central Nqutu KwaDukuza Durban Outer West	Thembalihle Village Cato Crest Empumelelweni Stanger Township Hillcrest
Individual interviews – pilot test	Rural Black Urban Informal Black Urban Formal Black Urban Formal Indian Urban Formal White	Pietermaritzburg Pietermaritzburg Pietermaritzburg Pietermaritzburg Pietermaritzburg	Mbumbane Village Willowfontein Imbali Raisethorpe Chase Valley
Individual interviews – actual study	Rural Black Urban Informal Black Urban Formal Black Urban Formal Indian Urban Formal White	Eshowe Camperdown Umlazi Chatsworth Durban Central	Ufasimba Village Hlanganani Y-section Croftdene Montclair

Area maps of each randomly selected enumerator area were supplied by Statistics South Africa (KwaZulu Natal Provincial Office). A random point of entry was chosen on each enumerator area map from which field workers began participant recruitment. Study participants for both focus group discussions and individual interviews for all enumerator areas were recruited during weekdays using convenience sampling, that is, field workers moved from residence to residence recruiting whoever was home at the time.

All study participants recruited were women who:

- (a) made the food purchasing and preparation decisions in the household, and
- (b) had received no formal training in nutrition (degree/diploma in nutrition; nurse; medical doctor; nutrition advisor; community health worker), and
- (c) agreed to participate in the study.

4.3 SAMPLE SIZE

4.3.1 Sample size for focus group discussions

The accepted size for a focus group discussion has traditionally been 10-12 participants. This trend, however, is moving toward smaller groups consisting of 6-8 participants to provide greater depth of response from each participant. Smaller groups are often more cohesive and interactive (Debus 1995). The size of focus group discussions for the purpose of this study was therefore set at 6-8 participants. As a starting point to get a diversity of views, 3 focus group discussions were conducted per enumerator area, that is, a total of 15 focus group discussions, reaching a total of 103 participants (see Table 4.3).

Table 4.3 Sample size: Focus group discussions

Enumerator Areas (EA)	Focus group discussions per EA	Number of participants per EA (% of total participants)	Average number of participants per focus group
Rural Black	3	24 (23.3)	8
Urban Informal Black	3	19 (18.5)	6
Urban Formal Black	3	25 (24.3)	8
Urban Formal Indian	3	16 (15.5)	5
Urban Formal White	3	19 (18.5)	6
Total focus groups n = 15		Total participants n = 103	

4.3.2 Sample size for individual interviews

A “general rule of thumb” was used when calculating the sample size for individual interviews, which states that the bigger the population, the smaller the sample (Terre Blanche & Durrheim 1999). No variance was available to calculate a representative sample size as no research has been done in this area. Therefore, in the absence of information on which to base the sample size, as a starting point, a minimum number of 40 participants were interviewed per urban enumerator area. The sample size for the rural enumerator area was larger (n=70) to reflect the greater proportion of rural to urban dwellers in KwaZulu Natal (see Table 4.4). A total of 230 participants were included in the study, representing a 100% response rate.

Table 4.4 Sample size: Structured individual interviews

Individual Interviews	Enumerator Areas (EA)	Number of interviews (participants) per EA (% of total participants)	Total participants
Pilot-testing	Rural Black	7 (30.4)	n = 23
	Urban Informal Black	4 (17.4)	
	Urban Formal Black	4 (17.4)	
	Urban Formal Indian	4 (17.4)	
	Urban Formal White	4 (17.4)	
Actual study	Rural Black	70 (30.4)	n = 230
	Urban Informal Black	40 (17.4)	
	Urban Formal Black	40 (17.4)	
	Urban Formal Indian	40 (17.4)	
	Urban Formal White	40 (17.4)	

4.4 DATA COLLECTION

The data collection methodologies used for this study were a combination of qualitative and quantitative research methods, which enhanced the reliability and validity of the study results.

- Qualitative research, in the form of focus group discussions, was used to obtain in-depth responses regarding the study participants' thoughts and feelings so as to gain insight into beliefs, attitudes, motives and behaviours.
- Quantitative research, in the form of semi-structured individual interviews that were administered by an interviewer, was used in a complementary manner to provide a measurement of consumer responses to support the findings discovered in the qualitative research. In this circumstance, the qualitative research was also used as a preliminary step for the development of the questionnaire used for the semi-structured individual interviews.
- Intentional participant observation, during which participants were required to perform different tasks using a selection of colour food photographs, was also employed during focus group discussions and interviews. This was done as a means of observing application of knowledge regarding the dietary guidelines, and to provide feed back to participants to determine if participants regarded the findings as a reasonable account of their experiences.

4.4.1 Focus group discussions

4.4.1.1 Motivation for choice of focus group methodology

A focus group discussion has been defined as a “planned, focused discussion involving a small group of people and facilitated by an interviewer”. Focus group discussions provide greater depth response (due to group interaction) and, therefore, greater consequent understanding, of the various consumer behaviours that relate to a given consumer decision or action. Focus group discussions also provide the opportunity to view and experience study participants directly by observing non-verbal behaviour (Simon 1999; Debus 1995).

Focus group discussions were therefore chosen for this study as an opportunity for gathering in-depth information (not only about what people think, but why they think that way) as well as observe and record non-verbal communication that might be missed in a survey. Other benefits of using focus group discussions were that they would be relatively inexpensive to conduct and results could be gathered quickly (Simon 1999; Kitzinger 1995).

Much controversy has been associated with the use of focus group discussions and other qualitative research methods because of potential pitfalls (Debus 1995). These pitfalls are outlined below, with explanations of how this study overcame or limited them.

* Focus group discussions involve small groups of participants who are not generally sampled on a probability basis. In such cases, no attempts can be made to draw firm conclusions or to generalise results to the population at large. This study selected enumerator areas using random sampling in an effort to overcome this limitation. To increase the sample size of focus group discussions, focus group sessions were held in each selected enumerator area until no new information was being gathered from the participants.

* A major problem with focus group discussions is that they are highly susceptible to subjective bias. To limit moderator and observer bias in this study, all moderators and recorders were trained in focus group discussion skills. A pre-tested topic guide was also used to ensure the moderator covered all areas of discussion pertaining to the study. To limit analysis bias, transcripts were interpreted using a computer package designed specifically for qualitative data, namely, Atlas.ti (Atlas.ti Website 1999).

4.4.1.2 Use of focus group methodology in the study

Focus group discussions were conducted using a selection of 119 colour food photographs (see Appendix 5) and a pre-tested topic guide (see Appendix 6). Each focus group discussion took an average of 1 hour 40 minutes to conduct (including a mid-way refreshment break). Venues used included a school classroom, library hall, municipality town halls, and individual's homes.

Two trained female focus group moderators, one Zulu- and one English-speaking, conducted the focus group discussions with Zulu- and English-speaking participants respectively. Two trained female focus group observers, one Zulu- and one English-speaking, observed the focus group discussions with the Zulu- and English-speaking participants respectively, and took written notes of the proceedings (see Figure 4.2). The Medical Research Council provided training of moderators and observers.



Figure 4.2 Focus Group investigating FBDGs: Rural Black Zulu-speaking participants

The main part of the focus group discussions pertained to the eleven proposed food-based dietary guidelines (FBDGs). The English version of these guidelines was translated into Zulu by three independent sources, resulting in the final version below (see Table 4.5).

Table 4.5 Eleven Proposed Dietary Guidelines - Tested Using Focus Group Discussions

ENGLISH VERSION	ZULU VERSION
Enjoy a variety of foods	Thokozela ukudla okwahlukene noma okunhlobonhlobo
Be active	Khuthalela ukwelula umzimba
Make starchy foods the basis of most meals	Isitashi akube yisona sisekelo sokudla noma esiningi ngezikhathi zinke
Eat plenty of fruits and vegetables every day	Yidla izithelo kanye nemifino eminingi ngazo zonke izinsuka
Eat legumes regularly	Yidla izinhlobonhlobo zikabhontshisi njalo
Foods from animals can be eaten every day	Ukudla okutholakala kwizilwane ezahlukene ungakudla zonke izinsuku
Use fat sparingly	Sebenzisa amafutha kancane
Use salt sparingly	Sebenzisa usawoti kancane
Drink lots of clean, safe water	Phuza ngokwenele amanzi ahlanzekile nangenangozi
If you drink alcohol, drink sensibly	Uma uphuza utshwala, kwenze ngokuhlakanipha
Eat healthier snacks	Yidla ukudla okuncane noma okuphakathi kwezikhathi zokudla okunomsoco

Moderators guided each focus group discussion to investigate:

- previous exposure to each FBDG, and sources of information
- general understanding of each FBDG, and interpretation of specific terminology and concepts
- interpretation of the food categories as suggested by the FBDGs
- perceived importance of each FBDG and reasons why/not
- ability to implement each FBDG, and reasons why/not
- ability to use the FBDGs to plan a day's meals

All focus group discussions were recorded using two audiotape cassette recorders, as well as written notes made by the observers. Recordings for each discussion were translated (Zulu groups) and transcribed independently by the moderator and observer of that session. Both transcripts were then compared and adjusted to produce a final transcript that accurately reflected the discussions. Notes made by the observers were considered in the compilation of the final transcript.

4.4.2 Individual interviews

4.4.2.1 Motivation for choice of individual interview methodology

An interview can be described as a series of pre-determined questions to collect important information about consumer behaviours, attitudes, beliefs and characteristics. This study therefore also made use of interviews (questionnaires) that were administered by an interviewer in an individual manner. Individual interviewing provided several advantages, namely, higher response rate, assurance that only the designated respondent answers the questions, and the ability to control question order, standardise and control the environment, observe non-verbal behaviour, record spontaneous answers, ensure all questions are answered, and reach respondents unable to complete the questionnaire themselves (illiterate, semi-literate, disability such as blindness) (Britten 1995; Perkin 1992).

4.4.2.2 Use of individual interview methodology in the study

Individual interviews were conducted using a selection of 128 colour food photographs (see Appendix 5), a pre-tested questionnaire (see Appendix 7) and coloured illustrations of food guides commonly used in South Africa (see Appendix 8).

The questionnaire was compiled in English and translated into Zulu by three independent sources. Both English and Zulu questionnaires were pilot tested and adjusted accordingly to produce the final versions. Adjustments due to pilot testing included rewording of some questions to reduce ambiguity and restructuring the record sheets to facilitate capturing of answers by field workers.

The selection of colour food photographs used was the same as those used for the focus group discussions. However, as an outcome of the focus group discussions, an additional nine food photographs were included based on commonly identified items for which there were no photographs, namely, “sev ‘n nuts” (snack food of nuts), ginger, garlic, spices, stock cubes, soup powder, flour, bottled water, and traditional home-brewed Zulu beer.

Each interview took an average of 1½ hours to conduct. Interviews were conducted in the home of the participant by a trained female interviewer, in the home language of the participant, namely, English or Zulu. During the interview, participants were asked to:

- identify common foods and drinks (known and frequently consumed by the family)
- provide reasons for non-consumption of known foods/drinks
- categorise their selection of common foods and drinks according to their own understanding of the word “similar”
- categorise their selection of common foods and drinks according to their own understanding of the food categories as implied by the FBDGs
- discuss their exposure to and usage of five food guides commonly used in South Africa, namely, 3 food groups, 5 food groups, food guide pyramid, food square, mixed meal guide

Interviewers were trained regarding the asking of questions and the completion of the questionnaire record sheets. Questions were read exactly as worded on the questionnaire, with inadequate answers indirectly probed in a non-judgemental manner. All individual interviews were coded onto record sheets and then captured onto computer by the researcher.

4.4.3 Intentional participant observation

4.4.3.1 Motivation for choice of intentional participant observation methodology

Intentional participant observation is an approach to data collection in which evidence is collected through deliberate observation of participants. This approach was employed during focus group discussions and individual interviews, where study participants were observed performing different tasks using a selection of colour food photographs. This methodology provided a greater understanding of how study participants applied their knowledge regarding the dietary guidelines. This methodology also enhanced the validity of the study by providing a third form of data collection, that is “triangulation” (Mays & Pope 1995; Pope & Mays 1995).

Food photographs used in the study consisted of foods/drinks commonly consumed by South Africans as identified from regional and ad hoc food and nutrient intake studies. All foods/drinks were photographed in a non-stylistic, uncooked/unprepared manner, as identified through regional and ad hoc food and nutrient studies (see Appendix 5). The foods/drinks chosen for the study have purposely excluded “composite” (mixed) foods. This is in keeping with findings from American and British food guide research, namely, that food guides are best used to describe single foods, and additional education needs to be done regarding mixed foods. All foods/drinks were photographed in a non-stylistic, uncooked/unprepared manner to enhance identification and to reduce bias regarding brand names and preparation methods. Where a food/drink was mentioned for which there was no photograph, the name of the food/drink was written on a separate index card and included in the discussion/interview.

Photographs of foods were chosen instead of line-drawn pictures and silhouettes as studies have shown that photographs (realistic representations) of objects are interpreted more accurately than line drawings (schematic representations) (Gummesson, Jonsson, Conner & Svensson 1996; Fuglesang 1973).

4.4.3.2 Use of intentional participant observation methodology in the study

Focus group participants were asked to provide verbal examples of commonly consumed foods/drinks for each of the food categories implied by the FBDGs, namely, starchy foods, fruits and vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks. Coloured food photographs of the food/drink examples provided were given to the focus group participants who were divided into smaller groups and asked to plan a typical day’s meals using the various food photographs. Such participant observation provided greater understanding as to the ability of study participants to apply their knowledge regarding the dietary guidelines. Intentional participant observation was also used to provide feedback to participants to determine if participant responses had been recorded accurately.

4.4.4 Ensuring reliability and validity

In the health (and nutrition) field, with its strong attachment to traditional, conventional, quantitative research methodology, qualitative research is often criticised for lacking scientific rigour. Important criticisms are researcher bias, lack of reproducibility, lack of generalisability, and lack of validity (Mays & Pope 1995; Pope & Mays 1995; Sandelowski 1995).

Researcher bias

Qualitative research is regarded by some as a mere assembly of anecdotal and personal impressions, strongly subject to researcher bias. The problem with presenting qualitative analyses objectively is the sheer volume of data customarily produced and the relatively greater difficulty faced by the researcher in summarising this data. One solution offered is to present extensive sequences from the original data accompanied by a detailed explanation. Another solution is to combine a qualitative analysis with some quantitative summary of the results. To reduce researcher bias within this study, qualitative results are accompanied by a detailed explanation and are also verified with quantitative data.

Lacking reproducibility (reliability)

Qualitative research is regarded by some as so personal to the researcher that there is no guarantee that a different researcher would not come to radically different conclusions. For the majority of qualitative research, data is collected in a relatively unstructured format - often audio recordings or transcripts of conversations. To enhance reliability, it is therefore recommended that qualitative researchers maintain meticulous notes of discussions and observations, and that they document the analysis process in detail. The reliability of the analysis of qualitative data can be enhanced further through the use of:

- * a fairly structured interview (topic) guide, where questions/topics to be covered in the focus group discussions are logically organised so that data is collected in a more useable form;
- * computer software and/or an independent assessor.

To enhance reliability of this study, a standard pre-tested topic guide was used together with audio tape cassettes to record focus group discussions (providing greater opportunity for analysis), and data analysis was done by an independent consultant using a qualitative research software programme, namely Atlas.ti.

Lacking generalisability

Qualitative research is regarded as generating large amounts of detailed information about a small number of settings. To maximise generalisability, it is suggested that statistical sampling methods, such as random sampling, be used so as to provide raw data for a comparative analysis. In an attempt to maximise generalisability, this study has therefore used a stratified, random sampling procedure of magisterial districts and enumerator areas as supplied by Statistics South Africa (KwaZulu Natal Provincial Office). Comparative analysis has also been done within and across enumerator areas.

Lacking validity

Alongside the issue of reliability is the extent to which qualitative research truly reflects the phenomenon under scrutiny. Supporters of qualitative research propose that qualitative methods actually score higher on validity than quantitative methods “by getting at how people really behave and what people actually mean when they describe their experiences, attitudes and behaviours”. To check the validity of qualitative research, it is recommended

that the study methodology include a “triangulation” approach, where three or more different data collection methods are used and the results compared for convergence. To enhance validity of this study, “triangulation” was used in the form of focus group discussions, individual interviews, and intentional participant observation and feedback to determine if participants regarded the findings as a reasonable account of their experiences.

4.4.5 Answering of questions

Questions asked by participants during focus group discussions or individual interviews were dealt with in two ways:

- questions that were unrelated to the study topics were answered during the course of the focus group discussion or interview
- questions that could influence the responses of the participants were answered at the end of the focus group discussion or interview

4.4.6 Remuneration of participants

Participants were informed that they would not be paid for their involvement in the study. However, as a means of thanks, all participants received a hamper of food products (sugar, dry beans, flour, tinned pilchards, soya mince, rooibos tea, rice, milk) generously donated by food industry.

4.5 DATA ANALYSIS

4.5.1 Focus group discussions

Final transcripts of all focus group discussions (n=15) were submitted to a trained consultant for analysis using the Atlas.ti computer software programme. Atlas.ti is designed in accordance with the grounded theory paradigm of qualitative research that seeks to derive or generate hypotheses and theories from empirical data, thus 'grounding' the theory in the data analysed. The goal of such analysis is not to *test* hypotheses but to *construct* theory based on participant understandings of the phenomenon under study. Whilst hypothesis testing is a deductive operation, theory-building, involving qualitative hypothesis examination and verification involves both deductive and inductive steps: initial hypotheses are inductively generated, but subsequently deductively examined to validate and verify them (Goldstone 2001).

This computer programme facilitates many of the activities involved in text analysis and interpretation, in particular, selecting, coding, annotating and comparing passages of text. The process begins with the coding of the actual textual data (transcripts) from which a series of patterned quotation retrievals are made based on the relationships or linkages found in the text. This structure encourages new ways of looking at the data and aids in the construction of concepts and the building of theories. (More detailed information about the Atlas.ti package is available on <http://www.atlasti.de>) (Atlas.ti Website 1999).

4.5.2 Individual interviews

All individual interviews (n=230) were coded onto record sheets and then captured onto computer by the researcher. Analysis of data was done using statistical functions of the

computer software programme, MS EXCEL. Single factor analysis of variance (ANOVA) tests were performed to test for significant differences in mean ages within focus group samples, within interview samples and between focus group and interview samples. Chi-squared tests were calculated to determine the significance of any associations for questionnaire answers within the interview sample. Significance was measured at a p-value of <0.01. Assistance was received from the University of Natal regarding statistical analysis and interpretation.

4.6 SUMMARY

Data collection methodologies used for this study were a combination of qualitative and quantitative research methods, namely, focus group discussions and semi-structured individual interviews.

Sample size and composition reflected settlement types and ethnicity of people living in KwaZulu Natal, namely, rural, urban informal and urban formal Black Zulu-speaking women; urban formal Indian English-speaking women; and urban formal White English-speaking women. Study participants were recruited using convenience sampling from randomly selected enumerator areas within randomly selected magisterial districts. Study participants were women who made the food purchasing and preparation decisions in the household, had received no formal training in nutrition (degree/diploma in nutrition; nurse; medical doctor; nutrition advisor; community health worker), and agreed to participate in the study. A total of 15 focus group discussions (reaching 103 participants) were conducted. The pilot testing of the individual interview questionnaire included 23 participants, with a total of 230 actual individual interviews being conducted.

Focus group discussions were conducted using a selection of 119 colour food photographs and a pre-tested topic guide. Each focus group discussion took an average of 1 hour 40 minutes to conduct (including a mid-way refreshment break). Trained female focus group moderators conducted the focus group discussions in the home language of the participants (Zulu or English). All focus group discussions were recorded using two audiotape cassette recorders, as well as written notes made by trained observers. Final transcripts were submitted to a trained consultant for analysis using the Atlas.ti computer software programme.

Individual interviews were conducted using a selection of 128 colour food photographs, a pre-tested questionnaire and coloured illustrations of food guides commonly used in South Africa. Each interview took an average of 1½ hours to conduct. Trained female interviewers conducted the interviews in the home language of the participants (Zulu or English). Analysis of the data was done using statistical functions of the computer software programme, MS EXCEL. Assistance was received from the University of Natal regarding statistical analysis and interpretation.

Both focus group and interview participants were subjected to intentional participant observation during which they were required to perform different tasks using a selection of colour food photographs. This was done as a means of observing application of knowledge regarding the dietary guidelines. This methodology also enhanced the validity of the study by providing a third form of data collection, that is “triangulation”, via feed back to participants to determine if participants regarded the findings as a reasonable account of their experiences.

CHAPTER 5:

CHARACTERISTICS OF THE SAMPLE

This chapter describes the characteristics of the sample. Descriptions are provided regarding the size and composition of the study sample, settlement types, age, education attainment, employment, religion, and sources of cooking fuel and water.

5.1 SIZE AND COMPOSITION OF THE STUDY SAMPLE

Qualitative data, using focus group discussions ($n=15$), were collected from 103 women from five geographically separate enumerator areas (EAs) in five magisterial districts within KwaZulu Natal (see Table 5.1). Qualitative and quantitative data, using semi-structured individual interviews, were collected from 230 women from five geographically separate EAs in five magisterial districts within KwaZulu Natal (see Table 5.1):

Table 5.1 Size and composition of study sample

Magisterial District	Enumerator Area	Settlement Type	Ethnicity	Home Language	No. of women (% total sample)
<i>FOCUS GROUP DISCUSSIONS (n=103)</i>					
Estcourt	Thembalihle	Rural	Black	Zulu	24 (23.3)
Durban Central	Cato Crest	Urban Informal	Black	Zulu	19 (18.5)
Nqutu	Empumelelweni	Urban Formal	Black	Zulu	25 (24.3)
KwaDukuza	Stanger Township	Urban Formal	Indian	English	16 (15.5)
Durban Outer West	Hillcrest	Urban Formal	White	English	19 (18.5)
TOTAL					103
<i>INDIVIDUAL INTERVIEWS (n=230)</i>					
Eshowe	Ufasimba Village	Rural	Black	Zulu	70 (30.4)
Camperdown	Hlanganani	Urban Informal	Black	Zulu	40 (17.4)
Umlazi	Y-section	Urban Formal	Black	Zulu	40 (17.4)
Chatsworth	Croftdene	Urban Formal	Indian	English	40 (17.4)
Durban Central	Montclair	Urban Formal	White	English	40 (17.4)
TOTAL					230

5.2 DESCRIPTION OF SETTLEMENT TYPES

Magisterial districts within KwaZulu Natal were supplied by Statistics South Africa (KwaZulu Natal Provincial Office) according to settlement type criteria, namely, rural, urban informal and urban formal. Within these settlement types, additional stratification was done to provide ethnic representation within KwaZulu Natal, namely, Black Zulu-speaking, Indian English-speaking and White English-speaking. This resulted in five levels of selection, namely: rural Black Zulu-speaking; urban informal Black Zulu-speaking; urban formal Black Zulu-speaking; urban formal Indian English-speaking; and urban formal White English-speaking.

A description of these five settlement types (selection levels) follows:

Rural Black participants came from villages in Estcourt and Eshowe, where homes were mostly mud huts. Water was collected from nearby rivers or communal outdoor taps, and firewood was used for heating and cooking (see Figure 5.1).

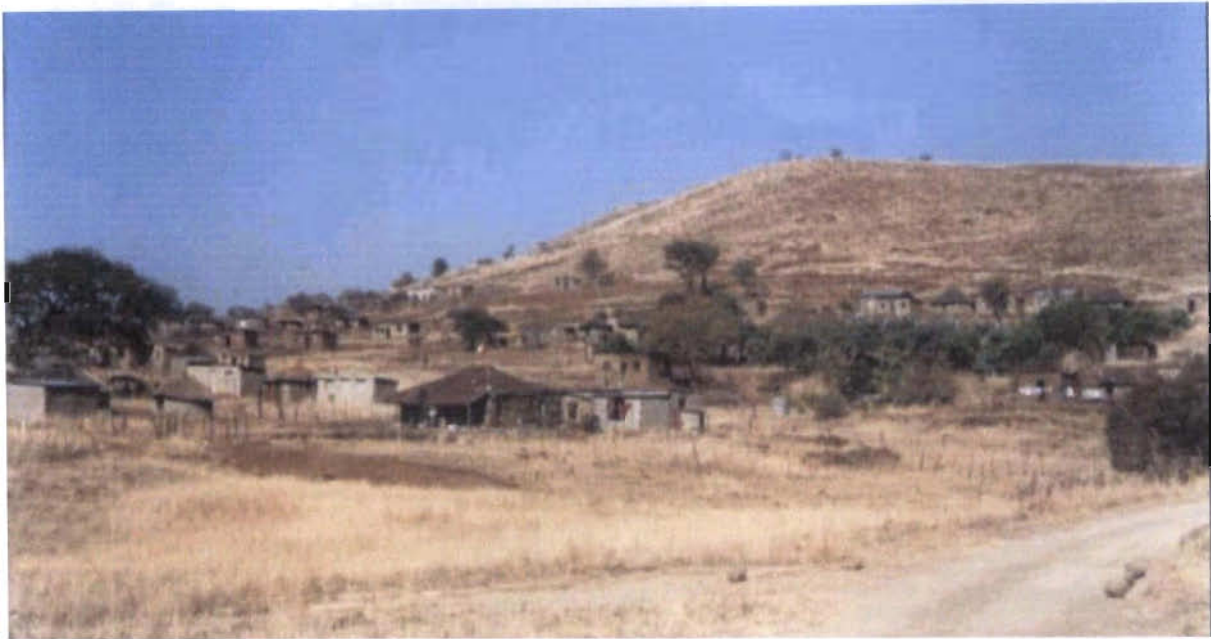


Figure 5.1 Typical dwelling: Rural Black Zulu-speaking participants

Urban informal EAs selected were Cato Crest and Hlanganani. Homes consisted of tin and corrugated iron. Water was collected from communal outdoor taps or containers delivered by the municipality. Paraffin was the main source of cooking fuel (see Figure 5.2).



Figure 5.2 Typical dwelling: Urban Informal Black Zulu-speaking participants

Urban formal black participants from Nqutu and Umlazi lived in modest brick homes. Umlazi was a well –established suburb with electricity and indoor taps in the majority of homes. The Nqutu suburb was newly established, with many homes still not yet electrified. Here, participants used paraffin as a main source of cooking fuel, with water being obtained from communal taps (see Figure 5.3).



Figure 5.3 Typical dwelling: Urban Formal Black Zulu-speaking participants

Indian participants were selected from the urban formal areas of KwaDukuza and Chatsworth. Homes were more elaborate, often housing the members of the extended family. Homes were electrified and had indoor taps (see Figure 5.4).



Figure 5.4 Typical dwelling: Urban Formal Indian English-speaking participants

Urban formal White participants from Hillcrest and Montclair lived in a variety of brick homes. Homes were electrified and had indoor taps (see Figure 5.5).



Figure 5.5 Typical dwelling: Urban Formal White English-speaking participants

5.3 AGE OF SAMPLE

Age ranges extended from 19-61 years for focus group discussions, and from 17-75 years for individual interviews. For both focus group discussions and individual interviews, the majority of participants fell within the age categories of 20-29 years and 30-39 years. Numerical results are presented in Table 5.2. These results are also presented in graphical form in Figure 5.6 for ease of identification and comparison.

Across focus group discussion EAs, the mean age of urban formal Indian participants (44.06 years) was higher than that of the other focus group EAs (32.24 – 36.63 years). Although significantly higher ($p=0.01$), this difference is explained by the small sample size ($n=16$) of urban formal Indian participants (due to political unrest that arose in the area, curtailing further focus groups). It is projected that an additional focus group of urban formal Indian participants would have lowered the mean age in line with the other focus group EAs. Across all individual interview EAs, no significant differences were found between mean ages ($p=0.64$).

Legend for Table 5.2 and Figure 5.6:

RB – rural Black Zulu-speaking participants
 UIB – urban informal Black Zulu-speaking participants
 UFB – urban formal Black Zulu-speaking participants
 UFI – urban formal Indian English-speaking participants
 UFW – urban formal White English-speaking participants

Table 5.2 Age range, age mean and age categories (in years) of focus group and interview participants

Methodology	Settlement Type	Age Range (years)	Age Mean (\pm std. dev.)	Age Categories						
				< 20 (%)	20-29 (%)	30-39 (%)	40-49 (%)	50-59 (%)	60-69 (%)	70 plus (%)
FOCUS GROUPS	RB (n=24)	19-55	35.54 (\pm 9.29)	4.2	12.5	50.0	25.0	8.3	0.0	0.0
	UIB (n=19)	20-61	36.63 (\pm 11.35)	0.0	31.6	26.3	31.6	5.3	5.3	0.0
	UFB (n=25)	21-59	32.24 (\pm 9.25)	0.0	56.0	24.0	16.0	4.0	0.0	0.0
	UFI (n=16)	27-59	44.06 (\pm 11.02)	0.0	6.3	37.5	12.5	43.8	0.0	0.0
	UFW (n=19)	22-57	35.84 (\pm 9.47)	0.0	21.2	57.9	5.3	15.8	0.0	0.0
	TOTAL (n=103)	19-61	36.86 (\pm 10.08)	1.0	27.2	38.8	18.5	13.6	1.0	0.0
INDIVIDUAL INTERVIEWS	RB (n=70)	18-75	37.48 (\pm 12.88)	2.9	27.1	30.0	25.7	10.0	2.9	1.4
	UIB (n=40)	17-86	37.29 (\pm 15.36)	0.0	7.5	0.0	5.0	0.0	5.0	2.5
	UFB (n=40)	17-73	35.85 (\pm 14.28)	12.5	25.0	25.0	20.0	10.0	5.0	2.5
	UFI (n=40)	19-62	34.5 (\pm 10.06)	2.5	32.5	40.0	15.0	7.5	2.5	0.0
	UFW (n=40)	20-61	38.9 (\pm 12.76)	0.0	30.0	20.0	30.0	15.0	5.0	0.0
	TOTAL (n=230)	17-86	36.80 (\pm 13.07)	6.1	28.3	26.5	20.0	13.5	4.4	1.3
TOTAL SAMPLE	RB (n=94)	18-75	37.48 (\pm 12.88)	3.2	23.4	35.1	25.5	9.6	2.1	1.1
	UIB (n=59)	17-86	37.29 (\pm 15.36)	6.8	28.8	22.0	20.3	15.3	5.1	1.7
	UFB (n=65)	17-73	35.85 (\pm 14.28)	7.7	36.9	24.6	18.5	7.7	3.1	1.5
	UFI (n=56)	19-62	34.5 (\pm 10.06)	1.8	25.0	39.3	14.3	17.9	1.8	0.0
	UFW (n=59)	20-61	38.9 (\pm 12.76)	0.0	27.1	32.2	22.0	15.3	3.4	0.0
	TOTAL (n=333)	17-86	36.80 (\pm 13.07)	4.5	27.9	30.3	19.5	13.5	3.3	0.9

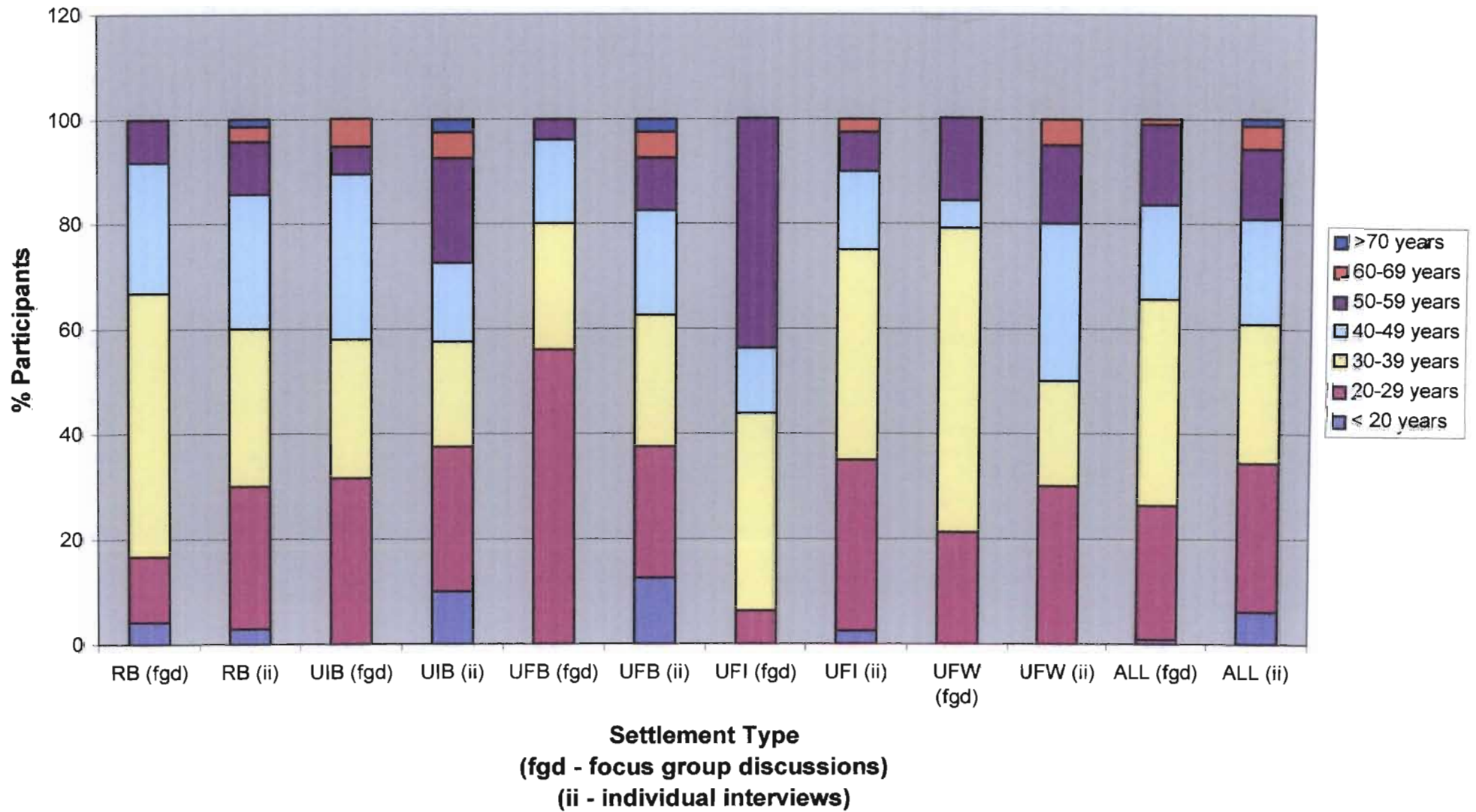


Figure 5.6 Age categories (in years) of focus group and interview participants

5.4 EDUCATION LEVELS OF SAMPLE

Higher levels of education were evident amongst all urban formal EAs for focus groups and interviews. The majority of urban formal White participants had received 12 plus years of education, with urban formal Indian and urban formal Black participants receiving 7-12 years of formal schooling. The number of years of formal schooling received was lowest amongst rural and urban informal Black participants, namely 1-6 years (see Table 5.3).

Table 5.3 Education levels of focus group and interview participants

Education Levels	ENUMERATOR AREAS (% participants)				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
<i>FOCUS GROUP DISCUSSIONS (n=103)</i>					
None	8.3	15.8	4.0	12.5	0.0
Grades 1-6	50.0	52.6	24.0	12.5	0.0
Grades 7-11 (including incomplete Grade 12)	41.7	31.6	36.0	50.0	5.3
Grade 12 (matric)	0.0	0.0	36.0	25.0	15.8
Post-matric	0.0	0.0	0.0	0.0	78.9
<i>INDIVIDUAL INTERVIEWS (n=230)</i>					
None	35.7	7.5	0.0	2.5	0.0
Grades 1-6	32.8	27.5	12.5	7.5	0.0
Grades 7-11 (including incomplete Grade 12)	21.4	50.0	42.5	55.0	35.0
Grade 12 (matric)	10.0	5.0	17.5	32.5	30.0
Post-matric	0.0	10.0	27.5	2.5	35.0

Differences in education level were found between rural Black focus group and interview participants, with fewer rural Black focus group participants receiving no education (8.3%) compared with 35.7% of rural Black interview participants. This difference is explained by the small sample size of the rural Black focus group (n=24) compared with that of the rural Black interview group (n=70). It is projected that additional focus groups of rural Black participants may have resulted in a more even spread of education levels between the rural Black focus group and interview group.

Differences in education level were also found between urban formal White focus group and interview participants, with fewer focus group participants receiving an “incomplete matric” and more receiving a “matric” or “post matric” compared to urban formal White interview participants. This difference is explained by the focus group EA, namely, Hillcrest, which is known to be resident to people with a higher socio-economic status to those resident in the interview EA, namely, Montclair.

Higher levels of education were evident amongst all urban EAs for focus groups and interviews. The number of years of formal schooling received was lowest amongst rural and urban informal Black participants. These disparities amongst different ethnic groups within South Africa are not unexpected and reflect the South African education policy pre-1994, which disadvantaged Black South Africans. Level of education attainment of the study sample was therefore regarded as a reflection of current South African society.

5.5 EMPLOYMENT LEVELS OF SAMPLE

Across all EAs, for focus group discussions and individual interviews, the majority of participants were housewives (81.42% and 67.08% respectively) (see Table 5.4). The majority of housewives were located in rural areas, with little part-time or full-time employment. Compared with rural areas, employment levels were higher for all urban areas, especially among White urban dwellers. These results are expected and in keeping with education attainment and location of residence, much of which was influenced by pre-1994 segregation (“apartheid”) policies. Employment level of the study sample was therefore regarded as a reflection of current South African society.

Table 5.4 Employment levels of focus group and interview participants

Employment	ENUMERATOR AREAS (% participants)				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
<i>FOCUS GROUP DISCUSSIONS (n=103)</i>					
Housewife	100.0	73.7	88.0	87.5	57.9
Part-time/seasonal/Occasional	0.0	5.3	4.0	12.5	21.1
Full-time	0.0	21.1	8.0	0.0	21.1
<i>INDIVIDUAL INTERVIEWS (n=230)</i>					
Housewife	92.9	75.0	55.0	72.5	40.0
Part-time/seasonal/Occasional	5.7	20.0	12.5	12.5	22.5
Full-time	1.4	5.0	32.5	15.0	37.5

5.6 RESOURCES - WATER AND COOKING FUEL

Within focus group EAs and interview EAs, vast differences were evident regarding the availability of water and cooking fuel sources (see Table 5.5).

* Focus group and interview participants living in rural areas collected water from nearby rivers, and used firewood for heating and cooking.

* Focus group and interview participants living in urban informal areas collected water from communal outdoor taps or containers delivered by the municipality. Paraffin was the main source of cooking fuel.

* Urban black interview participants residing in Umlazi (a well-established suburb) had electricity and indoor taps in the majority of homes. In the more newly established Nqutu suburb, where many homes were still not yet electrified, urban black focus group participants used paraffin as a main source of cooking fuel, with water being obtained from communal taps.

* Urban Indian and White participants, for both focus groups and interviews, had electricity and indoor taps in all houses.

Table 5.5 Water and cooking fuel sources for focus group and interview participants

ENUMERATOR AREAS				
Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
<i>WATER SOURCE</i>				
Communal (outdoor) tap/ River	Communal containers delivered by municipality/ Outdoor tap	Communal (outdoor) tap/ Indoor taps	Indoor taps	Indoor taps
<i>COOKING FUEL SOURCE</i>				
Firewood	Paraffin	Electricity and paraffin	Electricity	Electricity

These results are expected and in keeping with employment attainment and location of residence, much of which was influenced by pre-1994 segregation (“apartheid”) policies. Availability of water and cooking fuel sources for the study sample was therefore regarded as a reflection of current South African society.

5.7 SUMMARY AND DISCUSSION OF SAMPLE CHARACTERISTICS

Study participants were English-speaking Indian and White, and Zulu-speaking Black women living in KwaZulu Natal, who made the food purchasing and preparation decisions in the household and who had received no formal nutrition training (i.e.: degree/diploma in nutrition, nurse, doctor, nutrition advisor, community health worker).

Age ranges extended from 19-61 years for focus group discussions, and from 17-75 years for individual interviews. For both focus group discussions and individual interviews, the majority of participants fell within the age categories of 20-29 years and 30-39 years. Age was found to have no effect on the outcome of the study.

Higher levels of education were evident amongst all urban EAs for focus groups and interviews. The number of years of formal schooling received was lowest amongst rural and urban informal Black participants. These disparities amongst different ethnic groups within South Africa are not unexpected and reflect the South African education policy pre-1994, which disadvantaged Black South Africans. Level of education attainment was therefore regarded as a reflection of current South African society and had no effect on the outcome of the study.

Across all EAs, for focus group discussions and individual interviews, the majority of participants were housewives. Compared with rural areas, employment levels were higher for all urban areas, especially among White urban dwellers. These results are expected and in keeping with education attainment and location of residence, much of which was influenced by pre-1994 segregation (“apartheid”) policies. Employment level was therefore regarded as a reflection of current South African society and had no effect on the outcome of the study.

Within focus group EAs and interview EAs, vast differences were evident regarding the availability of water and cooking fuel sources, with rural and urban informal areas having few essential resources such as potable water and electrification. These results are expected and in keeping with employment attainment and location of residence, much of which was influenced by pre-1994 segregation (“apartheid”) policies. Availability of water and cooking fuel sources was therefore regarded as a reflection of current South African society and had no effect on the outcome of the study.

When comparing sample characteristics of all selected EAs across the five settlement types (selection levels) used in this study against definitions of these settlement types as provided by Integrated Marketing Research, it is evident that all EAs met the criteria for the specific settlement type (IMR 1999). Definitions of EAs as provided by Integrated Marketing Research (1999) are briefly described below:

Rural (tribal):

Black South Africans comprise 96% of people living in rural settlements. A typical household contains 6 people, of whom 2-3 people are adults. Two-thirds of households include children under the age of 6 years, and one-third has a pensioner in the home. Only a third of the adults are employed. Many families are engaged in subsistence farming (livestock and vegetables). The majority of families live in traditional huts. Average monthly household income is around R560. About a third of this (R200) is spent on food. Most shopping is done at the local farm or trading store. Only 12% of households have electricity. The majority of households use candles for lighting and wood fires for cooking. Water is collected from rivers or communal (shared) outdoor taps. As few as 2% of households have indoor lavatories. An outside pit latrine (“long drop”) is most commonly used (IMR 1999).

Urban informal:

16% of households in South Africa are located in urban informal settlements, the majority of whom are Black South Africans. A typical household comprises 4 people, of whom 2-3 people are adults. About half of the adults are employed. Homes are modest, with the majority made of tin or corrugated iron. Average monthly household income is around R880. About a quarter of this (R250) is spent on food. Shopping is done at neighbourhood (“spaza”) shops or in the city. About 25% of households have electricity. The majority of households use candles for lighting and paraffin stoves for cooking. Water is supplied via communal (shared) outdoor taps or delivered in containers. About a third of households have indoor lavatories. An outside pit latrine (“long drop”), a bucket system and the bush are most commonly used (IMR 1999)

Urban formal:

Urban formal dwellings include conventional 4-roomed “matchbox” homes, semi-detached and larger suburban houses, flats and town houses. The average household comprises 4-6 people. Average monthly household income ranges from R1500 to R7400. 20-25% of this (R350-R1450) is spent on food. Shopping is done at local shops, suburban shopping centres or in the city. The majority of households have electricity and in-door plumbing (IMR 1999).

Concluding remarks

Analysis of sample characteristics in terms of age, education attainment, employment level and sources of cooking fuel and water reveals that the study samples can be regarded as representative of settlement types and ethnic groups as found in KwaZulu Natal.

CHAPTER 6:

RESULTS

Chapter six is devoted to the study results as revealed through focus group discussions and individual interviews. These results are presented according to study objectives 2 and 3, namely:

- the appropriateness of the proposed South African FBDGs in terms of consumer comprehension and application of the guidelines among women living in KwaZulu Natal, and
- the compatibility of the proposed South African FBDGs in terms of food categorisation as perceived by women living in KwaZulu Natal and as depicted in the food guides that are commonly used in South Africa for nutrition education.

6.1 OBJECTIVE 2: TO ASSESS THE APPROPRIATENESS OF THE PROPOSED SOUTH AFRICAN FBDGs IN TERMS OF CONSUMER COMPREHENSION AND APPLICATION OF THE GUIDELINES AMONG WOMEN LIVING IN KWAZULU NATAL

Focus group discussions and semi-structured individual interviews were used to investigate the comprehension (understanding and interpretation) and application (ability to put into practice) of the proposed FBDGs by the study participants. A structured topic guide (see Appendix 6) and semi-structured questionnaire (see Appendix 7) were used to assist in eliciting responses from focus group and interview participants, respectively, in terms of the issues listed below:

- previous exposure to and sources of information about concepts conveyed by the proposed FBDGs
- general understanding and specific interpretations regarding concepts, terminology and descriptions used in the proposed FBDGs
- perceived importance of applying each FBDG
- perceived barriers to the application of the proposed FBDGs
- ability to plan a typical day's meals that reflect the proposed FBDGs

The above-mentioned issues were explored in the same order for each proposed FBDG, with one FBDG being examined at a time. The order in which each FBDG was examined is as reported in this chapter, namely: (abbreviations used in this chapter are provided in parenthesis)

- “Enjoy a variety of food” (“Variety”)
- “Be active” (“Be active”)
- “Make starchy foods the basis of most meals” (“Starchy foods”)
- “Eat plenty of fruits and vegetables everyday” (“Fruits/Vegetables”)
- “Eat legumes regularly” (“Legumes”)
- “Foods from animals can be eaten everyday” (“Foods from animals”)
- “Use fat sparingly” (“Fats”)
- “Use salt sparingly” (“Salt”)
- “Drink lots of clean, safe water” (“Water”)
- “If you drink alcohol, drink sensibly” (“Alcohol”)
- “Eat healthier snacks” (“Snacks”)

6.1.1 Previous exposure to and sources of information about concepts conveyed by the proposed FBDGs

Focus group participants were shown one FBDG message at a time (in the same order) and asked whether they had “*heard or read this message before?*” Previous exposure (heard or seen) to the FBDGs, or something similar, is depicted in Table 6.1. Previous exposure and sources of information were not explored among interview participants.

Table 6.1 Previous exposure to the FBDGs as reported by focus group participants

GUIDELINE	DEFINITE EXPOSURE	SOME EXPOSURE	NO EXPOSURE
Variety		all EAs	
Be Active		all EAs	
Starchy Foods			all EAs
Fruits/Vegetables	all EAs		
Legumes			all EAs
Foods From Animals			all EAs
Fats	all EAs		
Salt	all urban EAs		all rural EAs
Water	all urban formal EAs	all urban informal EAs	all rural EAs
Alcohol	all urban EAs		all rural EAs
Snacks			all EAs

(EA – enumerator area)

Four FBDGs were unfamiliar to all focus group enumerator areas (EAs), namely, “Starchy Foods”, “Legumes”, “Foods From Animals”, and “Snacks”. Rural Black participants were also unfamiliar with the “Salt”, “Water” and “Alcohol” guidelines. Rural Black participants were therefore unfamiliar with 7 of the 11 guidelines.

Only two FBDGs were familiar to all focus group EAs, namely, “Fruits/Vegetables” and “Fats”. All urban participants were also familiar with the “Salt” and “Alcohol” guidelines. Urban formal Black participants were familiar with the “Water” guideline, while urban informal Black participants gave a mixed response and rural Black participants were unfamiliar with this guideline. All focus group EAs gave a mixed response to the “Variety” and “Be Active” guidelines.

Focus group participants, who reported exposure to the FBDGs, or something similar, cited numerous sources of information (see Table 6.2). The mass media (in particular, the radio) was a primary source of information for all focus group EAs, followed by clinics and schools. Four FBDGs were unfamiliar to all focus group EAs (namely, “Starchy Foods”, “Legumes”, “Foods From Animals”, and “Snacks”), therefore these FBDGs are not included in Table 6.2.

Table 6.2 Sources of information for FBDGs as reported by focus group participants

SOURCES	GUIDELINES						
	Variety	Be Active	Fruits/ Vegetables	Fats	Salt	Water	Alcohol
Television	X	X	X				X
Radio	X	X	X	X	X	X	
Magazines	X	X	X				
Other							X(#)
Clinic	X	X	X	X	X		
School	X	X	X	X			
Doctor			X	X	X		
Hospital			X	X	X		
Books				X			

(#) – Billboards on main roads and the drink-driving “Arrive Alive” Campaign

6.1.2 General understanding and specific interpretations regarding concepts, terminology and descriptions used in the proposed FBDGs

Focus group participants were asked to give comments regarding each FBDG as a general statement (“*What does this message say to you?*”), and then to interpret specific concepts and phrasing used for each FBDG (“*What does the word [enjoy; variety; plenty; ...] mean to you?*”). Responses were elicited in a non-leading manner.

Interview participants were only asked to comment on their understanding of certain food category names given to the FBDGs (“*What do you understand by the term [variety; starchy foods; fruits; vegetables; legumes; foods from animals; fatty foods; salty foods; water; alcohol; snack foods]?*”). Interview participants were therefore not asked to comment on the “Be active” FBDG in terms of general understanding and interpretations.

Findings are presented below for each of the eleven FBDGs tested. Where quotations are provided, these are specific comments made by focus group participants that reflect the dominant opinion of the focus group discussions.

6.1.2.1 “Enjoy a variety of foods”

The majority of focus group participants understood this guideline in terms of dietary diversity, which to them highlighted the importance of incorporating different food items in the diet. Within this perspective, focus group participants referred to different types of food, different food groups as well as different nutrient groups. Dietary diversity was perceived as being achieved by:

* varying the composition of meals throughout the day

“Different foods on my plate at an actual meal – green, yellow and white veg, with chicken or fish” [urban formal White]

* varying the composition of meals from day to day

“It means one must enjoy different food types from day to day – today I may cook pumpkin, then tomorrow potatoes...” [rural Black]

* varying the method of food preparation (especially where certain foods are inaccessible)

“sometimes it may not be different foods but the same food cooked differently” [rural Black]

“sometimes we eat the same food item prepared in different ways” [urban informal Black]

“the same type of food cooked differently” [urban formal Indian]

Responses obtained from interview participants supported those of focus group discussions, with the majority of interview participants interpreting the word “variety” as meaning “*different types of foods*” (see Table 6.3).

Statements such as “*satisfaction*”, “*liking the food*” and “*being happy*” were used by focus group participants to describe the word “*enjoy*”. A sense of contentment with whatever food one is able to consume was considered important. In addition, having food was imbued with symbolic meaning. Rural Black focus group participants expressed this view most consistently “*We enjoy what we have prepared because we feel lucky to even have food*” [rural Black]

Table 6.3 Interpretations of the word “variety” as reported by interview participants

ENUMERATOR AREAS	% PARTICIPANTS (n=230)		
	“Eating different types of foods”	“Eating different food groups”	“Cooking same foods differently”
Rural Black (n=70)	16.2	62.2	5.4
Urban informal Black (n=40)	88.1	0.0	11.9
Urban formal Black (n=40)	20.0	80.0	0.0
Urban formal Indian (n=40)	64.9	64.9	0.0
Urban formal White (n=40)	34.3	65.7	0.0

6.1.2.2 “Be active”

Interpretations of this guideline by focus group participants reflected two classes of behaviour:

* activity is a conscious attempt to exercise the body

Here, the expressed goal of activity was viewed as improving health, such as going to the gym, walking, running. Being active thus constitutes a separate regime from the rest of the daily routine.

“It means doing serious exercise like push-ups” [urban informal Black]

“...going to the gym rather than working in the garden” [urban formal White]

* activity is incidental to the daily routine

Here, the expressed goal of activity was viewed as completing some task, either in the domestic sphere (household chores) or in employment.

“...fetching fire wood...fetching water from the river” [rural Black]

“...shopping, child-minding, housework, gardening, walking the dogs, mowing the lawn” [urban formal White]

Apart from the specific type of activity, the majority of focus group participants considered the mode of activity (doing it routinely and enthusiastically) as important:

“...make it a habit to engage in an exercise” [rural Black]

“...to get used to doing exercise and to do it all the time” [urban formal Black]

“...doing it briskly, using up energy” [urban formal Indian]

Interview participants were only asked to comment on their understanding of certain food category names given to the FBDGs, and were therefore not asked to comment on the “Be active” FBDG.

6.1.2.3 “Make starchy foods the basis of most meals”

Interpretations of this guideline by focus group participants reflected a concern with:

* quantity of consumption

This was perceived in terms of meal composition, where starch was viewed as making up the larger portion relative to other foods.

“Starch should be the biggest quantity on your plate” [urban informal Black]

“...that when you serve food, the bulk of it should be starch” [rural Black]

* optimal frequencies of consumption

These included:

- consumption with each meal
- consumption with the main (evening) meal only
- consumption with at least one meal

Focus group and interview participants from urban formal EAs understood the phrase “starchy foods” as meaning “*energy foods*” [urban formal Black participants] and “*carbohydrates*” [urban formal Indian and White participants]. Rural and urban informal participants cited specific foods (namely, potatoes, rice, bread, pasta, samp and mealie meal) as a means of explaining the phrase “starchy foods”.

The majority of focus groups interpreted “*meals*” as meaning the three classic “main” meals – breakfast, lunch and dinner. Only one focus group [urban White participants] felt that “*most meals*” referred to dinners only, and that the guideline should therefore be amended to read “all” meals instead of “most” meals.

6.1.2.4 “Eat plenty of fruits and vegetables every day”

All focus group and interview EAs understood the meaning of “fruits” and “vegetables”, citing appropriate food examples as a means of explanation.

Interpretations by focus group participants of the word “*plenty*” emphasised:

* frequency of consumption

“*we should eat...as frequently as possible*” [rural Black]

“*eat different fruit and vegetables everyday*” [urban formal Black]

“*eat enough...everyday, depending on availability*” [urban formal Indian]

* quantity of consumption

“*If you can afford, you should have at least 2 per day*” [rural Black]

“*at least one fruit per day and 1-2 vegetables per day*” [urban formal Black]

“*..3 fruits and 3 vegetables a day..*” [urban formal White]

Numeric values ascribed by focus group participants to the word “*plenty*” ranged from a minimum of 1 fruit and 1 vegetable a day to as many as 5-9 fruits/vegetables a day (see Table 6.4):

Table 6.4 Numeric values ascribed by focus group participants to the word “plenty” in the context of optimal fruit and vegetable consumption

Enumerator Areas	Minimum	Maximum
Rural Black	2 types/day	3 types/day
Urban informal Black	1 vegetable + 1 fruit/day	3 types/day
Urban formal Black	at least 1 vegetable + 1 fruit/day	1-2 vegetables + 1 fruit/day
Urban formal Indian	3 or more vegetables, and less fruit/day	3-4 vegetables + 4 fruit/day
Urban formal White	3 vegetables + 3 fruit/day	5-9 vegetables and/or fruit/day

When interview participants were asked “*How often do you think people should eat fruits and vegetables?*” responses ranged from a minimum of “*whenever available*” or “*once a week*”, to a maximum of “*4-5 times a day*”. The majority of interview participants regarded optimal fruit and vegetable consumption as 1-3 times a day (see Table 6.5):

Table 6.5 Numeric values ascribed by interview participants for optimal fruit and vegetable consumption

ENUMERATOR AREAS	% PARTICIPANTS (n=230)					
	1x/day	2-3x/day	4-5x/day	2-3x/week	1x/week	When available
<i>FRUITS</i>						
Rural Black (n=70)	55.0	27.5	0.0	5.0	10.0	2.5
Urban informal Black (n=40)	42.9	42.9	1.4	0.0	11.4	1.4
Urban formal Black (n=40)	70.0	22.5	0.0	2.5	5.0	0.0
Urban formal Indian (n=40)	90.0	7.5	0.0	2.5	0.0	0.0
Urban formal White (n=40)	62.5	32.5	5.0	0.0	0.0	0.0
Weighted Average	62.90	26.70	1.11	2.39	5.90	1.00
<i>VEGETABLES</i>						
Rural Black (n=70)	50.0	22.5	0.0	5.0	22.5	0.0
Urban informal Black (n=40)	64.3	15.7	0.0	2.9	17.1	0.0
Urban formal Black (n=40)	67.5	20.0	0.0	2.5	10.0	0.0
Urban formal Indian (n=40)	70.0	2.5	7.5	0.0	20.0	0.0
Urban formal White (n=40)	72.5	15.0	10.0	2.5	0.0	0.0
Weighted Average	62.92	16.10	3.04	2.90	15.04	0.00

Overall perceptions between focus group and interview participants as to what constituted sufficient intake of fruits and vegetables were similar, namely, a minimum of 1 fruit and 1 vegetable a day (1x/day).

6.1.2.5 “Eat legumes regularly”

Focus group participants interpreted this guideline to mean that legume consumption was recommended and should be eaten often:

“we must eat these foods” [urban informal Black]

“we should eat beans often” [rural Black]

Focus group and interview participants were able to identify the types of foods classified as legumes, however, the majority stated that the word **“legumes”** was not common. Suggested alternatives included:

“it is better to say ‘different types of beans’” [rural Black]

“..dry beans..” [urban formal Black]

“..vegetables...dry vegetables...anything in a pod..” [urban formal Indian]

“..vegetables...as they are often used in salads..” [urban formal White]

“ pulses, dry beans, split peas, lentils...” [urban formal White]

Focus group participants varied in their perception of the word **“regularly”**. Views ranged from *“often”* to *“once a day”*, *“at least once a week”*, and *“twice to three times a week”*. Interview participants expressed similar views when asked their perceptions of optimal frequency for legume consumption.

Focus group participants (especially Black participants) described two patterns of legume consumption, both of which were largely determined by household access to meat:

* substitution – When household meat supplies are depleted, consumption of legumes is a strategy to maintain dietary diversity.

“we eat them on days when there is no meat” [rural Black]

“..add variety to the food you eat especially when there is no meat” [urban informal Black]

“they are a better replacement for red meat as they have no cholesterol – better for your heart” [urban formal White]

* supplementation – When the cost of meat is relatively high, legumes are prepared as a supplement to meals which may already contain meat thereby extending this valuable food source.

“ you can also use them to make the meat more..” [urban informal Black]

“..use soya mince to extend meat/mince dishes..” [urban formal White]

6.1.2.6 **“Foods from animals can be eaten every day”**

General interpretations of this guideline by focus group participants included:

* that “foods from animals” are of nutritive value to the body

“these foods are good for your body” [urban informal Black]

“they are high in protein” [urban formal Indian]

* that diversity in consumption of these foods was being encouraged

“different animal products may be used daily” [rural Black]

The majority of focus group and interview participants found the phrase **“foods from animals”** confusing, and suggested the use of appropriate food examples instead. When interview participants were asked about the inclusion of dairy products (milk, yoghurt, cheese) together with meat products in this guideline, the majority were in favour of this (see Table 6.6):

Table 6.6 Inclusion of dairy products in the “foods from animals” FBDG as reported by interview participants

ENUMERATOR AREAS	% PARTICIPANTS (n=230)		
	“Include dairy products with foods from animals?”		
	“Yes”	“No”	Reasons why “No”
Rural Black (n=70)	97.5	2.5	“not same as meat”
Urban informal Black (n=40)	92.9	7.1	“not same as meat”
Urban formal Black (n=40)	90.0	10.0	“not a body-building food”
Urban formal Indian (n=40)	87.5	12.5	“dairy provides calcium – meat doesn’t”
Urban formal White (n=40)	92.5	7.5	“different nutrients in dairy”
Weighted Average	92.79	7.21	

The majority of focus group participants interpreted the advice “*can be eaten everyday*” as flexible and non-prescriptive.

“It does not necessarily mean the products should be eaten all the time” [urban informal Black]

“We can eat them everyday, but we don’t have to if we don’t want to” [rural Black]

“It means I can eat them as long as they are available and also it is not necessary to have them all the time” [urban formal Black]

“These foods may be eaten everyday, but it is not essential..” [urban formal White]

A few urban formal Indian and White focus group participants, however, interpreted this advice as meaning that these foods *must* be eaten everyday, which conflicted with nutritional information they had been exposed to previously.

“..eating these foods everyday is seen as not so healthy..”

“..have heard too much red meat is not good..”

“People are becoming very conscious about the fat and cholesterol contents of foods.”

6.1.2.7 “Use fat sparingly”

The primary interpretation of this guideline by focus group EAs was in terms of using minimal amounts of fat in food preparation:

“When you cook your food you shouldn’t add too much fat” [urban informal Black]

“If you are cooking meat, you don’t need to put fat because it has fat..” [urban formal Black]

“Don’t add too much fat when cooking” [rural Black]

“Use different cooking methods that don’t use fat - like boiling, grilling..” [urban formal Indian]

“Use less oil for cooking” [urban formal White]

Urban formal Indian and White focus group EAs interpreted this guideline as also meaning that the fat content of food should be considered:

"..buy lean meat" [urban formal Indian]

"..foods with a low or no fat content are better" [urban formal White]

Interpretations by interview participants were similar to those of the focus groups, with only urban formal Indian and White participants also interpreting "*fatty foods*" as including "*foods that contain fat*".

All focus group EAs interpreted the word "*sparingly*" as meaning "*use less*" or "*use a little*". Urban formal White focus group participants felt that the guideline was too vague and wanted precise quantities for "*what is regarded as too much*". They also expressed a view that perhaps not all fats are harmful, and that it is the type of fat, namely, animal fat and cholesterol, that causes health problems.

One hundred and seventy-eight interview participants (77.4%) stated that they felt people should eat fatty foods. When these participants were asked "*How often do you think a person should eat fatty foods?*" open-ended responses indicated a perception that fatty foods should be eaten "in moderation" and "as part of a balanced diet" (see Table 6.7):

Table 6.7 Interpretations of how often fatty foods should be eaten as reported by interview participants who stated that they thought people should eat fatty foods

ENUMERATOR AREAS	% PARTICIPANTS (n=178)		
	"daily in small amounts"	"seldom/occasionally"	"1-3x/week"
Rural Black (n=65)	80.0	4.6	15.4
Urban informal Black (n=32)	68.8	3.1	28.1
Urban formal Black (n=34)	64.7	5.9	29.4
Urban formal Indian (n=21)	19.1	19.1	61.9
Urban formal White (n=26)	76.9	11.5	11.5
Weighted Average	67.43	7.30	25.27

6.1.2.8 "Use salt sparingly"

Focus group EAs interpreted this guideline primarily as advice against the excessive use of salt (including seasonings with a high salt content, such as stock cubes, soup powders, Aromat, Oxo, Marmite, tomato sauce, soya mince) when preparing and cooking food:

"It means using less salt" [urban informal Black]

"We should use less salt or no salt at all if we are adding stock cubes" [rural Black]

"..can use salt, but use little and not too often" [urban formal Indian]

Urban formal White focus group participants also interpreted this guideline as advice to reduce excessive consumption of all foods considered to have a high salt content (such as "biltong", nuts, chips, popcorn, salted meats such as bacon).

One hundred and ninety-one interview participants (83.0%) stated that they felt people should eat salty foods. When these participants were asked "*How often do you think a person should eat salty foods?*" open-ended responses also indicated a perception that salty foods should be eaten "sparingly" (see Table 6.8):

Table 6.8 Interpretations of how often salty foods should be eaten as reported by interview participants who stated that they thought people should eat salty foods

ENUMERATOR AREAS	% PARTICIPANTS (n=191)		
	"daily in small amounts"	"seldom/occasionally"	"1-3x/week"
Rural Black (n=65)	86.2	4.6	9.2
Urban informal Black (n=37)	81.2	5.4	13.5
Urban formal Black (n=35)	82.9	8.6	8.6
Urban formal Indian (n=26)	57.7	19.2	23.1
Urban formal White (n=28)	53.6	14.3	32.1
Weighted Average	75.97	8.90	15.17

6.1.2.9 "Drink lots of clean, safe water"

Focus group EAs interpreted this guideline as advice to drink sufficient water that is free from contamination.

"..*drink adequate water*" [rural Black]

"..*don't drink water that is dirty and has germs*" [rural Black]

Urban formal White focus group participants queried the use of other fluids in place of water, such as tea, coffee, fruit juice, milk and cool drinks, as well as foods with a high water content, such as salads and soup.

100% (n=230) of interview participants stated that they felt people should drink water. When participants were asked "*How often do you think a person should drink water?*" open-ended responses indicated a perception that water should be consumed "daily".

Numeric values ascribed to the word "**lots**" ranged from 6-12 glasses/day (1-2litres/day) for focus group participants, 4-8 glasses/day for urban formal interview participants and 1-8 glasses/day for urban informal and rural interview participants (see Table 6.9):

Table 6.9 Numeric values ascribed to the word “lots” in the context of optimal water consumption

Enumerator Areas	Focus groups	Interviews
Rural Black	12 glasses	1-8 glasses
Urban informal Black	8 glasses	1-8 glasses
Urban formal Black	6 glasses (1 litre)	4-8 glasses
Urban formal Indian	6-8 glasses (1-2 litres)	4-8 glasses
Urban formal White	6-10 glasses (2 litres)	4-8 glasses

Overall perceptions between focus group and interview participants as to what constitutes sufficient intake of water were similar for urban formal enumerator areas, namely, 4-10 glasses/day. Urban informal and rural focus group participants reported higher optimal intakes (8-12 glasses/day) than their interview counterparts (1-8 glasses/day).

6.1.2.10 “If you drink alcohol, drink sensibly”

This guideline was conceptualised by focus group EAs in terms of the social consequences of excessive alcohol consumption. Excessive alcohol consumption was perceived as altering behaviour and causing problems in the domestic and work spheres. People who consumed excessive quantities of alcohol were perceived as highly disruptive.

“People who drink too much disturb the community and their families” [rural Black]

“If you don’t drink sensibly then you can lose a job...” [urban informal Black]

“Alcohol causes bad behaviour and unnecessary accidents” [urban formal Indian]

“In South Africa alcohol seems to be a problem especially with men” [urban formal White]

In addition, focus group EAs were concerned with the normalisation of excessive alcohol consumption within their communities, and the socio-economic effects of this:

“..alcohol is not drunk sensibly..and it has become a way of life..” [urban formal Black]

“It uses up money, then there is no food for the children” [urban formal Indian]

Urban formal White focus group participants also highlighted the physiological effects of excessive alcohol consumption:

“liver cirrhosis..” [urban formal White]

“..alcohol depletes the body of certain nutrients” [urban formal White]

“..it has a lot of calories” [urban formal White]

Focus group EAs understood the word **“alcohol”** to mean:

“..liquor..” [rural Black]

“..to be drunk in small amounts..” [urban informal Black]

“..a drug..” [urban formal Black]

“..drinks of no use for the body....medicines..” [urban formal Indian]

“..drinks to be consumed in moderation..” [urban formal White]

Interpretations of appropriate alcohol consumption (**“drinking sensibly”**) were both qualitative (non-numeric, descriptive) and quantitative (numeric).

Qualitative (non-numeric) descriptions were provided predominantly by focus group participants who emphasised the social consequences of excessive alcohol consumption, namely, Indian and Black participants. Discussions were less pre-occupied with specifying appropriate quantities for consumption, regarding this as a matter of individual discretion and self-regulation.

"..drink occasionally" [rural Black]

"..do not overdo it.." [rural Black; urban formal Black]

"..don't drink to get drunk" [rural Black; urban formal Indian]

"..drink less" [urban informal Black]

"..not to drink too much at a time" [urban informal Black; urban formal White]

"..drink in moderation" [urban formal White]

"..drink using a small glass and sharing with friends.." [urban informal Black]

"..take limited quantities.." [urban formal Black]

"..drink when it is suitable...not at work" [urban informal Black]

"..there's a time and place for drinking alcohol...socially at a party.." [urban formal Indian]

Quantitative (numeric) descriptions were provided predominantly by urban formal White focus group participants, who emphasised the physiological effects of excessive alcohol consumption. These participants were more inclined to give specific quantities and precise directives for what they considered appropriate consumption, and to rely on external forms of regulation (drink driving legislation). These participants also tended to view social drinking and the drinking of alcohol with meals (in particular the evening meal) in a more positive light than participants from other enumerator areas.

"..not more than 3 measures at a time" [urban formal White]

"..1-2 drinks a day" [urban formal White]

"..don't drink more than 2 alcoholic drinks in a day" [urban formal White]

"..one glass every night with meals" [urban formal White]

"..drink within the driving limits" [urban formal White]

" occasionally – not daily" [urban formal Black]

Some focus group participants felt that a limitation to the general understanding of this guideline was the use of the phrase ***"drink sensibly"*** which was open to various interpretations:

"I would rather say 'don't drink'..." [urban formal Indian]

"...rather use the words 'limit', 'reduce', 'use sparingly'...." [urban formal White]

"This is not clear because people may interpret differently....need to put a quantity to it, but not sure what..." [rural Black]

Responses from interview participants when asked *"How often do you think a person should drink alcohol?"* revealed similar findings to those of focus group participants, namely, that alcohol should be consumed "in moderation", "occasionally" and "once a week". 42.9% of rural Black interview participants were unsure as to a specific quantity of alcohol (see Table 6.10):

Table 6.10 Interpretations of how often alcohol should be consumed as reported by interview participants who stated that they thought people should consume alcohol

ENUMERATOR AREAS	% PARTICIPANTS (n=47)			
	“in moderation – 1-2 glasses/day”	“occasionally – once a week”	“2-3x/week”	“unsure”
Rural Black (n=12)	28.6	14.3	0.0	42.9
Urban informal Black (n=5)	37.5	37.5	12.5	12.5
Urban formal Black (n=7)	14.3	85.7	0.0	0.0
Urban formal Indian (n=7)	14.3	85.7	0.0	0.0
Urban formal White (n=16)	50.0	31.3	18.8	0.0
Weighted Average	32.57	43.82	7.73	12.28

6.1.2.11 “Eat healthier snacks”

For both focus group and interview EAs, the word “*snacks*” was interpreted predominantly as “foods eaten between meals”, “treats”, “luxury foods” and “light foods/meals”:

“..foods..not essential for health...just for enjoyment” [rural Black]

“..eaten whenever you feel like something nice, especially when you are in town” [rural Black]

“..foods to be eaten in-between meals” [urban informal Black]

“..light meals...foods...that do not really fill you up” [urban formal Black]

“..these should not replace main meals ...and they should be eaten in small quantities..” [urban formal Indian]

“foods that are not part of a main meal...” [urban formal White]

“..junk foods...” [urban formal White and Indian]

A common interpretation of this guideline for both focus group and interview EAs was that “snacks” were of little nutritional value and were therefore regarded as “unhealthy”. The concept of “*healthier*” snacks was therefore difficult for participants to comprehend.

Black focus group participants did not see the need to differentiate between “healthy” and “unhealthy” snack foods as consumption of snack foods was an optional extra, especially when income was limited.

“..we don’t eat them regularly unless we go to funerals or we have a little bit of money to spare..” [rural Black]

“..we only ever eat cakes, biscuits, chips on special occasions and at parties..” [urban informal Black]

“..the issue is money ...these foods are not essential...we use them as treats..” [urban formal Black]

Urban formal Indian focus group participants interpreted “healthier” snacks as foods with a low fat and low sugar content. They emphasised that snacks should not replace main meals and should be consumed in small quantities. They did not consider the option of purchasing ‘modified’ snacks with a reduced fat, salt or sugar content. In contrast, urban formal White focus group participants suggested a host of ‘modified’ snacks as “healthier” snacks, such as low fat chips, low fat cottage cheese, popcorn and rice cakes.

Responses from interview participants when asked “*How often do you think a person should eat snack foods?*” revealed similar findings to those of focus group participants, namely, that suggested consumption depended on the role that snack foods were perceived to play in the diet. Suggestions ranged from “*once a day*” to “*2-3x/day*”, “*1-4x/week*” and “*in moderation*”.

6.1.3 Perceived importance of applying each FBDG

Focus group participants were encouraged to discuss whether they felt “*.. it important to [enjoy a variety of foods; be active; ...]?*”. “Yes” and “No” responses were probed further in terms of “*Why do you say this?*” and “*What do you mean by this?*”. Interview participants were asked “*Do you think a person should [enjoy a variety of foods; be active; ...]?*”. “Yes” and “No” responses were probed further in terms of “*Why do you say this?*”.

Findings are outlined below for each of the eleven FBDGs tested. Where quotations are provided, these are specific comments made by focus group participants that reflect the dominant opinion of the focus group discussions. When interpreting tabulated responses from interview participants, it should be remembered that participants were permitted to give multiple responses.

6.1.3.1 “Enjoy a variety of foods”

The dominant themes emerging from focus group discussions indicate that participants endorsed the importance of this guideline, citing the following reasons:

* the accommodation of household taste preferences

“*It is important for the enjoyment of meals and the harmony in the house*” [rural Black]

“*It is important to accept other people’s likes and dislikes*” [urban informal Black]

“*You have to cook a variety to keep everyone in the family happy*” [urban formal Indian]

* the nutritive value of incorporating a variety of foods in the diet

“*The body needs different food types to provide different nutrients*” [urban formal Black]

“*There are different substances in other foods that are very good for us..*” [urban formal Indian]

“*For health reasons...each food provides different nutrients*” [urban formal White]

* the enjoyment of eating through the incorporation of different tastes

“*You must have a taste of different things, otherwise it is boring*” [urban formal Indian]

“*Eating will be boring otherwise*” [urban formal White]

Two hundred and sixteen interview participants (93.9%) stated that they felt people should eat a variety of foods. When these participants were asked “*Why do you say this?*” open-ended responses indicated a perception that variety would improve the nutritional value of the diet, alleviate boredom (enhance enjoyment), and to a lesser degree, reduce hunger (see Table 6.11):

Table 6.11 Interpretations of why the “variety” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=216)		
	“improve nutritional value”	“reduce boredom with meals”	“reduce hunger”
Rural Black (n=66)	63.1	34.2	2.6
Urban informal Black (n=40)	85.7	30.0	0.0
Urban formal Black (n=35)	77.1	22.9	2.9
Urban formal Indian (n=36)	52.8	47.2	0.0
Urban formal White (n=39)	76.9	33.3	0.0
Weighted Average	70.33	33.60	1.26

6.1.3.2 “Be active”

The majority of focus group participants were in favour of this guideline in terms of health-related outcomes. A wide range of reasons were given for the need to be active, namely:

* improving general health through fitness

“*The body will be strong*” [rural Black]

“*It gives your body life and vigour*” [urban informal Black]

“*To improve the blood circulation, avoid being lethargic..*” [urban formal Indian]

“*..for health reasons, makes you feel better, for physical well being..*” [urban formal White]

* increasing resistance to illness

“*If you are not active you can easily get ill*” [rural Black]

“*..when you are not j̄it you easily get sick..*” [urban informal Black]

“*If you don’t you will easily get sick*” [urban formal Black]

“*...there are different diseases like high blood pressure and heart problems, if one does not exercise the body gets weak and it is easy to get the diseases*” [urban formal Black]

* weight reduction

“*If you are always sleeping you will get diseases and you can also get fat.*” [urban informal Black] “*Helps with weight loss*” [urban formal Indian]

* improving one's mental state

"It make you feel good after a long day" [urban informal Black]

"It is important – to be healthy, makes you strong, cheerful.." [urban formal Indian]

".. for mental well being, give you a break time to be alone.. stress relief.." [urban formal White]

Interview participants were only asked to comment on their understanding of certain food category names given to the FBDGs, and were therefore not asked to comment on the "Be active" FBDG.

6.1.3.3 "Make starchy foods the basis of most meals"

Focus group participants perceived starchy foods as a valuable contribution to the diet in terms of:

- providing variety and balance to the diet [rural Black; urban formal White]
- providing energy [all focus groups]
- satiation (more than other foods) [urban informal and formal Black; urban formal White]
- being relatively cheap in comparison to other foods [urban formal Black]

One hundred and ninety-eight interview participants (86.1%) stated that they felt people should make starchy foods the basis of most meals. When these participants were asked *"Why do you say this?"* open-ended responses highlighted similar reasons to those provided by focus group participants (see Table 6.12).

Table 6.12 Interpretations of why the "starchy foods" FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=198)				
	"provides variety/balance"	"provides energy"	"satiating"	"a staple food"	"provides strength"
Rural Black (n=61)	35.0	7.5	20.0	0.0	17.5
Urban informal Black (n=33)	42.8	12.9	5.7	7.1	10.0
Urban formal Black (n=36)	15.0	27.5	20.0	12.5	0.0
Urban formal Indian (n=29)	40.0	5.0	0.0	0.0	0.0
Urban formal White (n=39)	35.0	37.5	0.0	0.0	0.0
Weighted Average	33.40	17.58	10.75	3.46	7.06

Main reasons cited by focus group participants for not including starchy foods in the diet revolved around uncertainty as to whether:

- these foods caused bloating/oedema [rural Black]
- starch consumption would lead to weight gain [urban formal Black, Indian and White]
- a person with diabetes could eat starchy foods [urban formal Black and Indian]
- it was healthy to eat starch and protein together (“food combining”) [urban formal White]

13.9% of interview participants shared the above sentiments, especially by urban formal Indian participants who were mainly concerned with a high starchy food intake in relation to Diabetes Mellitus.

6.1.3.4 “Eat plenty of fruits and vegetables every day”

Focus group participants recognised the importance of this guideline in terms of general health (“*good for the body and skin*”) and preventing diseases (“*resistance to illness*”). They interpreted this guideline to mean that there were positive health-related outcomes associated with eating fruits and vegetables.

“*..these foods are good for our health...*” [urban informal Black]

“*...natural sugar and vitamins....good for the body and skin..*” [urban formal Indian]

“*..provide roughage...vitamins and minerals...and natural sugar..*” [urban formal White]

99.6% (n=229) and 100% (n=230) of interview participants stated that they felt people should eat plenty of fruits and vegetables, respectively. When these participants were asked “*Why do you say this?*” open-ended responses highlighted a variety of health-related reasons, many of which were similar to those cited by focus group participants (see Table 6.13).

Only one interview participant stated that people should not eat fruit as “*some fruits produce bile*” [urban informal Black].

6.1.3.5 “Eat legumes regularly”

Attitudes to legume consumption were very positive among the majority of focus group participants, with legumes being regarded as a valuable contribution to the diet for their:

- nutritional value (protein, vitamins, low fat) [cited by all focus groups as the primary motivation for including legumes in the diet]
- relative cheapness [rural and urban informal Black]
- perceived ability to satiate [urban informal Black]
- use as a meat substitute and/or supplement [rural, urban informal and urban formal Black]

Similar sentiments were expressed by interview participants, of which 93% (n=213) stated that they felt people should eat legumes regularly (see Table 6.14).

Only 7% of interview participants (all urban) cited reasons for not eating legumes regularly. Responses included “*personal preference*” [urban formal Indian and White], “*not essential....can eat meat*” [urban formal White], “*fattening*” [urban formal White] and that “*they cause heartburn....gas..*” [urban informal Black; urban formal Indian].

Table 6.13 Interpretations of why the “fruits/vegetables” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	FRUITS - % PARTICIPANTS (n=229)				
	“healthy”	“builds body”	“fibre”	“energy”	“vitamin C”
Rural Black (n=70)	65.0	22.5	0.0	2.5	0.0
Urban informal Black (n=39)	64.3	21.4	0.0	4.3	11.4
Urban formal Black (n=40)	67.5	10.0	5.0	7.5	22.5
Urban formal Indian (n=40)	10.0	0.0	10.0	0.0	0.0
Urban formal White (n=40)	97.5	0.0	5.0	5.0	0.0
Weighted Average	61.39	12.27	3.49	3.68	5.87
ENUMERATOR AREAS	VEGETABLES - % PARTICIPANTS (n=230)				
	“healthy”	“builds body”	“fibre”	“energy”	“vitamin C”
Rural Black (n=70)	70.0	25.0	0.0	5.0	0.0
Urban informal Black (n=40)	74.3	24.3	0.0	0.0	0.0
Urban formal Black (n=40)	67.5	27.5	0.0	15.0	0.0
Urban formal Indian (n=40)	100.0	0.0	5.0	0.0	0.0
Urban formal White (n=40)	100.0	0.0	7.5	0.0	0.0
Weighted Average	80.75	16.62	2.17	4.13	0.00

Table 6.14 Interpretations of why the “legumes” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=213)						
	“healthy”	“builds body”	“energy”	“fibre”	“satiating”	“personal preference”	“economical/replaces meat”
Rural Black (n=70)	40.0	20.0	2.5	0.0	0.0	0.0	10.0
Urban informal Black (n=39)	47.1	25.7	7.1	0.0	2.9	2.9	10.0
Urban formal Black (n=40)	47.5	22.5	10.0	0.0	0.0	5.0	15.0
Urban formal Indian (n=35)	35.0	22.5	2.5	5.0	0.0	17.5	0.0
Urban formal White (n=30)	37.5	20.0	5.0	17.5	5.0	0.0	0.0
Weighted Average	41.72	22.02	5.11	3.29	1.24	4.35	7.93

6.1.3.6 “Foods from animals can be eaten every day”

Focus group participants acknowledged the importance of this guideline mainly in terms of the physiological (health) benefits associated with consuming these foods:

“..to build our blood” [rural Black]

“..they build muscles” [urban informal Black]

“..have different vitamins and things like calcium” [urban formal Black]

“..they also have vitamins” [urban formal Indian]

“..they provide protein, iron, calcium and other nutrients” [urban formal White]

Similar sentiments were expressed by interview participants, of which 98.7% (n=227) stated that they felt people can eat foods from animals every day (see Table 6.15).

The 1.3% of interview participants [urban formal Indian and White] who stated that foods from animals did not need to be eaten every day explained that these foods can be high in fat and should therefore be eaten “*only in moderation*”.

Table 6.15 Interpretations of why the “foods from animals” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=227)			
	“healthy”	“for growth”	“for energy”	“personal preference”
Rural Black (n=70)	50.0	35.0	12.5	5.0
Urban informal Black (n=40)	70.0	35.7	5.7	7.1
Urban formal Black (n=40)	35.0	55.0	7.5	2.5
Urban formal Indian (n=38)	30.0	57.5	0.0	10.0
Urban formal White (n=39)	25.0	55.0	0.0	17.5
Weighted Average	43.24	45.85	6.18	7.91

6.1.3.7 “Use fat sparingly”

Focus group participants perceived this guideline as important, acknowledging that health risks are associated with excessive fat consumption, in particular, high blood pressure, heart problems and weight problems.

“..fats cause heart problems and have an effect on blood pressure “ [rural Black]

“It causes high blood pressure, increase the heart beat..” [urban informal Black]

“Fats causes diseases or illnesses like high blood pressure or heart problems” [urban formal Black]

“Fat will affect your high blood pressure” [urban formal Indian]

“We’ve been told to reduce the fat content to prevent weight gain...reduce cholesterol..” [urban formal White]

77.4% (n=178) of interview participants stated that they felt people could eat fatty foods, although 43.74% of these participants explained that this should be done "*in moderation*" and "*as part of a balanced diet*" (see Table 6.16).

Table 6.16 Interpretations of why the "fats" FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=178)			
	"in moderation/ balance"	"for energy"	"for flavour"	"for cooking"
Rural Black (n=65)	27.5	5.0	17.5	2.5
Urban informal Black (n=32)	52.9	4.3	21.4	0.0
Urban formal Black (n=34)	62.5	2.5	7.5	5.0
Urban formal Indian (n=21)	45.0	2.5	0.0	2.5
Urban formal White (n=26)	47.5	7.5	7.5	0.0
Weighted Average	43.74	4.47	12.77	2.16

22.6% of interview participants stated that fatty foods should not be eaten as these foods were "*unnecessary*", "*fattening*", "*unhealthy*" and "*caused heart disease*" (see Table 6.17).

Table 6.17 Reasons why "fatty foods" should not be eaten as reported by interview participants

ENUMERATOR AREAS	% PARTICIPANTS (n=52)			
	"unnecessary"	"fattening"	"unhealthy"	"cause heart disease"
Rural Black (n=5)	0.0	0.0	5.0	35.0
Urban informal Black (n=8)	0.0	0.0	0.0	5.0
Urban formal Black (n=6)	2.5	5.0	5.0	15.0
Urban formal Indian (n=19)	0.0	0.0	37.5	0.0
Urban formal White (n=14)	0.0	2.5	30.0	15.0
Weighted Average	0.29	1.25	22.84	9.90

6.1.3.8 “Use salt sparingly”

Focus group participants agreed to the importance of this guideline in terms of the potential physiological harmful effects of excessive salt consumption, such as high blood pressure, heart disease, kidney disease and swelling of the knees and feet.

“Salt is not good for our heart” [rural Black]

“I don’t use too much salt because of my high blood pressure” [urban informal Black]

“If you use lots of salt it will dry your kidneys” [urban informal Black]

“..to prevent water retention” [urban formal White]

A few urban formal Indian and White focus group participants were uncertain about this guideline and perceived it as:

- restricting the use of salt completely

“..isn’t salt good for preventing cramps?” [urban formal White]

“..doesn’t salt prevent cramping?” [urban formal Indian]

- targeting people with special health conditions

“My husband uses a lot, but then he doesn’t have any blood pressure problems” [urban formal Indian]

83.0% (n=191) of interview participants stated that they felt people could eat salty foods, although the majority of these participants explained that this should be done *“sparingly”* (see Table 6.18).

Table 6.18 Interpretations of why the “salt” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=191)	
	“body needs it”	“for taste/flavour”
Rural Black (n=65)	30.0	47.5
Urban informal Black (n=37)	35.7	40.0
Urban formal Black (n=35)	32.5	37.5
Urban formal Indian (n=26)	22.5	10.0
Urban formal White (n=28)	35.0	17.5
Weighted Average	31.27	34.71

17.0% (n=39) of interview participants stated that salty foods should not be eaten as these foods were *“unnecessary”*, *“unhealthy”*, *“caused high blood pressure”*, *“were harmful for the kidneys”* and *“caused oedema”* (see Table 6.19).

Table 6.19 Reasons why “salty foods” should not be eaten as reported by interview Participants

ENUMERATOR AREAS	% PARTICIPANTS (n=39)				
	“unnecessary”	“unhealthy”	“high blood pressure”	“harm kidneys”	“oedema”
Rural Black (n=5)	0.0	12.5	10.0	0.0	0.0
Urban informal Black (n=3)	1.4	4.3	4.3	0.0	0.0
Urban formal Black (n=5)	0.0	2.5	10.0	0.0	0.0
Urban formal Indian (n=14)	0.0	0.0	30.0	20.0	0.0
Urban formal White (n=12)	5.0	25.0	15.0	0.0	2.5
Weighted Average	1.65	9.95	18.28	7.18	0.77

6.1.3.9 “Drink lots of clean, safe water”

The majority of focus group participants recognised the importance of this guideline in terms of general health:

“*Water helps to flush the kidneys*” [rural Black]

“*..it {water} cleans the body and kidneys*” [urban informal Black]

“*..the body needs plenty of water as we lose water through sweating*” [urban formal Black]

“*..it {water} cleans the system...your blood....good for the skin and body*” [urban formal Indian]

“*..to prevent dehydration..helps with constipation..*” [urban formal White]

“*..it might help me lose weight*” [urban formal White and Indian]

52.6% (n=121) of interview participants (predominantly Black participants) regarded water as a food, whilst 47.4% (n=109) of interview participants (predominantly Indian and White participants) did not. Reasons cited for these opinions are presented in Table 6.20:

Table 6.20 Reasons why “water” is/is not regarded as a food as reported by interview participants

ENUMERATOR AREAS	WATER A FOOD - % PARTICIPANTS (n=121)		
	“need it to survive”	“healthy”	“for cooking”
Rural Black (n=49)	46.4	21.4	25.0
Urban informal Black (n=20)	20.0	25.7	28.6
Urban formal Black (n=28)	21.4	46.4	21.4
Urban formal Indian (n=14)	64.3	12.5	0.0
Urban formal White (n=10)	80.0	20.0	0.0
Weighted Average	41.10	26.75	19.80
	WATER NOT A FOOD - % PARTICIPANTS (n=109)		
	“contains no nutrients”	“cannot be eaten”	
Rural Black (n=21)	41.7	41.7	
Urban informal Black (n=20)	54.3	37.1	
Urban formal Black (n=12)	21.4	66.7	
Urban formal Indian (n=26)	19.2	80.8	
Urban formal White (n=30)	26.7	73.3	
Weighted Average	32.28	61.63	

Despite the difference in opinions about water being a food or not, 100% (n=230) of interview participants stated that they felt people should drink water, predominantly because it is “*healthy*” and “*purifies the body*” (see Table 6.21).

Table 6.21 Interpretations of why the “water” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=230)					
	“healthy”	“purify body”	“prevent dehydration”	“aid digestion”	“aid weight loss”	“reduce hunger”
Rural Black (n=70)	70.0	0.0	15.0	0.0	0.0	7.5
Urban informal Black (n=40)	54.3	18.6	8.5	0.0	0.0	1.4
Urban formal Black (n=40)	20.0	67.5	12.5	0.0	0.0	0.0
Urban formal Indian (n=40)	100.0	25.0	10.0	5.0	0.0	0.0
Urban formal White (n=40)	52.5	42.5	15.0	5.0	2.5	0.0
Weighted Average	60.75	26.71	12.57	1.74	0.43	2.53

6.1.3.10 “If you drink alcohol, drink sensibly”

As previously reported, all focus group EAs regarded this guideline as important in terms of the social consequences of excessive alcohol consumption, causing problems in the domestic and work spheres. Urban formal White focus group participants also highlighted the physiological effects of excessive alcohol consumption:

7.0% (n=16) of interview participants regarded alcohol as a food because:

- “it provides energy” [urban formal White]
- “it makes you feel full” [urban informal Black]
- “it goes via the mouth” [rural and urban formal Black]

No urban formal Indian interview participants regarded alcohol as a food.

The majority of interview participants (93.0%) did not regard alcohol as a food, but rather as a “luxury” that was “unhealthy” and/or “unnecessary...habit forming”.

20.4% (n=47) of interview participants stated that they felt people could drink alcohol as it was “enjoyable”, “relaxing” and “socially acceptable”, but the majority of these participants explained that this should be done “in moderation” (see Table 6.22).

79.6% (n=183) of interview participants stated that alcohol should not be consumed as it was “unhealthy”, “unnecessary...a drug”, “causes problems socially” and “against my religion” (see Table 6.22).

Table 6.22 Reasons why “alcohol” should not be consumed as reported by interview participants

ENUMERATOR AREAS	% PARTICIPANTS (n=183)			
	“unhealthy”	“unnecessary”	“causes problems socially”	“against religion”
Rural Black (n=58)	63.6	12.1	12.1	0.0
Urban informal Black (n=35)	20.9	22.6	19.4	0.0
Urban formal Black (n=33)	60.7	15.2	12.1	3.0
Urban formal Indian (n=33)	93.9	0.0	15.2	3.0
Urban formal White (n=24)	62.5	25.0	16.7	0.0
Weighted Average	60.23	14.18	14.66	1.08

6.1.3.11 “Eat healthier snacks”

All focus group EAs expressed uncertainty about the importance of this message.

For rural and urban informal Black focus group participants, where disposable household incomes are limited (and sometimes even the regularity of main meals uncertain) the purchasing of such “luxury” food items was accorded very low priority. A premium was placed on foods that were satiating, and snacks were therefore regarded as “luxuries” (“*not essential...we can do without them*”), and confined to special occasions (parties, weddings, funerals) or when there was “*a little bit of money to spare*”.

For all urban formal focus group participants, snacks were regarded as “treats” (chocolates, sweets, cakes) and/or “desserts” (ice cream, custard, jelly) that should be “*eaten on occasion*”.

82.8% (n=189) of interview participants stated that they felt people could eat snack foods (see Table 6.23).

17.8% (n=41) of interview participants stated that snack foods should not be eaten as these foods “*unhealthy*”, “*unnecessary junk foods*”, “*are fattening*”, “*expensive*”, and “*spoil the appetite*” (see Table 6.24).

Table 6.23 Interpretations of why the “snacks” FBDG is important as reported by interview participants who stated that they thought people should follow this guideline

ENUMERATOR AREAS	% PARTICIPANTS (n=189)					
	“curbs appetite”	“can be healthy”	“enjoyable/ tastes good”	“for kids”	“gives diet variety”	“no effort to prepare”
Rural Black (n=56)	32.5	27.5	12.5	5.0	0.0	0.0
Urban informal Black (n=34)	32.9	24.3	15.7	0.0	0.0	0.0
Urban formal Black (n=37)	25.0	17.5	15.0	2.5	2.5	7.5
Urban formal Indian (n=35)	22.5	7.5	30.0	7.5	0.0	0.0
Urban formal White (n=27)	40.0	12.5	15.0	0.0	2.5	0.0
Weighted Average	30.32	19.12	17.16	3.36	0.85	1.47

Table 6.24 Reasons why “snack foods” should not be eaten as reported by interview participants

ENUMERATOR AREAS	% PARTICIPANTS (n=41)				
	“unhealthy”	“unnecessary”	“fattening”	“expensive”	“spoils appetite”
Rural Black (n=14)	7.5	0.0	0.0	0.0	0.0
Urban informal Black (n=6)	4.3	0.0	0.0	1.4	0.0
Urban formal Black (n=3)	5.0	0.0	0.0	7.5	0.0
Urban formal Indian (n=5)	2.5	15.0	7.5	2.5	0.0
Urban formal White (n=13)	17.5	12.5	15.0	0.0	2.5
Weighted Average	9.41	5.79	5.67	1.06	0.79

6.1.4 Perceived barriers to the application of the proposed FBDGs

The ability of focus group participants to apply the FBDGs was discussed in terms of the extent to which participants felt they and/or their family already applied any of the FBDGs, perceived barriers to the application of any of the FBDGs, and any suggestions as to how the FBDGs could be applied.

Participants were asked “Do you and your family [enjoy a variety of foods;....]?”. “Yes” responses were probed further by asking “How do you do this?”. “No” responses were probed further by asking a series of probing questions - “Why do you say this? What are some of your reasons for feeling the way you do? What do you mean by this (asked for each reason given)? If you weren’t concerned about these, would you and your family [enjoy a variety of foods;...]? If No, why do you say this? What to you mean by this?”.

Findings are presented below for each of the eleven FBDGs tested and are summarised in Table 6.25. Where quotations are provided, these are specific comments made by focus group participants that reflect the dominant opinion of the focus group discussions.

6.1.4.1 General overview

For all focus group EAs, affordability was the greatest limiting factor to the achievement of variety in the diet. For Black participants, in particular, consumption of fruits, vegetables, foods from animals, and snack foods decreased when disposable incomes were small. Where cooking fuel was an expensive resource (mostly rural and urban informal Black participants), affordability also limited legume (specifically dry bean) consumption. Among rural and urban informal Black participants, when affordability limited intakes of foods from animals (in particular, meat), the use of fats increased in an attempt to enhance the taste of the meals. For urban formal participants, with higher income levels than rural and urban informal participants, affordability was related more to the frequency with which foods from animals were consumed rather than a reason for their exclusion from the diet.

For all focus group EAs, availability was mostly related to fruit consumption and highly contingent on seasonal fluctuations. For Black participants, in particular, availability also influenced the ability to eat a varied diet. With regards to water consumption, the further the water source was from the household, the greater the likelihood of a reduced allocation of water for all household needs, including that for drinking purposes. This was evident for rural and urban informal Black participants who were communal (shared) water users.

All focus group EAs cited household taste preferences as a reason for the exclusion of fruits and vegetables, but the inclusion of fats and salt. For urban Indian participants, taste preferences were a reason to include legumes in the diet, as opposed to urban White participants who regarded this as a barrier. Participants from urban formal areas all cited taste preferences as a primary barrier to the drinking of water. White focus group participants suggested that routine food purchasing habits might limit the incorporation of new foods.

Time constraints were cited by urban formal Indian and White participants as a reason for the repetitive consumption of certain foods, which could reduce variety in the diet. All Black participants cited time constraints as a reason for replacing legumes (mostly dry beans) that require lengthy cooking periods with quick cooking and processed soya products. Urban formal White participants made use of fats more often when time was limited and a quicker cooking method was required. Participants from urban formal areas all cited a lack of leisure time (and the use of private transportation) as a main reason for inactivity.

Despite an awareness of the health consequences of high intakes of fat and salt, participants from all focus group EAs acknowledged that these guidelines would be the most difficult to implement due to household taste preferences, traditional/habitual food preparation methods, and persistent attitudes. Persistent attitudes were also cited as a primary barrier to increasing intakes of starchy food (urban formal EAs) and limiting alcohol intake (all EAs).

Table 6.25 Barriers to application of the FBDGs as cited by focus group participants

BARRIERS	GUIDELINES										
	VARIETY	BE ACTIVE	STARCHY FOODS	FRUITS/VEGETABLES	LEGUMES	FOODS FROM ANIMALS	FATS	SALT	WATER	ALCOHOL	SNACKS
Affordability	ALL (especially RB UIB UFB)			RB UIB UFB	RB UIB UFB (#)	ALL					RB UIB
Availability	RB UIB UFB			ALL					RB UIB		
Household taste preferences	ALL			ALL	UFW		ALL	ALL	UFB UFI UFW		
Routine food purchasing habits	UFW										
Time constraints	UFI UFW	UFB UFI UFW			RB UIB UFB		UFW				
Food preparation methods								ALL			
Use of private transport (cars)		UFB UFI UFW									
Persistent attitudes			UFB UFI UFW				ALL			ALL	

(#) Affordability of legumes related to lengthy cooking period required where fuel resources were expensive (paraffin, wood fires)

Legend of Enumerator Areas (EAs):		
RB – rural Black participants	UIB – urban informal Black participants	UFB – urban formal Black participants
UFI – urban formal Indian participants	UFW – urban formal White participants	

The majority of focus group participants stated that religion did not influence food choice (58.26%). Focus group participants for whom religion was an influencing factor on food choice were rural and urban informal Black participants who were Zionists, and urban formal Indian participants who were Hindus (see Table 6.26). Where religion did influence food choice, it restricted the consumption of pork, beef and alcohol.

Table 6.26 Influence of religion on food choices of focus group participants

Influence of Religion	ENUMERATOR AREAS (% participants) (n=103)					AVERAGE (% participants)
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White	
No	37.5	47.4	68.0	43.8	94.7	58.26
Yes	62.5	52.6	32.0	56.3	5.3	41.76

6.1.4.2 “Enjoy a variety of foods”

The frequency of references to affordability as a barrier surfaced most consistently among all focus group EAs, and was the most significant barrier for all Black participants. Participants indicated that the extent to which dietary diversity was achieved remained highly contingent on supplies within the household food inventory, which in turn was determined to a large extent by the household’s ability to acquire these foods.

“I eat different food everyday, depending on what I have in the house” [rural Black]

“..what is prepared is controlled by the amount of money one has available...sometimes we have to eat the same type of food twice a day” [urban formal Black]

For rural and urban informal Black focus group participants, barriers in terms of the household’s ability to acquire food as well as the availability of food affected dietary diversity most severely with respect to consumption of fruits, vegetables, foods from animals and snacks. Food staples (starchy foods) were the only consistent source of food for participants when household food security was threatened. This may result in a lack of variety in the diet.

“We always have a starch no matter what” [rural Black]

“Sometimes it {starch} becomes the only food that one has” [urban informal Black]

All focus group EAs stated that household taste preferences could lead to the exclusion of certain foods.

“It is important to accept other people’s likes and dislikes” [urban informal Black]

“We find out from the family what they like to eat..and prepare these foods” [urban formal Indian]

“Sometimes we don’t like eating fruit or vegetables, especially the children” [urban formal White]

“When there’s a favourite food/dish that the family enjoys then we may have it often” [urban formal White]

Urban formal Indian and White participants also stated that accommodating for a range of household taste preferences could sometimes encourage variety in the diet by having to vary food preparation methods, daily and weekly meal composition and through the incorporation of new (convenience) food items.

Urban formal White focus group participants suggested that routine food purchasing habits might limit the incorporation of new foods.

"..you tend to stick to what you know..you are used to buying certain items" [urban formal White]

For urban formal Indian and White focus group participants, time constraints were cited as leading to repetitive consumption of certain foods.

"We haven't got the time to cook different foods" [urban formal Indian]

"If the items meet the criteria – affordability, time saving, taste, quick to prepare – then I am prepared to try something different every now and then" [urban formal White]

6.1.4.3 "Be active"

Rural Black focus group participants reported a high level of physical activity, primarily through engagement in household chores. Application of this guideline was therefore generally considered to be quite a normal occurrence as all members of the household were routinely engaged in household chores.

"We do housework.... fetch fire wood, doing our laundry, cutting grass {by hand}..." [rural Black]

For urban informal Black focus group participants, most of the reported physical activity was concentrated around household chores, which included walking long distances in completion of a chore. Women and children were regarded as being the most active members of the household.

"..walking from the township to town....working around the house.....other people do their garden everyday" [urban informal Black]

Among urban formal focus group participants, women and young children were also regarded as being the most active members of the household, although participants agreed that the amount of activity done by the entire household, including the children, could be increased. Women primarily engaged in household chores (cleaning, washing, ironing, sewing, child-care, cooking, gardening), but also other physical activities such as walking. Children were active through play, sport and helping around the house after school. Teenagers and husbands were regarded as being the least active members of the household.

All urban formal focus group EAs considered barriers to implementation of this guideline to include the use of private transport (cars) and the lack of (leisure) time.

"..you must give yourself time to walk because lazing around can make you feel tired all the time" [urban formal Black]

"..we try encourage them {husbands} to walk in the evenings, but often they want to stay at home and watch TV" [urban formal Indian]

"Sometimes - the family is not so very active; my husband is not inclined to do any activity after a day at the office" [urban formal White]

6.1.4.4 “Make starchy foods the basis of most meals”

All Black focus group EAs reported application of this guideline, while urban formal Indian and White focus group EAs varied in their response. Traditional/habitual food consumption patterns were identified as the main reason for application of the guideline.

“We always have a starch no matter what” [rural Black]

“..although we don’t realise, we are doing it..” [urban formal Indian]

For all urban formal focus group EAs, the greatest barrier to application of this guideline related to a persistent attitude that eating starchy food would result in weight gain.

“..starch is not so important...will get fat from eating too much..” [urban formal Black]

- *“We actually avoid starch...because we are worried we will gain weight”* [urban formal Indian]

- *“Starchy foods are stodgy foods....fattening foods”* [urban formal White]

Black urban formal participants stated that they preferred rice to maize as rice is considered less fattening. In contrast, rural Black participants perceived maize as more satiating than other starchy foods, in particular, rice.

“..they {young girls} feel they will get fat from eating too much...they prefer to eat rice which they feel is less fattening than mealie {maize} meal” [urban formal Black]

“..they {men} only want to eat phutu {maize meal} and avoid rice - they often say rice is not filling..” [rural Black]

6.1.4.5 “Eat plenty of fruits and vegetables every day”

Although aware of the health benefits of applying this guideline, focus group participants indicated that affordability, availability and household taste preferences restricted fruit and vegetable consumption.

Among all Black focus group EAs, affordability (lack of household income) was cited as a primary barrier to application of this guideline. Cost did not surface as a barrier to fruit and vegetable consumption among Indian and White participants.

“..these foods are good for our health, but we do not have the money to buy them” [urban informal Black]

“We can’t always afford to eat vegetables and fruit very often” [rural Black]

“..they are expensive but we do know that we should be eating them” [urban formal Black]

For all focus group EAs, availability was mostly related to fruit consumption and highly contingent on seasonal fluctuations.

“...when they are available” [rural Black]

“Families are practising this message but are limited by finance and the varieties available to them” [urban formal Black]

“..eat enough fruits....depending on what’s available...” [urban formal Indian]

A separate point of discussion by some rural Black focus group participants was the possibility of domestic production of fruit and vegetables as an option to secure household supplies where purchasing of these foods is restricted by household income and seasonal availability. However, the difficulties associated with this (not elaborated) often eliminated this possibility - *“We like fruit and vegetables, but we cannot afford to buy them, and it is very difficult to plant them either....”* [rural Black]

In terms of household taste preferences, all focus group EAs stated that most resistance to fruit and vegetable consumption came from the children and, in some cases, the men in the household.

“children like sweet vegetables but they don’t like the leafy vegetables” [rural Black]

“sometimes this is determined by the likes and dislikes of other family members” [urban informal Black]

“children don’t like vegetables” [urban formal Black]

“The children love fruit, but not always their vegetables....” [urban formal Indian]

“...some children don’t like fruits...will only eat them if cut up..” [urban formal Indian]

Urban formal Indian and White participants made various suggestions to improve application of this guideline, such as offering peeled fruit; having fruit juice instead of fresh fruit; incorporating fruit into baked bread, yoghurt, fruit salad; serving vegetables with a sauce; making vegetable soup; adding vegetables to stews; varying the cooking methods for vegetables.

6.1.4.6 “Eat legumes regularly”

Whilst the affordability of legumes relative to other foods was identified as a major reason for their inclusion in the diet, it was also cited as a barrier where a lengthy cooking period was required. This surfaced amongst all Black focus group EAs where cooking fuel, namely paraffin, is an expensive resource.

“..beans take a long time to cook, so they waste paraffin” [urban formal Black]

Black focus group participants also cited time constraints (in terms of lengthy cooking periods) as a barrier to the frequency of consumption of legumes, often leading to substitution of dry beans with processed soya products that did not require long cooking periods.

“..they {dry beans} take a long time to cook.....if you are working you have to cook them when you are at home” [urban informal Black]

“we do use (legumes) but not as regular as we would like to as they take long to cook...now we use more of the Imana (soya product)...” [urban formal Black]

While urban formal Indian focus group participants regarded household taste preferences as a reason to include legumes in the diet, urban formal White participants regarded this as a barrier.

“money does not have anything to do with it – we eat legumes because we like them” [urban formal Indian]

“..husbands don’t like them” [urban formal White]

6.1.4.7 “Foods from animals can be eaten every day”

The few urban formal White focus group participants who interpreted this guideline to mean that foods from animals *must* be eaten everyday were more likely to report non-application. All other participants, who interpreted this guideline to mean that foods from animals *may* be eaten everyday, reported some application, which was greatly influenced by the household’s ability to acquire these foods.

Affordability was raised by all focus group EAs as the single biggest barrier to application of this guideline. For urban formal EAs, with higher income levels than rural and urban informal EAs, affordability was related more to the frequency with which these foods were consumed rather than a reason for their exclusion from the diet.

“These foods are too expensive to eat everyday” [rural Black]

“We don’t have the money to buy meat everyday, but that is not a problem if we only need to eat it sometimes” [rural Black]

“A lot of people will say they cannot afford these foods” [urban informal Black]

“The problem will be money...we cannot afford to eat them as regular as we would like to” [urban formal Black]

“We do not eat red meat daily for health reasons and cost” [urban formal White]

6.1.4.8 “Use fat sparingly”

There was a mixed response regarding application of this guideline.

For all focus group EAs, household taste preferences, which influence food preparation methods, emerged as the primary barrier.

“We use fat to braise...we don’t use water...the taste is not the same” [rural Black]

“Fat gives a meaty taste to the food when there is no meat” [urban informal Black]

“I use a lot of fat because...it makes the food enjoyable” [urban formal Black]

“Some of the family members like oily foods” [urban formal Indian]

“I like baked potatoes with cream” [urban formal White]

Time constraints were a barrier for urban formal White participants who regarded cooking with fat a quick method of food preparation.

“..it’s quicker to fry than to bake or grill” [urban formal White]

All focus group EAs cited persistent attitudes as a reason for non-application.

“I foresee a lot of resistance..” [rural Black]

“This message will be hard...people have been told many times but they still do it” [urban informal Black]

“This is what we are used to and I find it necessary to use plenty of oil” [urban formal Black]

“Some of the family members like oily foods” [urban formal Indian]

“We like butter on our bread and baked potatoes with cream” [urban formal White]

The following suggestions were made to reduce fat consumption:

* altering food preparation methods [cited by focus group participants from all EAs]

“Don’t add too much fat when cooking” [rural Black]

“We have to use less fat...” [urban informal Black]

“I am the one who prepares the food, so I will make sure that I use less {fat}” [urban formal Black]

“Use different cooking methods that don’t use fat, like boiling...grilling...” [urban formal Indian]

“It is possible to make roti using mealie {maize} meal and no oil” [urban formal Indian]

“Use less oil for cooking...using Spray ‘n Cook...” [urban formal White]

“I cook in the microwave...I use a non-stick frying pan” [urban formal White]

* making low fat food purchases [cited by participants from urban formal Indian and White EAs]

“We use Trim and low fat margarine” [urban formal Indian]

“...eat lean cuts of meat” [urban formal White]

6.1.4.9 “Use salt sparingly”

Household taste preferences emerged as a primary barrier to application of this guideline. All focus group EAs mentioned adding salt to cooked food (which already contains salt) to enhance the taste.

“Some will not accept it {this advice} as they are used to the taste” [rural Black]

“Most people at home add extra salt at the table” [urban informal Black]

“We add salt to give a nice taste to the food” [urban formal Black]

“My husband likes to pour salt over even if added during cooking” [urban formal Indian]

“We like the taste” [urban formal White]

Household taste preferences are reinforced by traditional/habitual food preparation methods. All focus group EAs mentioned adding salt or salt-based seasonings (stock cubes, soup powders) when preparing and/or cooking food.

“I don’t use a lot of salt but I add too many stock cubes” [rural Black]

“At home we use salt liberally to make food tasty” [urban informal Black]

“We use little salt, but we add soup powders” [urban formal Black]

“We add salt to keep the taste of the food” [urban formal Indian]

“Salt is a major part of our cooking” [urban formal White]

Focus group participants who reportedly used salt sparingly suggested the following to reduce salt consumption:

* food preparation methods

Participants from urban formal EAs suggested using salt sparingly either in food preparation, cooking and/or when eating:

“...when I add stock cubes I reduce the amount of salt...”[urban formal Black]

“I use less {salt} in cooking, and the family can add to their taste” [urban formal Indian]

“Sometimes I boil my vegetables and I add salt in the cooking, but not at table” [urban formal White]

*substitution of salt-based seasonings

Participants from all focus group EAs suggested the use of alternative seasonings in place of salt, such as herbs, garlic, ginger, herbal salt, curry powder, pepper, onions, homemade stock and chillies.

6.1.4.10 “Drink lots of clean, safe water”

The further the water source was from the household, the greater the likelihood of a reduced allocation of water for all household needs, including that for drinking purposes. This was evident for rural and urban informal Black focus group EAs who were communal (shared) water users and verified by the reported consumption of water among these participants. Rural Black participants, who had the longest distances to walk to access water, reported consumption of 1-1½ glasses of water a day, urban informal Black participants stated that they “sometimes” drank water, and urban formal participants specified a range of 2-4 glasses a day. For all focus group EAs, reported water consumption was lower than what was considered optimal (see Table 6.26).

In general, increasing levels of sophistication in water supply correlated positively with lower levels of scepticism regarding the safety of the water supply. The exception to this was among urban formal White focus group participants where scepticism was due to greater awareness of the potential hazards associated with improvements in technology for water delivery (see Table 6.27). In these households, interventions were implemented to rectify the situation.

“..we use filters on taps and filter jugs, we also buy bottled spring water..” [urban formal White]

Table 6.27 Water supply and consumption as reported by focus group participants

WATER SUPPLY AND CONSUMPTION	ENUMERATOR AREAS				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
Source of water supply	River and outside tap	Containerised	Outside tap	In-house tap	In-house tap
Range of supply	Communal	Communal	Communal	Individual household	Individual household
Confidence in safety of water supply	River – low Tap - high	Moderate	High	High	Very low
Optimal consumption	12 glasses	8 glasses	1 litre	1-2 litres/ 6-8 glasses	2 litres/ 6-10 glasses
Reported consumption	1-1½ glasses	“sometimes”	2 glasses	2-3 glasses	3-4 glasses

For all urban focus group EAs, taste preferences were a primary barrier to the drinking of water.

“I don’t like water” [urban informal Black]

“..chill the water to make it taste better...” [urban formal Indian]

“..not at all...I don’t enjoy it {water}..” [urban formal White]

Urban focus group participants made the following suggestions to increase the consumption of water:

- “...keep a jug of water on your desk and make sure you finish it each day”
- “...eat something salty to make you thirsty”
- “...chill the water to make it taste better”

6.1.4.11 “If you drink alcohol, drink sensibly”

All focus group EAs indicated that the primary barrier to application of this guideline was persistent attitudes, especially amongst the men and the young.

“...the men will object to this message..” [urban informal Black]

“It will be difficult to explain this message young people do not listen..” [urban formal Black]

“This message will be difficult because a lot of people are used to alcohol..they think it will take away their problems” [urban formal White]

“..alcohol seems to be a problem especially with men..I think it’s a peer pressure thing..” [urban formal White]

6.1.4.12 “Eat healthier snacks”

Rural and urban informal Black focus group EAs had a dismissive attitude towards the application of this guideline as disposable income is limited and consumption of snacks is therefore an optional extra.

“..we don’t eat them regularly unless we have a little bit of money to spare..” [rural Black]

“..we do like to eat the nice things but we don’t have enough money..” [urban informal Black]

6.1.5 Ability to plan a typical day’s meals that reflect the proposed FBDGs

Focus group participants were divided into smaller groups of 2-3 individuals and asked to plan a typical day’s meals using various food photographs they had selected during the focus group discussion as examples of the various food categories implied by the FBDGs (see objective 3). Meals planned by focus group participants can be found in Appendix 9.

After a discussion of the meals planned, focus group participants were asked “*Did you find it easy or difficult to use the FBDGs to plan meals, and why?*”. Rural, urban informal and urban formal Black focus group participants stated that the guidelines were easy to use to plan meals, although it would be easier if more money was available to purchase fruits, vegetables and meat (see Table 6.28). Urban formal Indian and White participants stated that the guidelines were easy to use to plan meals as they were “*already doing most of them*”. Urban formal White participants found it difficult to incorporate the “legumes” guideline into their meal plans, citing taste preferences and traditional/habitual eating habits as reasons (see Table 6.29).

The above mentioned barriers to the application of certain FBDGs when planning meals verify those previously elicited when asking focus group participants about the extent to which they felt they and/or their family already applied any of the FBDGs (see point 6.1.4).

Table 6.28 Correlation between the proposed FBDGs and typical meals as planned by Black focus group participants

GUIDELINES	MEAL PLAN EXAMPLES								
	Rural Black			Urban informal Black			Urban formal Black		
	<i>breakfast</i>	<i>Lunch</i>	<i>supper</i>	<i>breakfast</i>	<i>lunch</i>	<i>supper</i>	<i>breakfast</i>	<i>lunch</i>	<i>supper</i>
Starchy Foods	Porridge Brown bread	Potatoes Samp	Phutu	Porridge Bread	Phutu Rice	Potato Samp Maize rice Amahewu	Porridge Brown bread	Rice Samp Phutu	Phutu Rice Potato
Fruits/ Vegetables		Cabbage Tomatoes	Cabbage, tomato & onion Pumpkin Peas	Tomato	Cabbage Imifino, onion & tomato Mixed vegetables Butternut Beetroot	Carrots Butternut Green beans Cabbage		Cabbage Onion	Imifino Cabbage Green beans Orange
Legumes		Beans				Beans		Bean stew	
Foods From Animals	Milk Leftovers Eggs/Polony	Tinned fish	Tripe Beef	Milk Eggs	Chicken	Beef Chicken Milk	Milk Polony/Eggs/ Cheese		Boerewors Maas Beef Chicken
Fats	Margarine Holsum			Margarine Cooking oil		Holsum Oil	Margarine	Oil	
Salt	Salt		Salt Curry powder Chillies	Salt	Chillies Curry powder	Stock cubes Salt Curry powder		Salt	Spices Aromat
Water	Tea/ Coffee			Tea; Coffee		Tea Coffee	Tea Coffee	Juice	
Alcohol									
Snacks	Sweets; fruit (banana, apples, oranges, pears); cool drink; Amahewu; juice; biscuits			A sandwich (egg, jam, peanut butter); juice, piece of fruit (apple, banana, peach, orange); Maas; cool drink; chips; biscuits			Banana; cake; cool drink; popcorn		

Table 6.29 Correlation between the proposed FBDGs and typical meals as planned by urban formal Indian and White focus group participants

GUIDELINES	MEAL PLAN EXAMPLES					
	Urban formal Indian			Urban formal White		
	<i>breakfast</i>	<i>lunch</i>	<i>supper</i>	<i>breakfast</i>	<i>lunch</i>	<i>supper</i>
Starchy Foods	Bread/Toast Cereal/Porridge	Roti/Potatoes Bread	Rice/roti	Porridge/Cereal Toast	Bread/rolls Potato salad	Rice/Pasta/Potato
Fruits/ Vegetables	Tomatoes Fruit juice/Banana	Green beans/Salad Tomatoes	Tomato & onion Carrots Orange Green beans	Fruit/Fruit juice	Cucumber/Lettuce Tomato/Gherkins Fruit juice Banana	Mixed vegetables Carrots Peas Onion Spinach Salad
Legumes		Sugar beans Bakes beans	Dhal curry Breyani (lentils)			
Foods From Animals	Milk Egg/Cheese/ Leftover curry	Tinned fish Egg Leftover meat curry	Mutton curry Chicken curry	Yoghurt Milk Eggs/Bacon	Cold meats/ Cheese/Eggs/Tuna	Meat/Mutton Chicken Cheese
Fats	Margarine			Margarine Oil	Margarine Mayonnaise	Gravy
Salt		Chutney Masala Salt				
Water	Tea Coffee	Water Tea Coffee				
Alcohol				On weekends (wine)		
Snacks	Peanut butter and jam sandwich, nuts; chips; biscuits			Apple; cool drink; ice-cream		

6.2 OBJECTIVE 3: - TO ASSESS THE COMPATIBILITY OF THE PROPOSED SOUTH AFRICAN FBDGs IN TERMS OF FOOD CATEGORISATION AS PERCEIVED BY WOMEN LIVING IN KWAZULU NATAL AND AS DEPICTED IN THE FOOD GUIDES THAT ARE COMMONLY USED IN SOUTH AFRICA FOR NUTRITION EDUCATION.

The following areas were investigated in order to assess the compatibility of the proposed FBDGs in terms of participant perceptions and existing food guides commonly used for nutrition education:

- common foods/drinks (known and consumed frequently by study participants), and reasons for infrequent consumption of known foods/drinks
- personal food categorisation (way/s in which common foods/drinks are categorised by study participants without food group prompting)
- FBDG food categorisation (selection by study participants of foods/drinks per food category as implied by the FBDGs, namely, starchy foods, fruits, vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks)
- previous exposure to and reported usage of food guides commonly used in South Africa, and any influence this may have had on personal food categorisation
- the compatibility of the proposed FBDGs in terms of the above, namely:
 - personal food categorisation as perceived by study participants
 - FBDG food categorisation as perceived by study participants
 - food groupings as depicted in food guides commonly used in South Africa

Semi-structured individual interviews were used to investigate all areas listed above. In addition, focus group discussions were used to elicit information regarding FBDG food categorisation.

6.2.1 Common foods/drinks (known and consumed frequently), and reasons for infrequent consumption of known foods/drinks

Food choices of interview participants were investigated in terms of:

- * common foods/drinks (known and consumed frequently)
- * uncommon foods/drinks (known but consumed infrequently)
- * unknown foods/drinks (not recognised)

Interview participants were shown, in random order, 128 food photographs. When shown a food photograph, the participant was asked if she knew the food/drink. If the listed name of the food/drink (as on the interviewer sheet) was given, the participant was then asked if it was consumed frequently, and reasons for infrequent consumption. If the participant did not recognise the food/drink or gave a different name to that on the interviewer sheet, the participant was told the listed name and asked again if she knew the food/drink.

Participants were also asked if they had any local names for the foods/drinks they recognised, and if there were any frequently consumed foods/drinks that had not been mentioned.

6.2.1.1 Common foods/drinks (known and consumed frequently)

Of the 128 food photographs shown to interview participants, an overall average (weighted) of 54.4% of foods/drinks were cited as common (known and eaten frequently) by more than 50% of participants (with 30.4% being common to more than 75% of participants). 38.3%, 58.6%, 72.7%, 64.0% and 50.1% of foods/drinks were cited as common by more than 50% of rural Black, urban informal Black, urban formal Black, urban formal Indian and urban formal White participants respectively (see Table 6.30).

Table 6.30 Percentage (%) interview participants consuming known foods/drinks

EAs	% PARTICIPANTS CONSUMING KNOWN FOODS/DRINKS (n=230)							
	0-25%		>25-50%		>50-75%		>75%	
	Foods/Drinks Number	%	Foods/Drinks Number	%	Foods/Drinks Number	%	Foods/Drinks Number	%
Rural Black (n=70)	44	34.4	35	27.3	21	16.4	28	21.9
Urban Informal Black (n=40)	18	14.1	35	27.3	42	32.8	33	25.8
Urban Formal Black (n=40)	10	7.8	25	19.5	40	31.3	53	41.4
Urban Formal Indian (n=40)	22	17.2	24	18.8	25	19.5	57	44.5
Urban Formal White (n=40)	25	19.5	38	29.7	33	25.8	32	25.0
Overall (weighted averages) (n=230)		20.7		24.9		24.0		30.4

EAs – Enumerator Areas

The majority of interview participants (66.06%) stated that religion did not influence food choice. Interview participants for whom religion was an influencing factor on food choice were urban formal Indian participants who were Hindus and did not consume pork, beef and alcohol (see Table 6.31).

Table 6.31 Influence of religion on food choices of interview participants

Influence of Religion	ENUMERATOR AREAS (% participants) (n=230)					
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White	AVERAGE (% participants)
No	55.0	68.6	70.0	45.0	100.0	66.06
Yes	45.0	31.4	30.0	55.0	0.0	33.94

Of the common foods/drinks identified, local names were given to only six foods/drinks (4.7%), namely, “chicken feet and heads”, “wild spinach/imifino”, “maas/inkomasi”, “snoek”, “split peas” and “lentils” (see Table 6.32).

Table 6.32 Local names given to common foods as cited by interview participants

ENUMERATOR AREAS	LOCAL FOOD NAMES (% participants) (n=230)					
	Chicken feet & heads	Wild spinach/ Imifino	Maas/ Inkomasi	Snoek	Split peas	Lentils
Rural Black (n=70)		Intanga (12.5%)	Sour milk (2.5%)			
Urban informal Black (n=40)	Amanqina (4.5%)	Intanga (1.5%)				
Urban formal Black (n=40)	Amanqina (5.0%)			Dry fish (2.5%)	Dali/Dhal (12.5%)	
Urban formal Indian (n=40)		Pumpkin herbs (35.0%)	Sour milk (2.5%)	Dry fish (32.5%)	Dhal (27.5%)	Biryani dhal (12.5%)
Urban formal White (n=40)		Pumpkin herbs (25.0%)	Sour milk (2.5%)	Dry fish (27.5%)	Dhal (25.0%)	Biryani dhal (10.0%)

The top 20 common foods within each enumerator area (see Table 6.33) show specific differences between enumerator areas, for example:

- * samp and green mealies selected most commonly by rural Black participants
- * mealie-meal, maas, cabbage and imifino selected most commonly by rural and urban informal Black participants
- * dry beans selected most commonly by rural Black and urban formal Indian participants
- * white bread selected most commonly by rural Black participants, with brown bread selected most commonly by urban informal and formal Black participants
- * carrots and apples selected most commonly by urban participants
- * fresh milk selected most commonly by urban Indian and White participants

Bananas, onions, potatoes, tomatoes, chicken, salt, sugar, tea and water were foods/drinks most commonly selected across all enumerator areas.

Table 6.33 Top 20* common foods/drinks as cited by interview participants

(* - in some cases more than 20 foods are cited due to equal % participants consuming these foods/drinks)

% PARTICIPANTS CONSUMING KNOWN FOOD/DRINK (n=230)					
Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)	Overall (weighted averages)
White sugar (100%)	Water (100%)	Apples (100%)	Carrots (100%)	Oil (100%)	Onions (98.3%)
Dry beans (97.5%)	Mealie-meal (97.1%)	Brown bread (100%)	Chillies (100%)	Cheese (97.5%)	Salt (97.6%)
Mealie-meal (97.5%)	Onions (97.1%)	Chicken (100%)	Curry powder (100%)	Fresh milk (97.5%)	Water (97.1%)
Oil (97.5%)	Potatoes (95.7%)	Onions (100%)	Dry beans (100%)	Onions (97.5%)	Oil (96.4%)
Onions (97.5%)	Salt (95.7%)	Peppers (100%)	Eggs (100%)	Potatoes (97.5%)	Potatoes (96.1%)
Stock cubes (97.5%)	Tomatoes (94.3%)	Potatoes (100%)	Oil (100%)	Spices (97.5%)	Tomatoes (95.1%)
Water (97.5%)	Chicken (94.2)	Salt (100%)	Onions (100%)	Chicken (95.0%)	White sugar (94.8%)
Salt (97.4%)	Stock cubes (92.9%)	Tomatoes (100%)	Salt (100%)	Mixed vegetables (95.0%)	Chicken (93.1%)
Cabbage (95.0%)	Cabbage (91.4%)	White sugar (100%)	Tomatoes (100%)	Pumpkin (95.0%)	Margarine (90.9%)
White rice (94.9%)	Oil (91.4%)	Cabbage (97.5%)	Water (100%)	Salt (95.0%)	Eggs (90.0%)
Imifino (92.5%)	Soup powder (91.4%)	Eggs (97.5%)	Fresh milk (97.5%)	Tomatoes (95.0%)	White rice (89.3%)
Margarine (92.5%)	Eggs (90.0%)	Mealie-meal (97.5%)	Fruit juice (97.5%)	Water (95.0%)	Bananas (88.5%)
Potatoes (92.5%)	White rice (90.0%)	Mince (97.5%)	Chicken (97.5%)	Apples (90.0%)	Tea (87.1%)
Tea (90.0%)	White sugar (89.9%)	Soup powder (97.5%)	Garlic (97.5%)	Bananas (90.0%)	Cabbage (86.6%)
Tomatoes (90.0%)	Brown bread (88.6%)	Tinned fish (97.5%)	Ginger (97.5%)	Eggs (90.0%)	Brown bread (85.1%)
White bread (87.5%)	Curry powder (88.6%)	White rice (97.5%)	Potatoes (97.5%)	Pasta (90.0%)	Chops (84.2%)
Chicken (85.0%)	Imifino (88.6%)	Carrots (97.4%)	Tinned fish (97.5%)	Mayonnaise (89.7%)	Mealie-meal (82.7%)
Maas (85.0%)	Margarine (88.6%)	Margarine (97.4%)	Tea (97.5%)	Carrots (87.5%)	Apples (81.5%)
Bananas (82.5%)	Tea (88.6%)	Bananas (95.0%)	White sugar (97.5%)	Mince (87.5%)	Fresh milk (81.3%)
Chops (82.5%)	Bananas (84.3%)	Boerewors (95.0%)	Apples (95.0%)	Coffee (85.0%)	Dry beans (80.9%)
Samp (82.5%)	Maas (84.3%)		Baked beans (95.0%)	Garlic (85.0%)	Curry powder (80.6%)
Green mealies (82.5%)	Spinach (84.3%)		Bananas (95.0%)	Green peas (85.0%)	Carrots (80.1%)
			Green beans (95.0%)	Margarine (85.0%)	
			Mixed vegetables (95.0%)	Tea (85.0%)	
			Peanut butter (95.0%)		
			White rice (95.0%)		

6.2.1.2 Uncommon foods/drinks (known but consumed infrequently)

Of the 128 food photographs shown to interview participants, 45.6% of foods/drinks were cited as common by 50% or fewer participants. These foods/drinks are referred to as **uncommon** (known but eaten infrequently). Rural Black participants reported the highest number of foods consumed infrequently (61.7% of known foods being consumed by 50% or fewer participants), followed by urban formal White participants (49.2%), urban informal Black participants (41.4%), urban formal Indian participants (36.0%) and urban formal Black participants (27.3%) (see Table 6.30).

Primary reasons cited for infrequent consumption of known foods by rural, urban informal and urban formal Black participants were affordability, cultural food choice, personal preference, and availability. Affordability, cultural food choice and personal preference were the primary reasons cited by urban formal Indian and White participants for infrequent consumption of known foods (see Table 6.34).

Table 6.34 Primary reasons cited for infrequent consumption of known foods as cited by interview participants

REASONS	ENUMERATOR AREAS (% participants) (n=230)					
	Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)	Overall (weighted averages)
Expensive	55.2	56.6	36.3	48.5	37.1	47.84
Personal preference	13.1	16.4	30.9	48.5	52.6	29.80
Not a cultural food	27.7	20.3	19.0	6.4	3.1	16.92
Bad for health	0.3	3.2	1.6	0.1	4.2	1.67
Unavailable	3.4	1.6	2.8	0.8	0.7	2.06
Religious	0.4	0.9	0.8	3.6	1.5	1.30
No time to make	0.0	0.2	0.5	0.1	0.0	0.14
No storage facility	0.2	0.1	0.4	0.0	0.0	0.15
No cooking facility	0.03	0.0	0.0	0.0	0.0	0.01

The top 20 uncommon foods within each enumerator area (see Table 6.35) show specific differences between enumerator areas, for example:

- * snoek among rural Black participants
- * breakfast cereals among urban informal and formal Black participants
- * biltong and koeksisters across all Black participant groups
- * spirits and wine among urban formal Indian participants
- * amahewu and chicken heads and feet among urban formal Indian and White participants
- * roti, samp, mealie-rice, imifino and maas among urban formal White participants
- * cottage cheese across all enumerator areas except urban formal White participants

Table 6.35 Top 20 uncommon foods/drinks as cited by interview participants

% PARTICIPANTS CONSUMING KNOWN FOOD/DRINK (n=230)					
Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)	Overall (weighted averages)
Broccoli (0.0%)	Brown rice (8.0%)	Biltong (11.8%)	Buttermilk (2.6%)	Amahewu (0.0%)	Dried apricots (14.5%)
Buttermilk (0.0%)	Salad dressing (10.9%)	Dried apricots (12.5%)	Zulu beer (4.0%)	Zulu beer (0.0%)	Cottage cheese (14.8%)
Cottage cheese (0.0%)	Spirits (whiskey/cane) (11.4%)	Spirits (whiskey/cane) (17.1%)	Wine (5.0%)	Mealie rice (2.7%)	Puffed wheat cereal (16.6%)
Dried apricots (0.0%)	Biltong (13.6%)	Brown rice (21.7%)	Brown sugar (7.5%)	White cooking fat (2.7%)	Spirits (whisky, cane) (18.7%)
Lentils (0.0%)	Broccoli (13.8%)	Commercial beer (22.2%)	Cottage cheese (7.7%)	Chicken feet & heads (5.0%)	Wine (20.4%)
Puffed wheat cereal (0.0%)	Dried apricots (15.6%)	Condensed milk (22.2%)	Fish paste (7.7%)	Soya mince (5.0%)	Biltong (20.7%)
Snoek (0.0%)	Cottage cheese (16.1%)	Wine (22.9%)	Amahewu (8.1%)	Buttermilk (7.5%)	Condensed milk (21.1%)
Raisins (4.6%)	Bottled water (17.4%)	Cottage cheese (23.8%)	Marmite (10.0%)	Creamer/whitener (7.5%)	Honey (22.0%)
Biltong (6.5%)	Wine (18.6%)	Roti (24.0%)	Milk powder (10.0%)	Samp (10.0%)	Brown rice (22.6%)
Honey (6.7%)	Honey (18.8%)	Puffed wheat cereal (25.0%)	White cooking fat (10.5%)	Maas/Inkomasi (10.3%)	Broccoli (23.4%)
Fish paste (7.1%)	Oats (20.3%)	Mealie rice (26.5%)	Brown rice (12.5%)	Roti (15.0%)	Zulu beer (23.7%)
Wine (7.7%)	Marmite (22.0%)	Samoosa (27.1%)	Spirits (whiskey/cane) (15.0%)	Rusks (15.0%)	Koeksister (23.9%)
Marmite (9.5%)	Puffed wheat cereal (22.7%)	Syrup (27.8%)	Syrup (15.0%)	Milk powder (15.4%)	Muesli-type snack bars (24.1%)
Pies (10.0%)	Condensed milk (24.6%)	Muesli-type snack bars (30.8%)	Bottled water (17.5%)	Snoek (15.8%)	Buttermilk (24.3%)
Syrup (10.0%)	Garlic (25.0%)	Canned sweetcorn (32.0%)	Broccoli (18.0%)	Vetkoek (17.5%)	Bottled water (24.4%)
Ginger (11.1%)	Koeksister (25.0%)	Honey (33.3%)	Canned sweetcorn (20.0%)	Butter (20.0%)	Mealie-rice (25.1%)
Koeksister (11.1%)	Lentils (25.0%)	Snoek (36.4%)	Puffed wheat cereal (20.0%)	Cream (20.0%)	Syrup (25.6%)
Samoosa (11.1%)	Snoek (25.0%)	Marmite (37.1%)	Stock cubes (20.0%)	Dhal (split peas) (20.0%)	Snoek (26.0%)
Salad dressing (11.8%)	Commercial beer (25.7%)	Broccoli (37.9%)	Dried apricots (22.5%)	Muesli-type snack bars (20.5%)	Canned sweetcorn (27.5%)
Condensed milk (12.5%)	Roti (26.5%)	Koeksister (38.1%)	Chicken feet & heads (25.0%)	Wild spinach/Imifino (21.7%)	Fish paste (27.5%)

6.2.1.3 Unknown foods/drinks (not recognised)

Of the 128 food photographs shown to interview participants, only nine foods/drinks were cited as unknown (not recognised/unfamiliar) to the majority (>75%) of participants. 97.7% of foods/drinks were therefore known to the majority (>75%) of participants, of which 64.7% were known to more than 99% of participants. Enumerator areas (EAs) for which foods were cited as unknown to more than 75% of participants comprised rural and urban informal Black EAs. EAs for which no foods were cited as unknown to more than 75% of participants comprised urban formal Black, Indian and White EAs (see Table 6.36).

Table 6.36 Percentage (%) interview participants for which foods/drinks were unknown

EAs	% PARTICIPANTS CITING UNKNOWN FOODS/DRINKS (n=230)									
	<1%		1-25%		>25-50%		>50-75%		>75%	
	Foods/Drinks Number	%	Foods/Drinks Number	%	Foods/Drinks Number	%	Foods/Drinks Number	%	Foods/Drinks Number	%
Rural Black (n=70)	69	53.9	31	24.2	7	5.5	12	9.4	9	7.0
Urban Informal Black (n=40)	66	51.6	45	35.2	6	4.7	10	7.8	1	0.8
Urban Formal Black (n=40)	55	43.0	61	47.7	8	6.3	4	3.1	0	0.0
Urban Formal Indian (n=40)	119	93.0	8	6.3	1	0.8	0	0.0	0	0.0
Urban Formal White (n=40)	115	89.9	12	9.4	1	0.0	0	0.0	0	0.0
Overall (weighted average) (n=230)		64.7		24.5		3.9		5.2		2.3

EAs – Enumerator Areas

Nine foods/drinks were reported as unknown to rural Black participants, the majority of these foods/drinks being relatively expensive and/or not culturally familiar. One food was reported as unknown to urban informal Black participants (namely “snoek”, which is relatively expensive, not culturally familiar and more commonly eaten in the Western Cape) (see Table 6.37).

Table 6.37 Foods/drinks cited as unknown by the majority (>75%) of interview participants

UNKNOWN FOODS	ENUMERATOR AREAS				
	Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)
No. Foods (%) (n=128)	9 (7.0%)	1 (0.8%)	0 (0%)	0 (0%)	0 (0%)
Specific foods (% participants for whom the food was unknown)	Snoek (95.0%) Dried apricots (92.5%) Bottled water (90.0%) Cottage cheese (85.0%) Canned sweetcorn (85.0%) Broccoli (85.0%) Lentils (82.5%) Buttermilk (82.5%) Koeksister (77.5%)	Snoek (77.0%)	---	---	---

A minority (2.5% - 7.5%) of interview participants (all urban formal dwellers) cited additional frequently consumed foods/drinks (that is, frequently consumed foods/drinks for which there were no food photographs) (see Table 6.38).

Table 6.38 Additional frequently consumed foods/drinks as cited by interview participants

ADDITIONAL FOODS/DRINKS	ENUMERATOR AREAS (% participants)		
	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)
Giblets/Offal	5.0	5.0	
Dhania (curry leaves)		7.5	
Amadumbe	5.0	2.5	
Steamed bread (ujeqe)	5.0		
Dumplings (idombolo)	2.5		
Pumpkin with flour and sugar (isijingi)	2.5		
Cabbage with cheese (ukhukhumba)	2.5		
Lettuce	2.5	5.0	5.0
Cucumber	2.5	2.5	5.0
Brinjal		2.5	2.5
Celery		2.5	
Mushrooms		2.5	2.5
Mango/Prunes/Plums		5.0	
Grapes	2.5	2.5	
Pears	2.5		
Watermelon	2.5	2.5	
Vinegar		2.5	2.5
Worchestershire/Tomato sauce			5.0
Gravy powder			2.5
Olives			2.5
Imitation juices	2.5		2.5
Energy drinks			2.5
Lemon juice/Lemons			5.0
NUMBER OF FOODS	12 foods/drinks	12 foods/drinks	11 foods/drinks

6.2.2 Personal food categorisation (way/s in which common foods/drinks are categorised without food group prompting)

Personal food categorisation was investigated as a means of determining any differences and/or similarities between personal food categories and those implied by the proposed FBDGs and existing food guides used for nutrition education.

Interview participants were asked to place (categorise) the photographs of foods/drinks previously identified as common (known and frequently consumed) into piles according to their understanding of the word “similar”. “Similar” was explained to and understood by participants as meaning “foods that belong together”, “foods that are alike”, “foods that are almost the same”, and “foods that can be substituted for others”. The word “group” was avoided when explaining the concept of “similar” so as to reduce any influence this might have on participants familiar with the concept of “food groups”.

The number of piles into which interview participants categorised common foods ranged from one pile (labelled “foods” – urban informal Black participant), and two piles (labelled “keep in the cupboard” and “keep in the fridge” – rural Black participant), up to 48 piles (urban formal Black participant).

The average number of piles ranged from 10.9 (rural Black participants) to 16.1 (urban formal Indian participants). The most common number of piles ranged from 7 (urban informal Black participants) to 15 (urban formal Black and Indian participants), with 11 piles being the most common number for all participant groups (see Table 6.39).

Table 6.39 Interview participant categorisation of common foods into “similar” piles

CATEGORISATION	ENUMERATOR AREAS				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
Range of piles	2 – 26	1 – 33	4 - 48	5 – 31	5 - 23
Average no. of piles	10.9	12.9	15.3	16.1	12.5
Most common no. of piles	11	7, 10	15	9, 14, 15	9, 11, 12
Food examples	Names given to most common food piles				
mealie meal, rice, samp	Staples/ Basic foods	Starchy/ Staples	Starchy/ Staples	Starchy foods	Starchy foods
bread/rolls	Sandwiches	Flour products	Flour products	Breads	Breads
bran/corn flakes, oats		Breakfast foods	Breakfast foods		
green beans, pumpkin	Vegetables/ Salads	Vegetables/ Salads	Vegetables/ Salads	Vegetables	Vegetables
apples, bananas	Fruits	Fruits	Fruits	Fruits	Fruits
maas, yoghurt			Dairy/milk	Dairy/Milk	Dairy/Milk
chicken, chops	Meats	Meat products	Meats	Meats	Meats
dry beans, dhal			Beans	Beans/ Lentils	
oil, holsum			Fats/oils	Fats/Oils	Fats/Oils
coffee, beer, fruit juice	Drinks & Alcohol	Drinks & Alcohol	Drinks & Alcohol	Drinks & Alcohol	Drinks & Alcohol
aromat, salt, soup powder	Seasonings	Spices/ Seasonings	Spices/ Seasonings	Spices	Spices/ Seasonings
marmite, jam	Spreads	Spreads	Spreads	Spreads	Spreads
crisps, peanuts	Snacks		Snacks	Snacks	Snacks
sugar, boiled sweets	Sweets/ Sugars		Sweets/ Sugars	Sweets	Sweets
jelly, custard	Desserts	Desserts	Desserts	Desserts	
biscuits, scones				Cakes	

Names given to the most common piles of foods (n=11) showed remarkable similarity across all enumerator areas (see Table 6.40).

Table 6.40 Most common personal food categories as cited by interview participants

PERSONAL FOOD CATEGORIES (n=11)	COMMON FOODS SELECTED PER CATEGORY
Starchy foods/Staples/Cereals/ Breads/Flour products	bread (white/brown), breakfast cereals, flour, mealie-meal, mealie-rice, oats, rice (white/brown), roti, samp
Beans	dhal (split peas), lentils
Meats	bacon, biltong, boerewors, chicken, chicken feet and heads, chicken livers, chops, eggs, hake, canned meat, mince, polony, snoek, tinned fish, viennas
Milk/Dairy	cream, maas, milk (fresh, powdered, flavoured), yoghurt, yogi-sip
Vegetables/Salads	green beans, beetroot, broccoli, cabbage, carrots, cauliflower, butternut/pumpkin/squash, chillies, mixed vegetables, onion, peas, peppers, spinach, sweetcorn, sweet potatoes, tomatoes, imifino (wild spinach)
Fruits	apples, apricots, bananas, oranges, peaches, pineapples
Fats/Oils	oil, white cooking fat (Holsum)
Snacks/Sweets/Sugar/Cakes/ Desserts	biscuits, cake, chocolate, cream crackers, crisps, custard, doughnuts, jelly, koeksister, snack bars, muffins, peanuts, pies, popcorn, provitas, raisins, rusks, samoosa, sev 'n nuts, scones, boiled sweets, vetkoek
Spreads	fish paste, honey, jam, marmite, peanut butter, syrup
Spices/Seasonings	aromat, curry powder, garlic, ginger, salt, soup powder, spices, stock cubes
Drinks & Alcohol	coffee, commercial beer, cooldrinks, fruit juice, spirits (whisky, cane), tea, water (plain/bottled), wine, Isizulu(Zulu beer)

A minority of participants (<3.5%) suggested additional ways in which they might categorise “similar” foods (see Table 6.41). Participants from all enumerator areas mentioned categorising foods according to ingredients used in recipes (1.5% to 5.0%). Categorising foods according to the mealtimes when foods are eaten was also popular, except amongst rural Black participants.

Table 6.41 Additional ways to categorise “similar” foods as cited by interview participants

ADDITIONAL WAYS TO CATEGORISE “SIMILAR” FOODS	ENUMERATOR AREAS (% participants) (n-230)					Overall (weighted averages)
	Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)	
Ingredients in recipes (casseroles, cakes)	1.5	5.0	5.0	5.0	2.5	3.50
Mealtimes (breakfast, lunch, supper)		2.5	2.5	2.5	2.5	1.74
Food storage (frozen, dry)			2.5	5.0		1.30
Nutrients (proteins, fats, carbohydrates)				2.5	2.5	0.87
Menu items (starter, main, dessert)				2.5	2.5	0.87
Daily grocery items				2.5		0.43

Across all enumerator areas, participants showed indecision in their personal categorisation of certain common foods (see Table 6.42). Much of this indecision pertained to four main areas, namely:

- * starchy food or vegetable - (namely, pasta, mealies, potatoes)
- * starchy food, vegetable or legume - (namely, baked beans, dry beans, soya mince)
- * vegetable - (namely, salad dressing, mayonnaise)
- * dairy/animal food - (namely, cream, butter, margarine, coffee/tea whiteners/creamers)

Table 6.42 Indecision about personal categorisation of certain common foods as cited by Black interview participants

FOODS	ENUMERATOR AREAS (% participants) (n=150)					
	Rural Black (n=70)		Urban Informal Black (n=40)		Urban Formal Black (n=40)	
	<i>Category name</i>	<i>% participants</i>	<i>Category name</i>	<i>% participants</i>	<i>Category name</i>	<i>% participants</i>
Pasta/Noodles	No group	100.0	Vegetable	17.9	Starchy	39.3
Mealies (Corn)	Starchy	33.3	Vegetable	50.9	Vegetable	60.0
Potatoes	Starchy	32.4	Vegetable	55.2	Vegetable	62.5
Baked beans	Vegetable	45.0	Beans	26.5	Vegetable/Beans	21.6/24.3
Dry beans	Starchy	15.4	Starchy/Beans	23.1/21.2	Beans	30.6
Soya mince	Spices	33.3	Spices	48.9	Spices	39.3
Sugar (white)	Drinks	55.0	Tea/coffee	41.9	Drinks	30.8
Sugar (brown)	Sugar/Tea/coffee	33.3/33.3	Tea/coffee	52.6	Sugar/Drinks	31.3/18.8
Condensed milk	Tea/coffee	60.0	Tea/coffee	35.3	Dairy	25.0
Creamer/Whitener	Drinks	65.4	Tea/coffee	52.0	Drinks/Dairy	40.7/22.2
Amahewu (maize drink)	Drinks	20.0	Drinks	47.2	Drinks	58.8
Maas	Dairy	20.6	Dairy/Drinks	25.4/28.8	Dairy/Drinks	40.0/34.3
Milk (fresh,)	Drinks	57.1	Drinks/Dairy	37.5/ 20.8	Dairy	63.2
Yoghurt	Dairy/Drinks/Dessert	21.4/21.4/21.4	Dairy/Drinks	19.5/19.5	Dairy/Drinks/Dessert	17.7/23.5/20.6
Buttermilk	No group	100.0	Dairy	28.6	Dairy	33.3
Cheese (yellow)	Spreads	57.1	Cheese	20.0	Spreads	27.0
Cheese (cottage)	Not eaten	Not eaten	Spreads	28.9	Dessert	40.0
Cream	No group	100.0	Dairy	37.5	Dairy/ Dessert	31.3/ 31.3
Ice-cream	Dessert	20.0	Dessert	28.2	Dessert	40.0
Butter	Sandwich	50.0	Spreads/Fats	22.2/16.7	Spreads	50.0
Margarine	Spreads	45.9	Spreads	41.9	Spreads	42.1
Mayonnaise	Vegetables	35.0	Vegetables	22.9	Vegetables	30.6
Salad dressing	No group	100.0	Spices	40.0	Vegetables	34.8
Avocado	Spreads	40.0	Fruit	42.9	Vegetable/Fruit	42.9/38.1

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Continuation of Table 6.42

Indecision about personal categorisation of certain common foods as cited by urban formal Indian and White interview participants

FOODS	ENUMERATOR AREAS (% participants) (n=230)			
	Urban Formal Indian (n=40)		Urban Formal White (n=40)	
	<i>Category name</i>	<i>% participants</i>	<i>Category name</i>	<i>% participants</i>
Pasta/Noodles	Starchy	37.0	Starchy	50.0
Mealies (Corn)	Vegetable	62.1	Vegetable	95.2
Potatoes	Vegetable	87.2	Vegetable	79.5
Baked beans	Beans	28.9	Vegetable/Beans	33.3/16.7
Dry beans	Beans	40.0	Beans	25.0
Soya mince	Meats/Vegetable/Spices	18.2/18.2/18.2	Beans/Spices	50.0/50.0
Sugar (white)	Drinks	46.2	Drinks/Sugar	33.3/33.3
Sugar (brown)	Sugar	33.3	Sugar/Drinks	42.1/42.1
Condensed milk	Dairy	50.0	Sweets	33.3
Creamer/ Whitener	Drinks	43.8	Tea/coffee	66.7
Amahewu (maize drink)	Dairy	66.7	Not eaten	Not eaten
Maas	Dairy	100.0	Dairy	75.0
Milk (fresh,)	Dairy	56.3	Dairy	78.9
Yoghurt	Dairy	74.1	Dairy	71.0
Buttermilk	No group	100.0	Dairy	33.0
Cheese (yellow)	Dairy	58.3	Dairy	61.5
Cheese (cottage)	Dairy	66.7	Dairy	73.3
Cream	Dairy	72.7	Dairy	87.5
Ice-cream	Dairy	36.7	Dairy	38.9
Butter	Dairy	46.2	Dairy/Fats	37.5/37.5
Margarine	Dairy	47.2	Fats	38.2
Mayonnaise	Salads	34.4	Fats	42.9
Salad dressing	Salads	58.3	Fats	39.1
Avocado	Fruit	89.7	Fruit	87.5

6.2.3 FBDG food categorisation

Categorisation of foods/drinks in terms of the FBDGs was investigated in order to determine similarities and/or differences between consumer categorisation and that of health professionals.

Focus group participants were asked to provide verbal examples of commonly consumed foods/ drinks for each of the food categories implied by the FBDGs (as listed below). As a food/drink example was mentioned, the relevant photograph was placed on the wall next to the FBDG under discussion. Interview participants were asked to select examples of foods/drinks per FBDG food category from the photographs previously selected as “common” foods/drinks (known and consumed frequently).

For both focus group discussions and individual interviews, one FBDG was examined at a time and in the same order, namely, starchy foods, fruits and vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks.

6.2.3.1 Starchy foods

Urban formal Indian and White participants cited/selected a greater variety of the more expensive “starchy foods” (breakfast cereals, pasta, oats, sweet corn) than Black participants.

Maize (mealie) meal, bread, rice and potatoes were the most commonly cited/selected examples of “starchy foods” among focus group and interview participants. Samp and maize (mealie) meal were also commonly cited/selected examples of “starchy foods” amongst Black participants, with pasta being a more common item for urban formal Indian and White participants. Common “starchy foods” selected by interview participants are depicted in Figure 6.1.

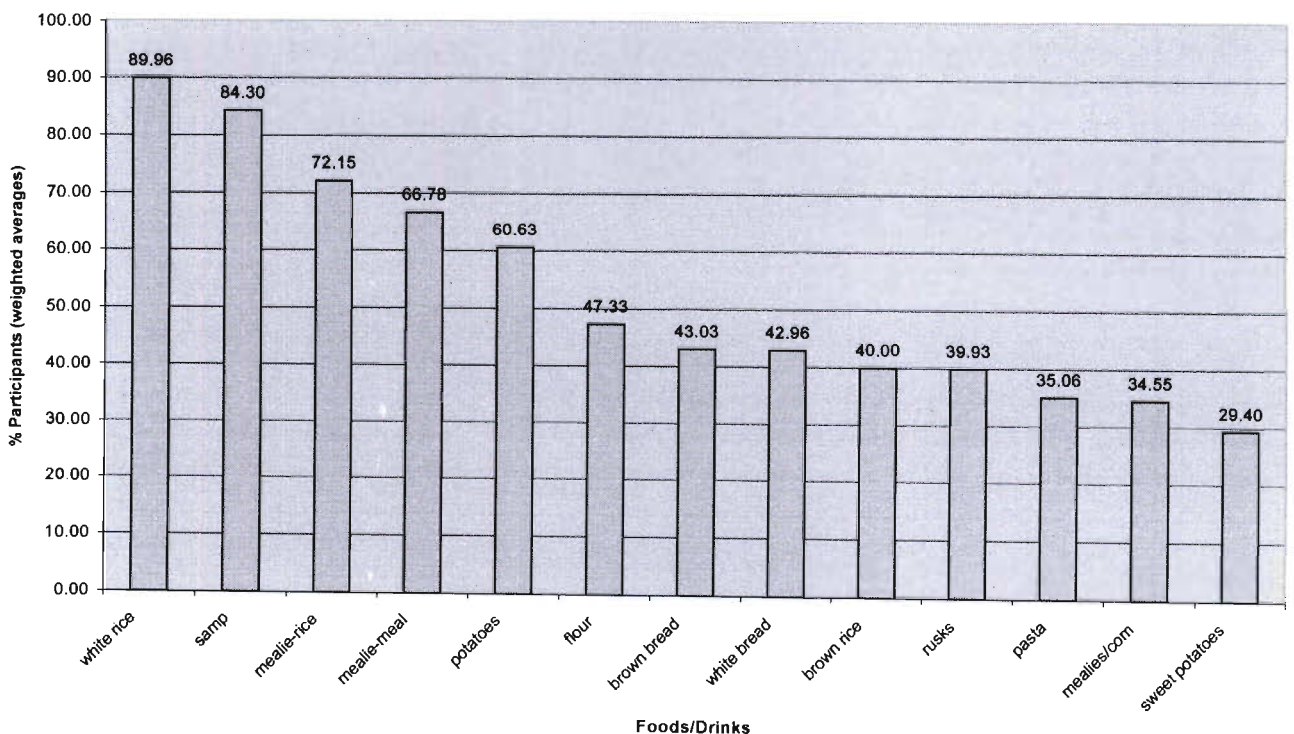


Figure 6.1 Common “starchy foods” selected by interview participants

Urban formal Indian and White participants were uncertain as to whether dry beans, sugar and coffee creamer would be categorised as “starchy” foods as these foods were regarded as the providers of protein (dry beans) and commonly used in beverages (sugar and coffee creamer)

6.2.3.2 Fruits and vegetables

Urban formal White participants cited/selected the greatest variety of “fruits and vegetables”. Focus group and interview participants generally cited/selected the same examples of “fruits”, namely, bananas, apples, oranges, peaches, plums, grapes, mango, paw-paw, pineapple, guava, pears and apricots. In addition to fresh fruits, canned fruit (peaches), fruit juices and dried fruit (mango, dates, raisins and mixed) were also mentioned by Indian and White urban formal participants. Common “fruits” selected by interview participants are depicted in Figure 6.2.

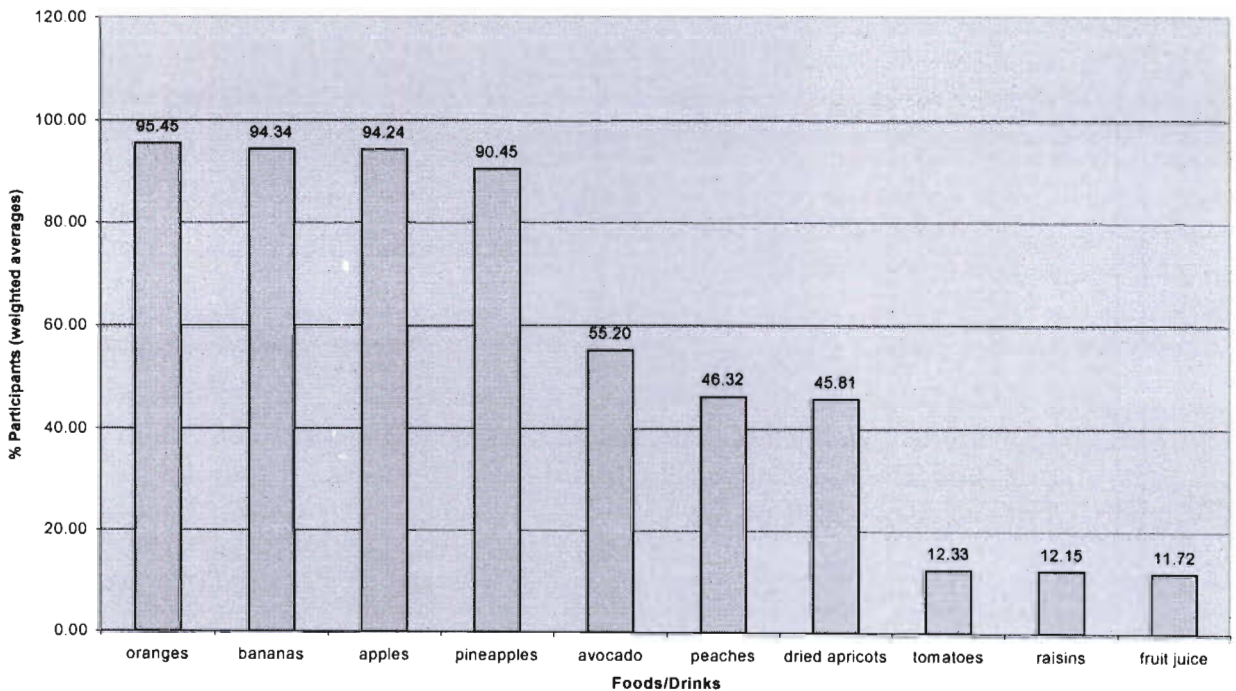


Figure 6.2 Common “fruits” as selected by interview participants

Common examples of “vegetables” cited/selected by focus group and interview participants included spinach, pumpkin, butternut, tomato, green beans, carrot, cabbage, cauliflower and onions. Additional vegetables mentioned by specific participant groups included imifino and pumpkin leaves (rural Black participants), gem squash, canned baked beans and frozen vegetables (mixed, carrots, corn, peas) (urban formal Indian and White participants), and broccoli, celery, baby marrow, mushrooms and leeks (urban formal White participants). Common “vegetables” selected by interview participants are depicted in Figure 6.3.

Potato, sweet potato, mealies, sweet corn and amadumbes, previously cited/selected as starchy foods, were also included in the vegetable group. Indian participants included legumes (canned baked beans) in their categorisation of vegetables. All urban participants queried the categorisation of avocados (a fruit, vegetable or fat?).

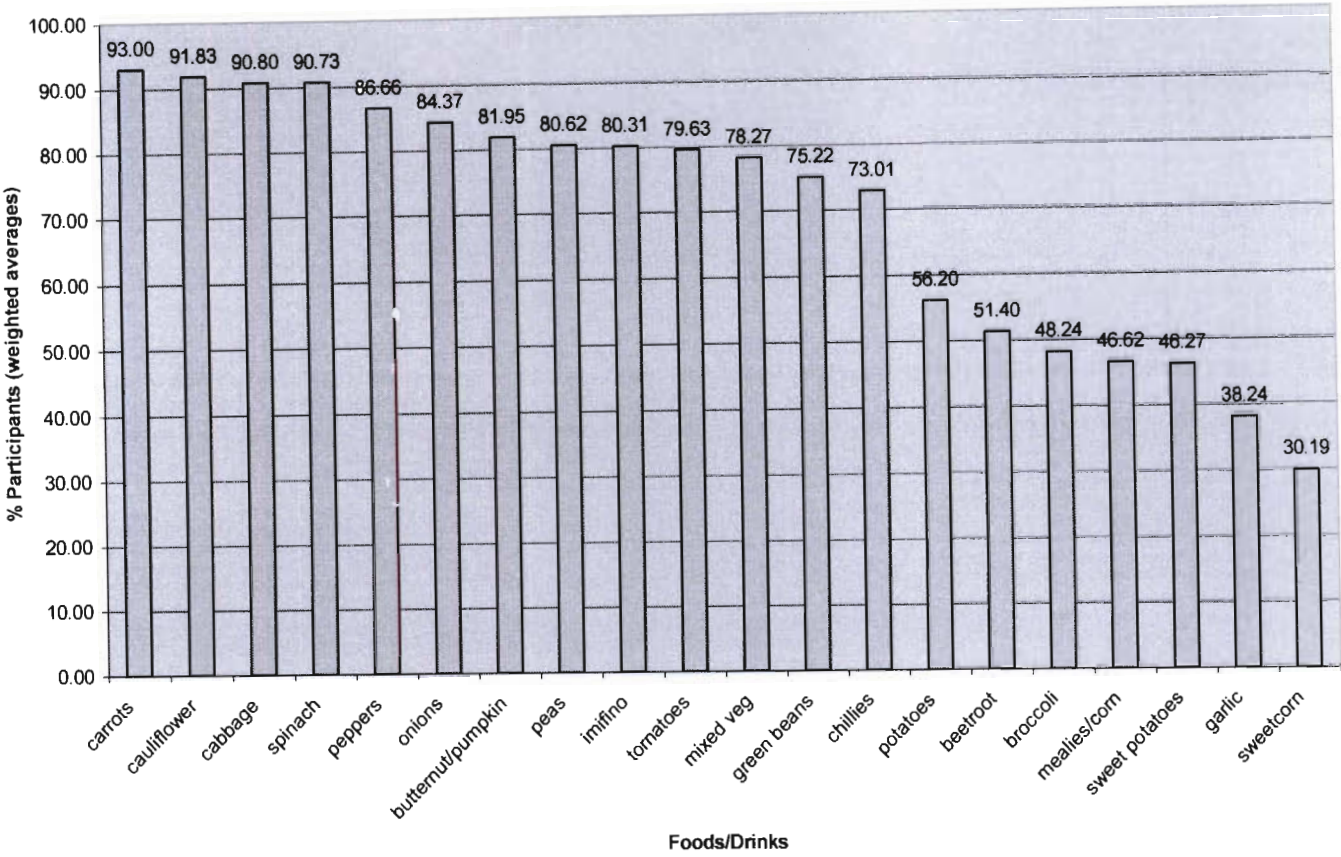


Figure 6.3 Common “vegetables” as selected by interview participants

6.2.3.3 Legumes

Urban formal Indian participants cited/selected the greatest variety of “legumes”. Common examples of “legumes” cited/selected by focus group and interview participants were dry beans, canned baked beans and split peas (dhal). Common “legumes” selected by interview participants are depicted in Figure 6.4.

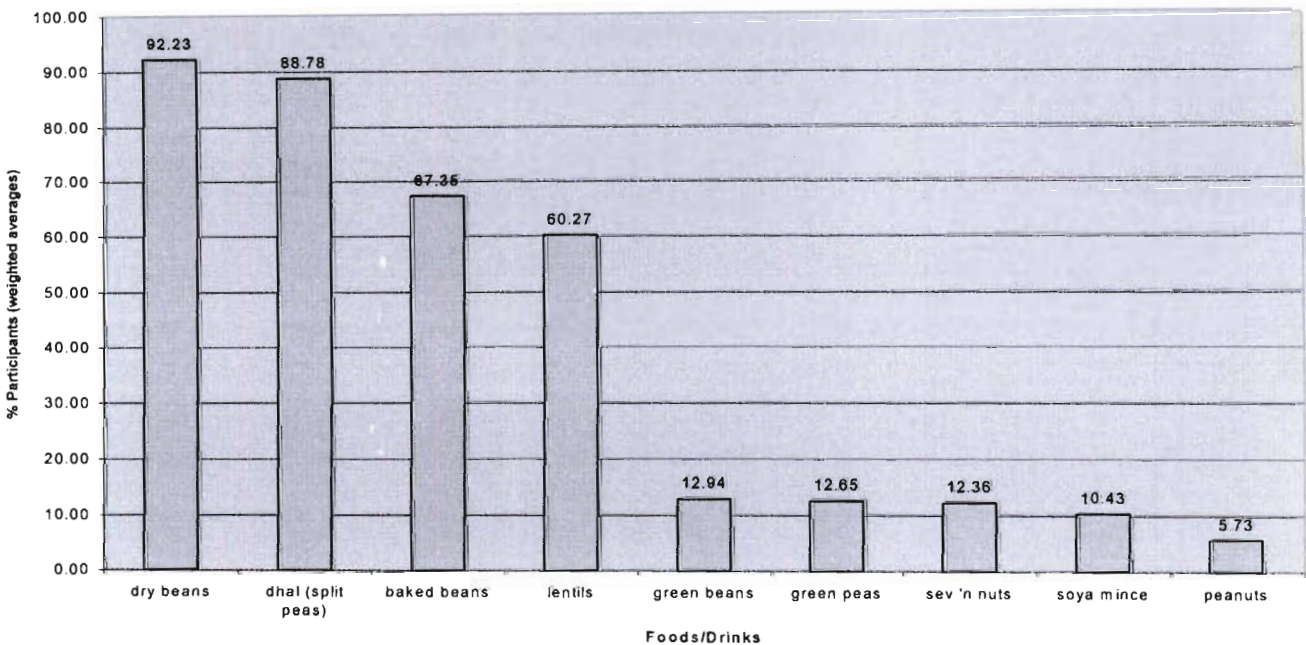


Figure 6.4 Common “legumes” as selected by interview participants

Urban formal Indian participants were uncertain about the categorisation of canned baked beans (starchy food, vegetable or legume?). Urban formal White participants expressed confusion about the separate categorisation of legumes and meat (both being foods rich in protein). Both urban formal Indian and White participants queried the categorisation of nuts and peanut butter as legumes; also categorising them as “fats” and “snack foods” (“because of their high fat content”).

6.2.3.4 Foods from animals

Urban formal White participants cited/selected the greatest variety of “foods from animals”, particularly of dairy foods. Common examples of “foods from animals” cited/selected by focus group and interview participants were eggs, poultry, fish, red and processed meat, and dairy products. Common “foods from animals” selected by interview participants are depicted in Figure 6.5.

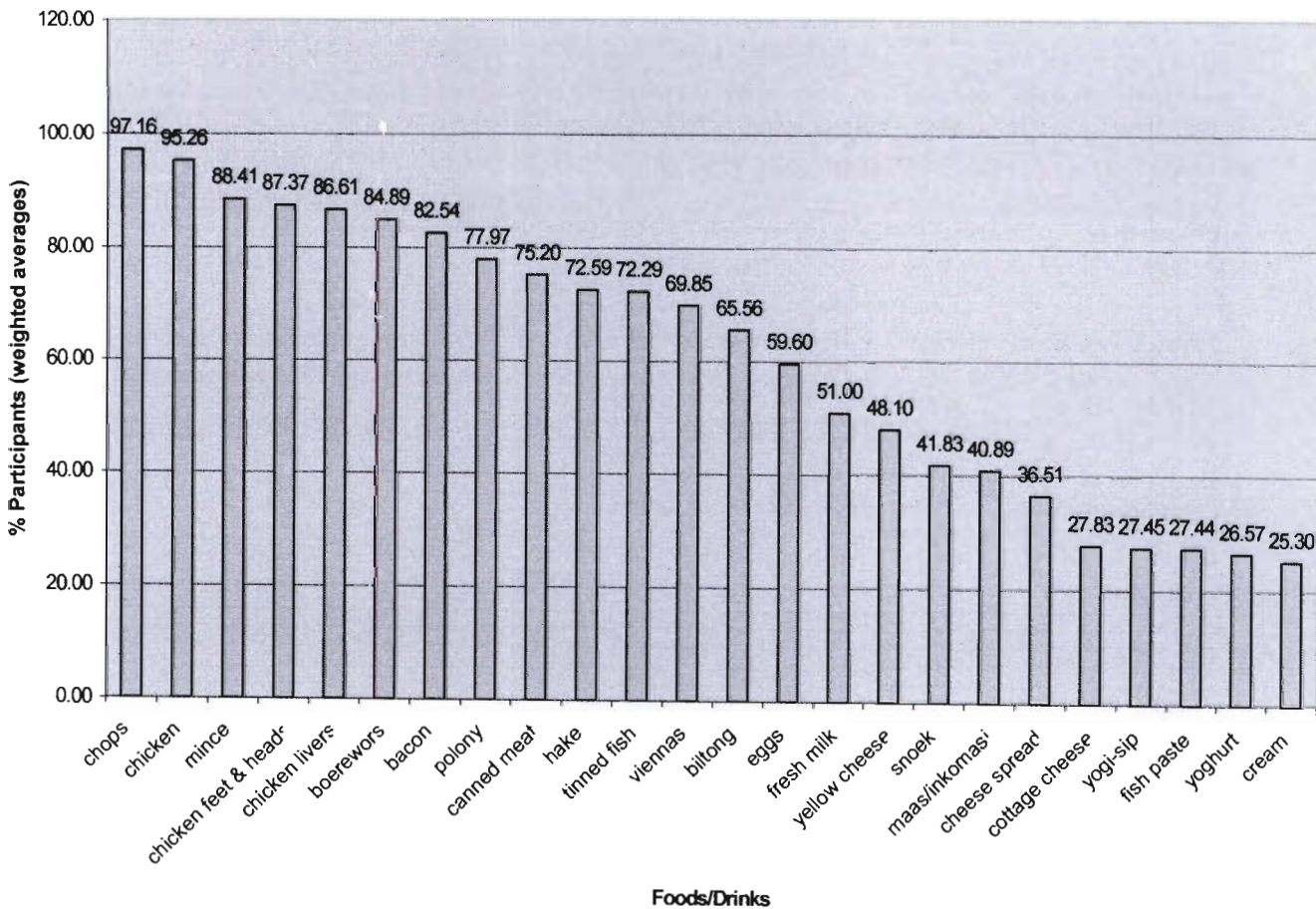


Figure 6.5 Common “foods from animals” as selected by interview participants

Only Black participants cited/selected “maas” as a “food from animals”. Fish, eggs and cheese were commonly cited/selected items for all urban participants. Urban formal Indian participants were the only participants to not identify beef. Urban formal White participants expressed uncertainty regarding the categorisation of condensed milk (food from animal or dairy food?). Across all participant groups, butter and cream were categorised as dairy foods.

6.2.3.5 Foods containing fat

Common “foods containing fat” cited/selected by focus group and interview participants were oil, butter and margarine, that is, fats used in cooking. Common “foods containing fats” selected by interview participants are depicted in Figure 6.6.

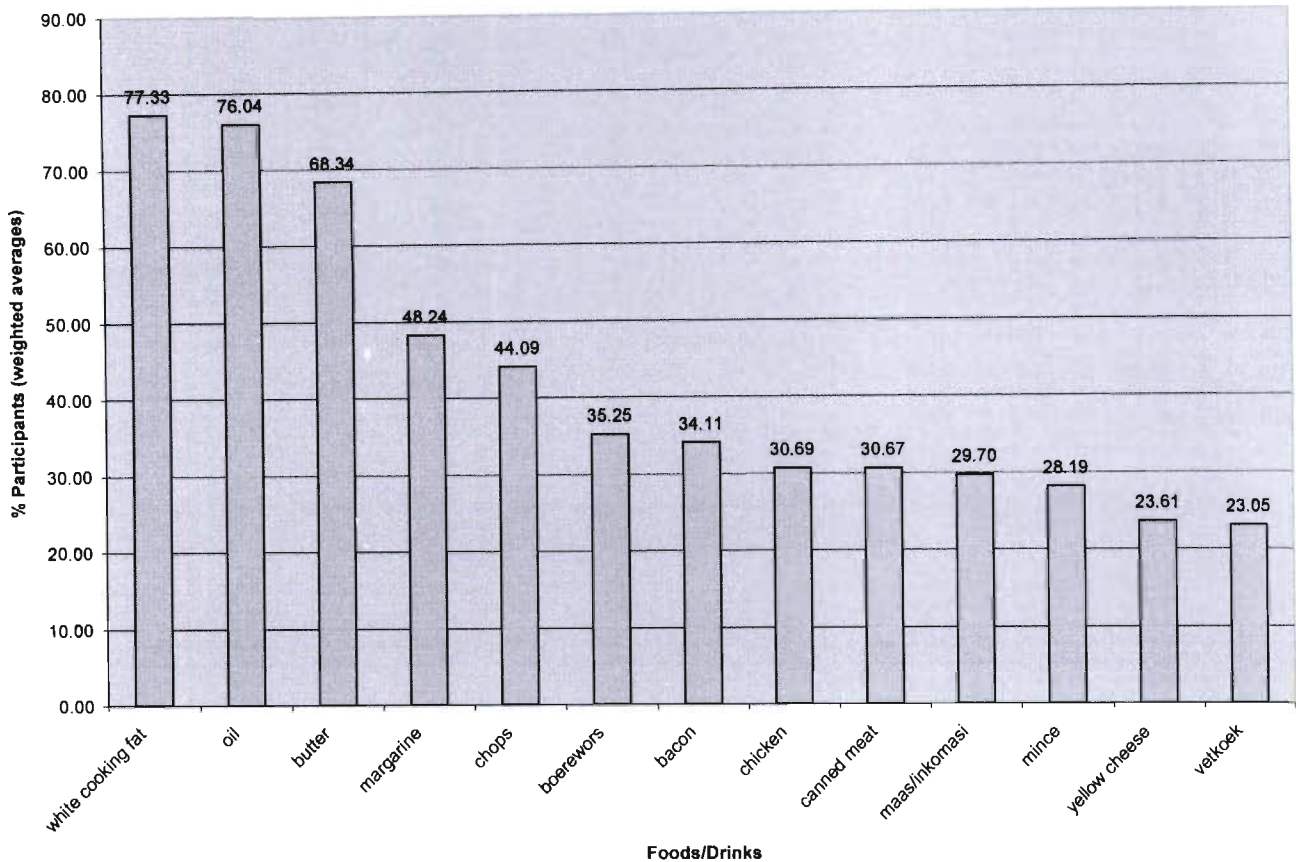


Figure 6.6 Common “foods containing fat” as selected by interview participants

Urban formal Indian participants mentioned foods with a high visible fat content (fatty meat, chicken skin). Urban formal White participants were the only participant group to include foods with a high fat composition, although there was some uncertainty as to the categorisation of avocados (fruit or vegetable?), nuts (legume?) and peanut butter (legume?). Rural Black participants queried the placement of mayonnaise, stating that they thought it contained milk and should therefore be classified as a dairy food.

6.2.3.6 Foods containing salt

For focus group and interview participants, salt was cited/selected as the most common “food containing salt” and the most commonly added seasoning (used to enhance the taste of food both in food preparation/cooking and table use). Other foods cited/selected by focus group and interview participants as “foods containing salt” included stock cubes, soup powders and Aromat. Only urban formal Indian and White participants considered foods with a high salt composition, such as “biltong”, nuts, chips, popcorn, salted meats (bacon), as “foods containing salt”. Common “foods containing salt” selected by interview participants are depicted in Figure 6.7.

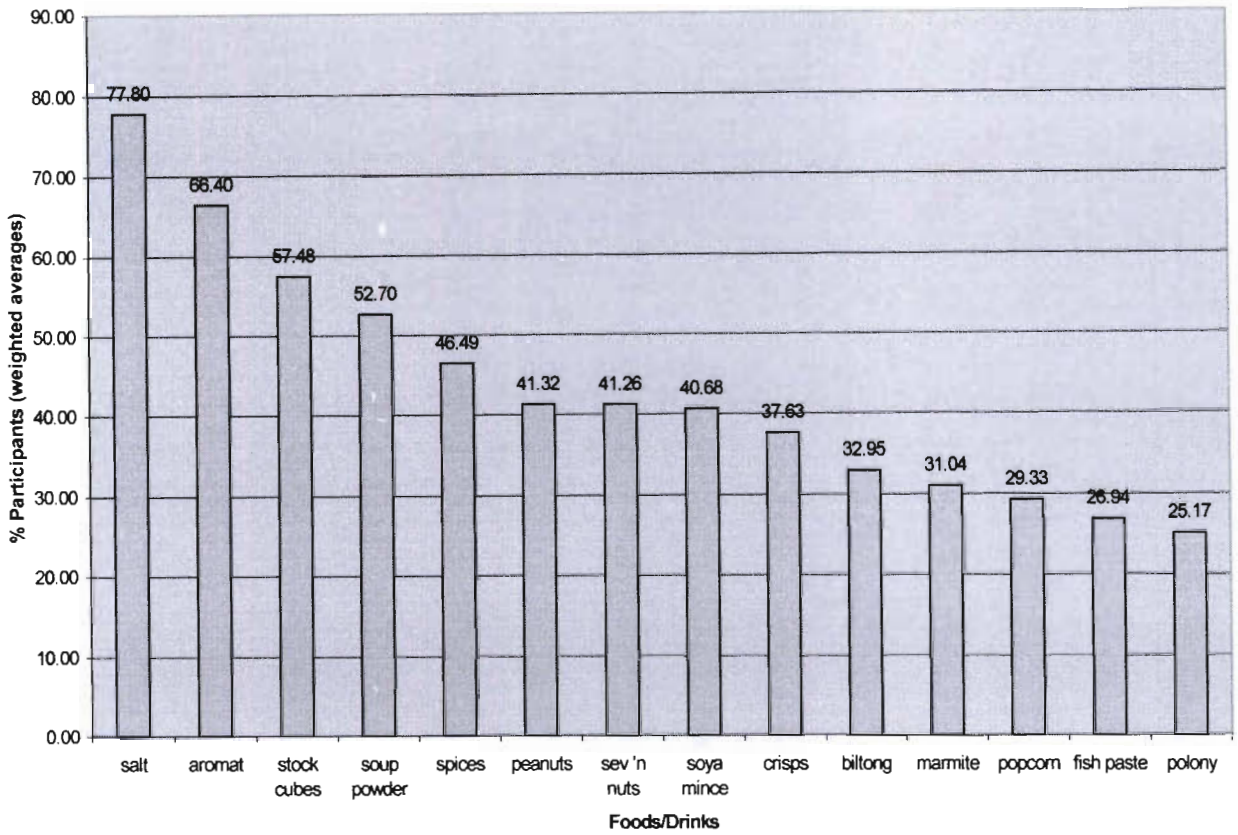


Figure 6.7 Common “foods containing salt” as selected by interview participants

6.2.3.7 Alcoholic beverages

“Alcoholic beverages” commonly cited/selected by focus group and interview participants are illustrated in Table 6.43, with whiskey, beer and wine being cited/selected by all participant groups.

Table 6.43 Alcoholic beverages commonly cited/selected by focus group/interview participants

ALCOHOLIC BEVERAGES	ENUMERATOR AREAS				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
Beer	X	X	X	X	X
Whiskey	X	X	X	X	X
Wine	X	X	X	X	X
Brandy	X		X	X	X
Cider		X		X	X
Home brew (IsiZulu)	X	X	X		
Pineapple brew (Imbamba)		X	X		
Cane				X	X
Cocktails				X	X
Gin				X	X
Liqueurs					X
Vodka				X	

6.2.3.8 Snacks

Focus group participants made two distinctions between the foods/drinks commonly cited as “snacks”, namely:

* luxury” (ready-made convenience) food items (regarded as having little nutritional value)
These included cakes, biscuits, chips, chocolates, ice-cream, sweets, Chelsea buns, muffins, doughnuts, nuts, samosas, chilli bites, pizza, sausage rolls, and pies.

* smaller portions of the types of foods usually eaten as main meals
These included sandwiches (cheese, egg, cold meats, peanut butter), bread, leftover food (e.g.: roti, phutu), milk, yoghurt, maas, cheese, fresh and dried fruit, and fruit juices.

Common “snacks” selected by interview participants are depicted in Figure 6.8 and feature similar items to those cited by focus group participants.

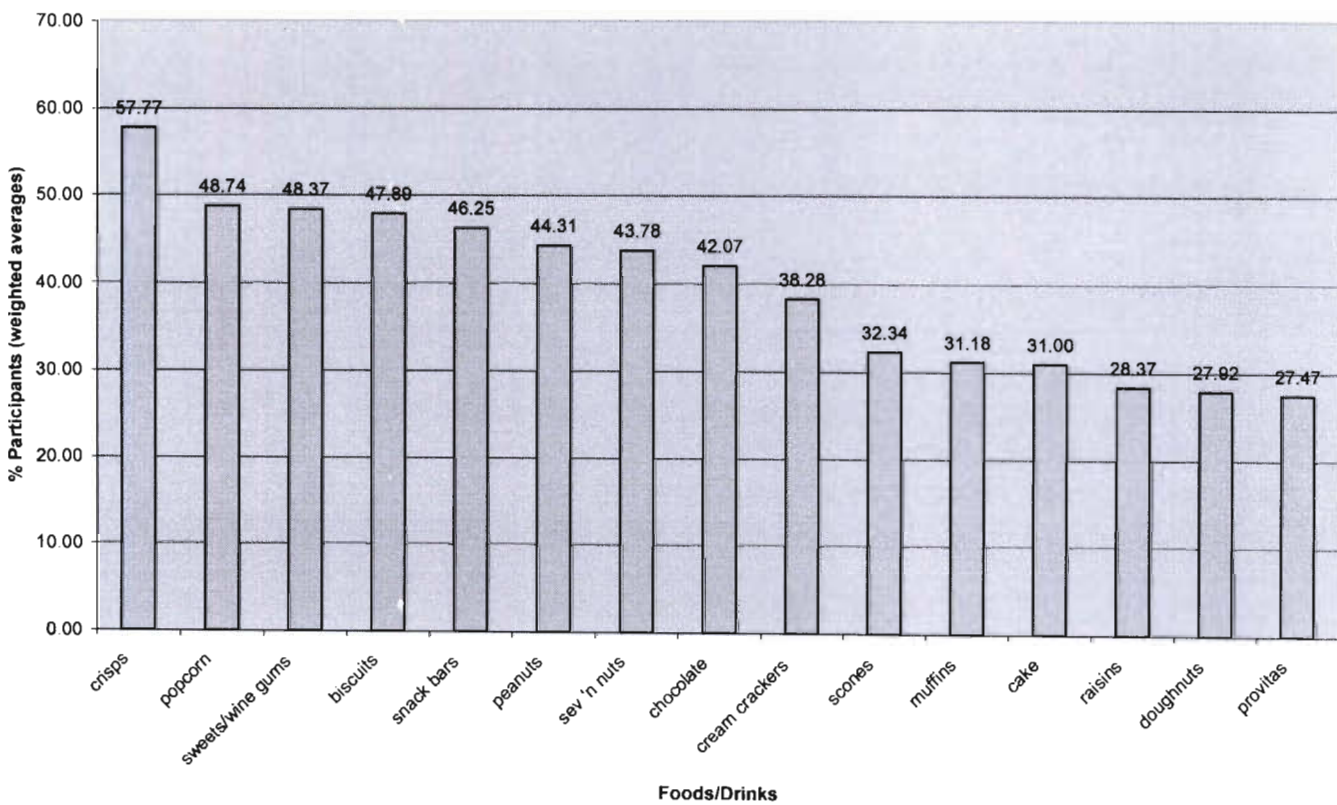


Figure 6.8 Common “snacks” as selected by interview participants

6.2.4 Previous exposure to and reported usage of food guides commonly used in South Africa, and any influence this may have had on personal food categorisation

Interview participants were shown colour (A4) illustrations of 5 food guides commonly used in South Africa for the purposes of nutrition education, namely, the 3 food groups, 5 food groups, food guide pyramid, food square and mixed meal guide (see Appendix 8). Participants were asked if they had seen or heard about these food guides, where and from whom, and whether they used the food guides to plan meals for themselves and their families.

6.2.4.1 Reported food guide exposure

Overall reported exposure by interview participants to food guides commonly used in South Africa ranged from 15.45% to 65.63%. An overall average of 33.71% of interview participants reported **no** exposure (see Table 6.44). Participants were most familiar with the 3 Food Group Guide (overall average 65.63%), with the Pyramid and Mixed Meal Guide being least familiar (19.19% and 15.45% respectively). Among urban formal Indian and White participants, familiarity with the 5 Food Group Guide was also high at 75.0% each.

Food guide exposure was highest among urban formal Indian and White participants (with both enumerator areas reporting only 10% no exposure) followed by urban formal Black participants (reporting 17.5% no exposure). Food guide exposure was lowest among rural Black participants (reporting 44.0% no exposure), followed by urban informal Black participants (reporting 32.5% no exposure).

For ease of identification and comparison, numerical results as presented in Table 6.44 are also presented in graphical form in Figure 6.9.

Table 6.44 Food guide exposure as reported by interview participants

FOOD GUIDES	ENUMERATOR AREAS (% participants) (n=230)					Overall food guide exposure (weighted average)
	Rural Black (n=70)	Urban Informal Black (n=40)	Urban Formal Black (n=40)	Urban Formal Indian (n=40)	Urban Formal White (n=40)	
3 Food Groups	52.8	60.0	70.0	80.0	75.0	65.63
5 Food Groups	25.7	22.5	45.0	75.0	75.0	45.72
Pyramid	7.1	12.5	22.5	22.5	40.0	19.19
Food Square	25.7	37.5	35.0	55.0	20.0	33.40
Mixed Meals	7.1	22.5	20.0	32.5	2.5	15.45
No exposure to any guides listed above	44.0	32.5	17.5	10.0	10.0	33.71

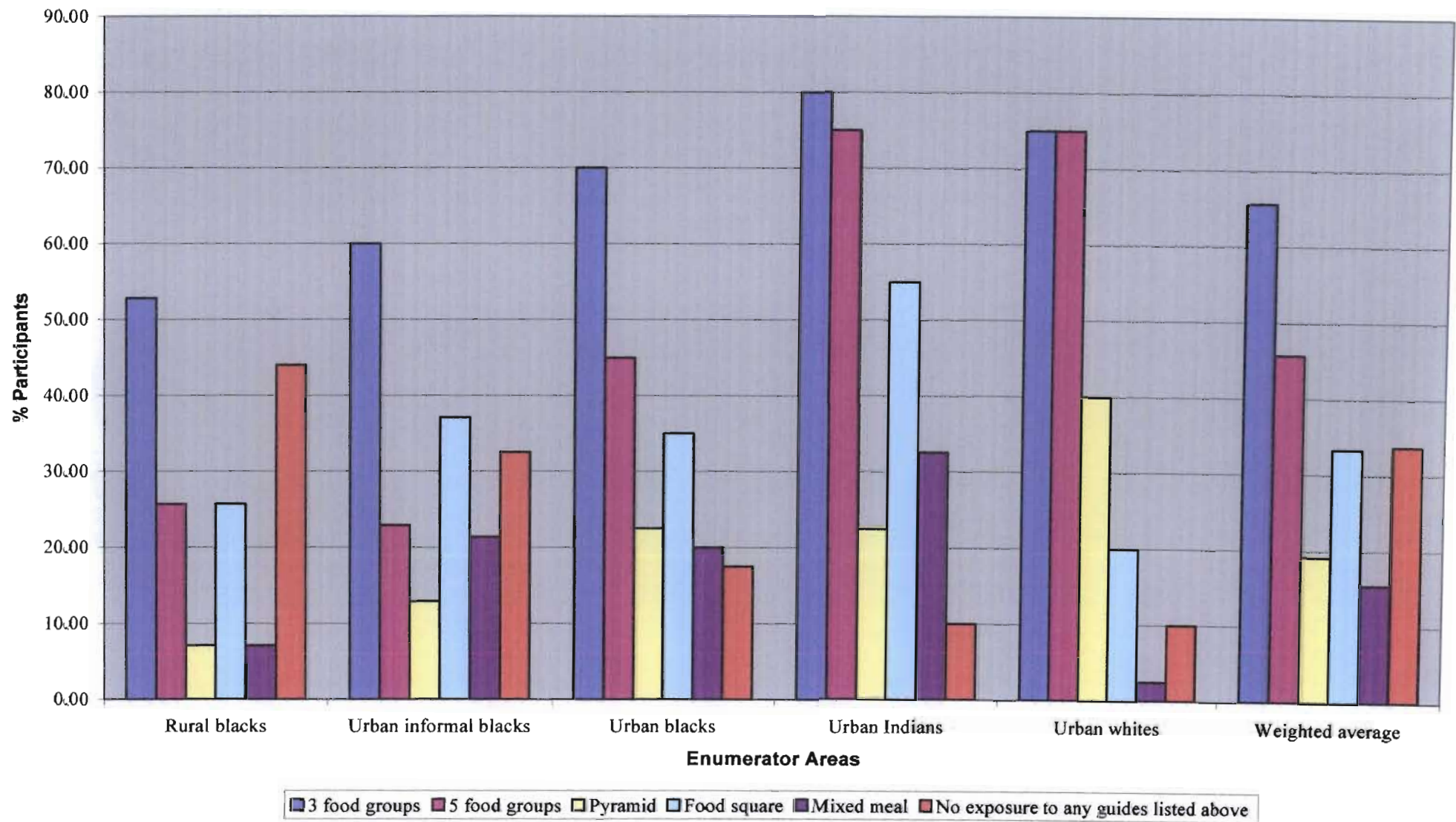


Figure 6.9 Food guide exposure as reported by interview participants

6.2.4.2 Reported primary sources of exposure to food guides

Urban formal Indian and White participants reported exposure to food guides predominantly through the school syllabus. Urban formal Indian participants also reported high exposure through posters in clinics. For rural, urban informal and urban formal Black participants reported exposure to food guides was predominantly through posters in clinics. Urban formal Black participants also reported high exposure through hospitals. Overall exposure to all food guides, excluding the Food Pyramid, was reportedly gained predominantly through posters in the clinic, namely, the 3 Food Group Guide (average 54.97%), the 5 Food Group Guide (average 38.09%), the Food Square (average 40.26%), and the Mixed Meal Guide (average 24.99%). Overall exposure to the Food Pyramid was reportedly gained predominantly through schools (average 40.90%) (see Table 6.45). For ease of identification and comparison, numerical results as presented in Table 6.45 are also presented in graphical form in Figure 6.10.

Table 6.45 Primary sources of exposure to food guides as reported by interview participants

SOURCES OF EXPOSURE	ENUMERATOR AREAS (% participants)					Overall per food guide (weighted average)
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White	
3 Food Groups	(n=37)	(n=24)	(n=28)	(n=32)	(n=30)	(n=151)
- clinic	94.6	79.2	53.6	40.6	3.3	54.97
- nurse	46.0	16.5	14.3	21.9	0.0	21.19
- school	5.4	12.5	28.6	34.4	46.7	25.18
- hospital	0.0	4.0	32.1	28.1	13.3	15.19
5 Food Groups	(n=18)	(n=9)	(n=18)	(n=30)	(n=30)	(n=105)
- clinic	77.8	66.7	44.4	40.0	0.0	38.09
- nurse	27.8	22.0	22.2	13.3	0.0	14.26
- school	11.1	22.0	11.1	30.0	50.0	28.55
- hospital	0.0	11.0	50.0	13.3	6.7	15.23
Pyramid	(n=5)	(n=5)	(n=9)	(n=9)	(n=16)	(n=44)
- clinic	100.0	60.0	55.6	22.2	0.0	34.10
- nurse	40.0	40.0	0.0	0.0	0.0	9.09
- school	0.0	40.0	22.2	44.4	62.5	40.90
- hospital	0.0	0.0	22.2	11.1	0.0	6.81
Food Square	(n=18)	(n=15)	(n=14)	(n=22)	(n=8)	(n=77)
- clinic	61.1	60.0	35.7	27.3	0.0	40.26
- nurse	22.2	7.0	14.3	0.0	0.0	9.15
- school	11.1	26.7	21.4	40.9	12.5	24.67
- hospital	0.0	0.0	28.6	18.2	0.0	10.40
Mixed Meals	(n=5)	(n=9)	(n=8)	(n=13)	(n=1)	(n=36)
- clinic	40.0	44.4	12.5	15.4	0.0	24.99
- nurse	40.0	22.2	37.5	0.0	0.0	19.44
- school	0.0	33.3	12.5	30.8	0.0	22.23
- hospital	0.0	11.1	50.0	23.1	0.0	22.23
Range of Exposure per Source						
- clinic	40.0 – 100.0	44.4 – 79.2	12.5 – 55.6	15.4 – 40.6	0.0 – 3.3	24.99 - 54.97
- nurse	22.2 – 46.0	7.0 – 40.0	0.0 – 37.5	0.0 – 21.9	0.0	9.09 - 21.19
- school	0.0 – 11.1	12.5 – 40.0	11.1 – 28.6	30.0 – 44.4	0.0 – 62.5	22.23 - 40.90
- hospital	0.0	0.0 – 11.1	22.2 – 50.0	11.1 – 28.1	0.0 – 13.3	6.81 - 22.23

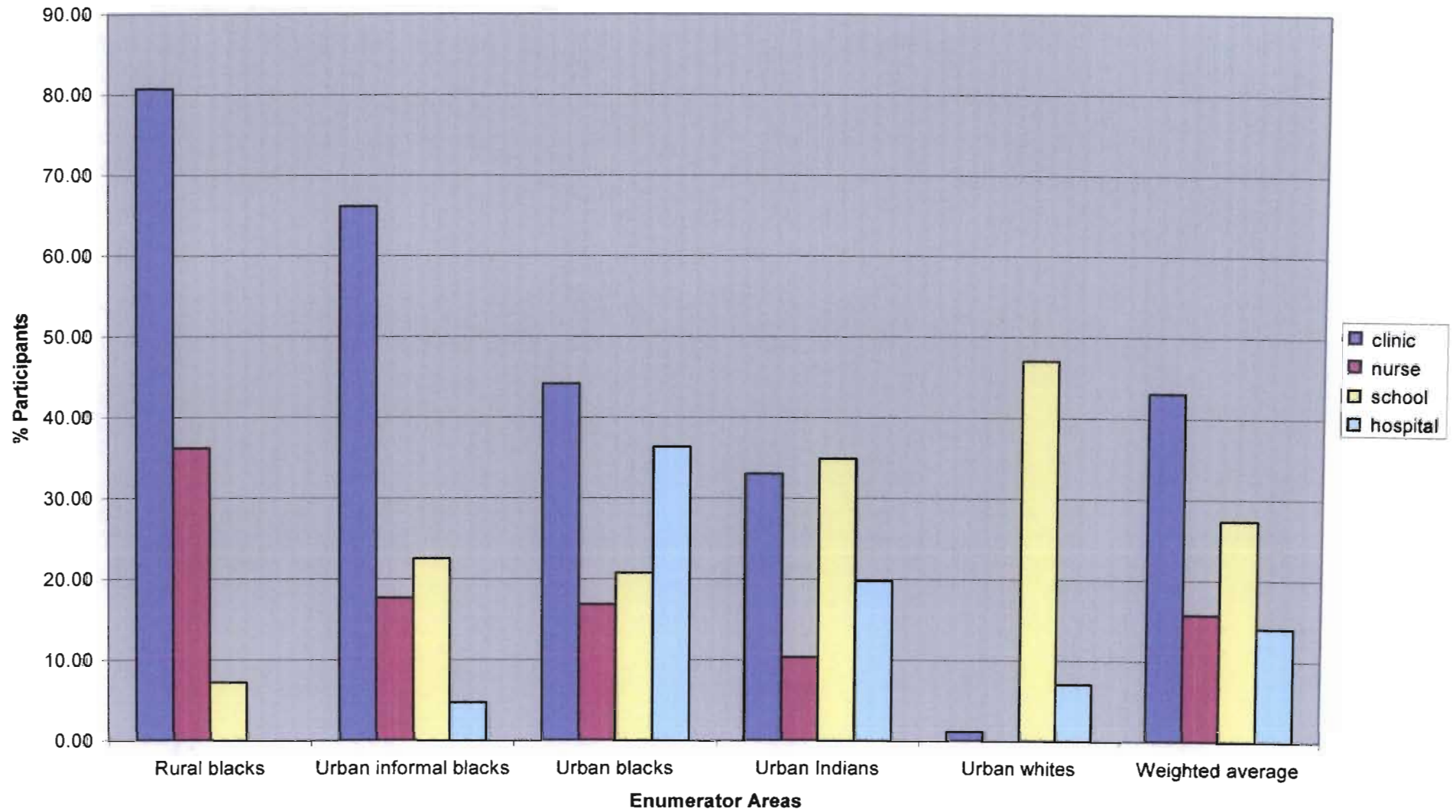


Figure 6.10 Primary sources of exposure to food guides as reported by interview participants

6.2.4.3 Reported food guide usage and reasons for non-usage

Results regarding reported usage of food guides to plan meals by interview participants who reported previous exposure to food guides are illustrated in Table 6.46. Reported usage was low across all enumerator areas, with an overall range of 22.22% to 37.14%. Urban formal Indian participants reported the highest range of usage (22.2% - 62.5%). Urban informal Black participants reported the lowest range of usage (11.1% - 22.2%). Reported food guide usage was highest overall for the 5 Food Group Guide (average 37.14%), followed by the 3 Food Group Guide (average 33.77%), the Food Square (average 27.27%), the Food Pyramid (average 22.73%) and the Mixed Meal Guide (average 22.22%).

Urban formal Indian and urban formal Black participants reported highest usage of the 3 Food Group Guide in comparison to the other food guides, namely, 62.50% and 42.86% respectively. Urban formal White participants reported highest usage of the 5 Food Group Guide (46.67%). Rural and urban informal Black participants did not report a high usage for any particular food guide.

For ease of identification and comparison, numerical results as presented in Table 6.46 are also presented in graphical form in Figure 6.11.

Table 6.46 Food guide usage by interview participants reporting previous exposure to food guides

FOOD GUIDE	ENUMERATOR AREAS (% participants)					
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White	Overall per food guide (weighted average)
3 Food Groups (n = exposure)	(n=37)	(n=24)	(n=28)	(n=32)	(n=30)	(n=151)
% Reported usage	24.32 (n=9)	16.67 (n=4)	42.86 (n=12)	62.50 (n=20)	20.00 (n=6)	33.77 (n=51)
5 Food Groups (n = exposure)	(n=18)	(n=9)	(n=18)	(n=30)	(n=30)	(n=105)
% Reported usage	27.78 (n=5)	11.11 (n=1)	27.78 (n=5)	46.67 (n=14)	46.67 (n=14)	37.14 (n=39)
Food Pyramid (n = exposure)	(n=5)	(n=5)	(n=9)	(n=9)	(n=16)	(n=44)
% Reported usage	20.00 (n=1)	20.00 (n=1)	11.11 (n=1)	22.22 (n=2)	31.25 (n=5)	22.73 (n=10)
Food Square (n = exposure)	(n=18)	(n=15)	(n=14)	(n=22)	(n=8)	(n=77)
% Reported usage	22.22 (n=4)	13.33 (n=2)	21.43 (n=3)	54.55 (n=12)	0.00 (n=0)	27.27 (n=21)
Mixed Meals (n = exposure)	(n=5)	(n=9)	(n=8)	(n=13)	(n=1)	(n=36)
% Reported usage	20.00 (n=1)	22.22 (n=2)	25.00 (n=2)	23.08 (n=3)	0.00 (n=0)	22.22 (n=8)
Range of Reported Usage	20.0 – 27.8	11.1 – 22.2	11.1 – 42.9	22.2 – 62.5	0.0 – 46.7	22.22 – 37.14

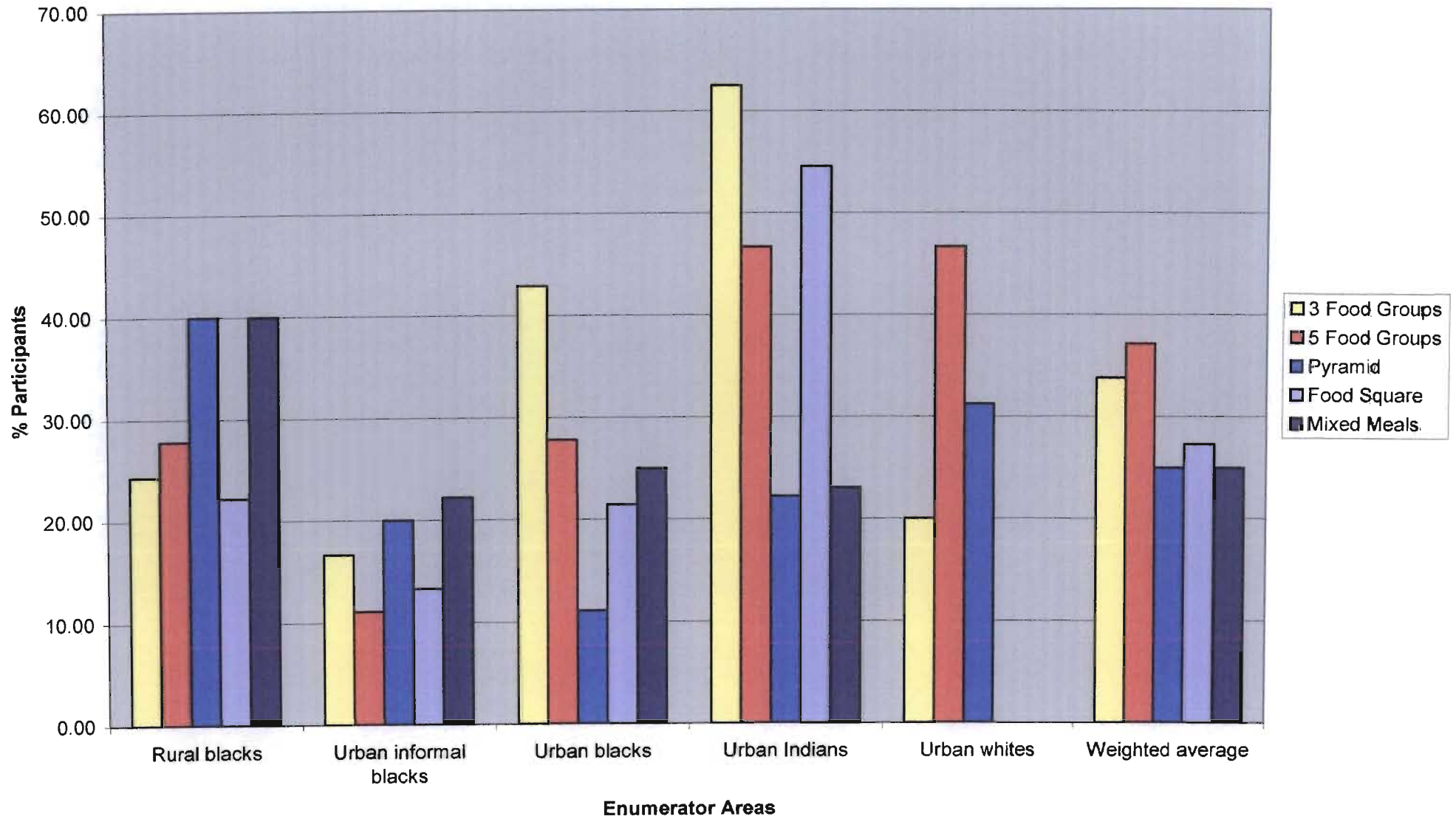


Figure 6.11 Food guide usage by interview participants reporting previous exposure to food guides

Across all enumerator areas, primary reasons cited for non-usage of food guides were:

* a lack of knowledge and understanding of how

(*“it was never explained”, “it is not clear how to make meals”, “the picture is complex”*)

* a personal choice not to do so because of food not being available, food being expensive, no time, laziness or habit

(*“I don’t plan meals like that”, “I don’t always have the foods mentioned”, “there are some foods in the picture I don’t eat”, “I use my own discretion”, “it takes too much effort”*)

Primary reasons cited for usage of food guides (as used by the majority of participants, namely, the 3 and 5 Food Group Guides) were encouragement to eat a variety of foods (especially everyday), to eat different foods from each group at each meal; and to eat more fruits and vegetables.

6.2.4.4 Influence of reported exposure to and usage of food guides on personal food categorisation

Reported food guide exposure and usage was compared with personal food categorisation to determine any influence food guides may have had on personal food categorisation in terms of number of personal food categories and names ascribed to personal food categories.

Of the interview participants who reportedly used food guides for meal planning, only two participants (14.29%), both urban formal Indian participants, reported the same number of personal food categories (n=5) to that of the food guide they reportedly used, namely, the 5 Food Group Guide (see Table 6.47).

Table 6.47 Influence of reported 5-food group guide usage on number of personal food categories

5-FOOD GROUP GUIDE USAGE (PFC = personal food categories)	ENUMERATOR AREAS				
	Rural Black	Urban Informal Black	Urban Formal Black	Urban Formal Indian	Urban Formal White
No. users	5	1	5	14	14
No. participants with PFC of 5	0	0	0	2	0
% users with PFC of 5	0	0	0	14.29	0

Names of personal food categories given by the two participants who reported the same number of personal food categories (n=5) to that of the food guide they reportedly used, namely, the 5 Food Group Guide, are depicted in Table 6.48.

Table 6.48 Influence of reported usage of 5-food group guide on names of personal food categories

5 FOOD GROUP GUIDE: FOOD CATEGORY NAMES	NAMES OF PERSONAL FOOD CATEGORIES	
	Participant #1	Participant #2
Grains and grain products		
Fats and oils		Fats
Meat and meat substitutes	Meats	Meats
Milk and milk products		
Fruit and vegetables	Fruits and vegetables	Fruits and vegetables
	Groceries	
	Seasonings	
	Snacks	Junk foods/sweets
		Liquids

6.2.5 The compatibility of the proposed South Africa FBDGs in terms of personal and FBDG food categorisation, and food categorisation as depicted in the food guides that are commonly used in South Africa for nutrition education.

For nutrition education tools such as FBDGs to be effective in providing practical recommendations on daily food intake, it is recommended that:

- they acknowledge the way(s) in which commonly consumed foods/drinks are categorised by the consumer (personal food categorisation)
- the food categories implied by the FBDGs are understood by the consumer
- the FBDGs are supported by a food guide with compatible food groupings

The compatibility of the proposed South African FBDGs was therefore evaluated in terms of:

- * personal food categorisation (way/s in which participants categorise common foods/drinks without food group prompting);
- * FBDG food categorisation (participant selection of foods/drinks per food category as implied by the FBDGs, namely, starchy foods, fruits, vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks); and
- * food groupings as depicted in the two food guides reported by participants as the most commonly used in South Africa, namely the 3- and 5-food group guides.

6.2.5.1 Compatibility of proposed FBDGs in terms of personal food categorisation

The number of piles into which participants categorised common foods/drinks ranged from one and two piles, up to 48 piles. The most common number of piles ranged from 7 – 15, with 11 piles being the most common for all participant groups. Names given to the most common piles of foods showed remarkable similarity across all enumerator areas. A minority of participants (<3.5%) suggested additional ways in which they might categorise “similar” foods.

Names given to personal food categories matched all but two of the proposed FBDG food categories (see Table 6.49), namely, “foods from animals” and “legumes”.

Table 6.49 Comparison of food categories: Proposed FBDGs versus participant food categorisation versus food group guide categorisation

PROPOSED FBDGs (food categories=11)	PARTICIPANT FOOD CATEGORISATION		FOOD GROUP GUIDE CATEGORISATION	
	Personal food categorisation (as done by participants) (food categories=11)	FBDG food categorisation (as done by participants)	3 food group categorisation (as defined by the guide) (food categories=3)	5 food group categorisation (as defined by the guide) (food categories=5)
Category names and food example				
Starchy foods	Starchy foods/Staples/Cereals/ Breads/Flour products <i>bread (white/brown), breakfast cereals, flour, mealie-meal, mealie-rice, oats, rice (white/brown), roti, samp</i>	<i>white rice, samp, mealie-rice, mealie-meal, potatoes, flour, brown/white bread, brown rice, rusks, pasta, mealies (corn), sweet potatoes</i>	Energy foods <i>mealies (corn), oats porridge, wholewheat/brown bread, samp, oil, white cooking fat (Holsum)</i>	Grains and grain products <i>wholewheat/rye bread, brown bread rolls, muesli cereal, spaghetti, noodles, brown rice, wholewheat crispbreads</i>
Fats	Fats/Oils <i>oil, white cooking fat (Holsum)</i>	<i>white cooking fat, oil, butter, margarine, chops, boerewors, bacon, chicken, canned meat, maas/inkomasi, mince</i>		Fats and oils <i>salad dressing, mayonnaise, oil, margarine, butter, bacon, olives</i>
Food from animals	Milk/Dairy <i>cream, maas, milk (fresh, powdered, flavoured), yoghurt, yogi-sip</i>	<i>chops, chicken, mince, chicken heads & feet, chicken livers, boerewors, bacon, polony, canned meat, hake, tinned fish, viennas, biltong, eggs, fresh milk, yellow cheese, snoek, maas/inkomasi, cheese spread, cottage cheese, yogi-sip, fish paste, yoghurt, cream</i>	Body-building foods <i>chops, chicken, fish, sausages, eggs, yellow cheese, dry beans, soya</i>	Milk and milk products <i>fresh milk, milk powder, yoghurt, flavoured milk, cottage cheese, yellow cheese</i>
	Meats <i>bacon, biltong, boerewors, chicken, chicken feet and heads, chicken livers, chops, eggs, hake, canned meat, mince, polony, snoek, tinned fish, viennas</i>			Meat and meat substitutes <i>chicken, fish, chops, steak, eggs, peanut butter, peanuts, dry beans, butter beans, lentils</i>
Legumes	Beans <i>dhal (split peas), lentils</i>	<i>dry beans, dhal (split peas), baked beans, lentils</i>		
Fruits/Vegetables	Fruits <i>apples, apricots, bananas, oranges, peaches, pineapples</i>	<i>oranges, bananas, apples, pineapples, avocado, peaches, dried apricots</i>	Protective foods <i>apple, banana, pawpaw, tomato, pumpkin, cabbage, green beans, peas, potatoes</i>	Fruit and vegetables <i>banana, pineapple, oranges, melon, grapes, kiwifruit, nectarines, grapefruit, dried apple, dried apricots, prunes, raisins, cabbage, pumpkin, broccoli, cauliflower, spinach, leeks, green beans, peppers, mushrooms, carrots, tomatoes, mealies (corn)</i>
	Vegetables/Salads <i>green beans, beetroot, broccoli, cabbage, carrots, cauliflower, butternut/pumpkin/squash, chillies, mixed vegetables, onion, peas, peppers, spinach, sweetcorn, sweet potatoes, tomatoes, imifino (wild spinach)</i>	<i>carrots, cauliflower, cabbage, spinach, peppers, onions, butternut/pumpkin, peas, imifino, tomatoes, mixed vegetables, green beans, chillies, potatoes, beetroot, broccoli, mealies (corn), sweet potatoes, garlic, sweetcorn</i>		

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Continuation of Table 6.49

Comparison of food categories: Proposed FBDGs versus participant food categorisation versus food group guide categorisation

PROPOSED FBDGs (food categories=11)	PARTICIPANT FOOD CATEGORISATION		FOOD GROUP GUIDE CATEGORISATION	
	Personal food categorisation (as done by participants) (food categories=11)	FBDG food categorisation (as done by participants)	3 food group categorisation (as defined by the guide) (food categories=3)	5 food group categorisation (as defined by the guide) (food categories=5)
Category names and food example				
Water	Drinks & Alcohol	<i>water</i>	----	----
Alcohol	<i>coffee, commercial beer, cooldrinks, fruit juice, spirits (Whisky, Cane), tea, water (plain/bottled), wine, Isizulu (Zulu beer)</i>	<i>spirits (Brandy, Whiskey), beer (including traditional home brews), cider, wine</i>	----	----
Salt	Spices/Seasonings	<i>salt, Aromat, stock cubes, soup powder, spices, peanuts, sev 'n nuts, soya mince, crisps, biltong, Marmite, popcorn, fish paste, polony</i>	----	----
	Spreads	<i>fish paste, honey, jam, Marmite, peanut butter, syrup</i>	----	----
Snacks	Snacks/Sweets/Cakes/Desserts	<i>crisps, popcorn, sweets/wine gums, biscuits, snack bars, peanuts, Sev 'n nuts, chocolate, cream crackers, scones, muffins, cake, raisins, doughnuts, Provitas</i>	----	----
Variety	----	----	----	----
Be active	----	----	----	----

6.2.5.2 Compatibility of proposed FBDGs in terms of FBDG food categorisation

The selection of foods by participants according to the food categories as implied by the FBDGs reflected a high level of comprehension as to the meaning of the FBDG food categories (see Table 6.49). Indecision did arise regarding the categorisation of certain foods. Such indecision appeared to relate to the manner in which these foods were eaten, the origin of the food, and exposure to nutrition information. The use of the terms “legumes”, “foods from animals” and “healthier snacking” were not clearly understood, and as a result created uncertainty as to the foods in these categories.

6.2.5.3 Compatibility of proposed FBDGs in terms of 3- and 5-food group guides

A comparison of the food categories as implied by the FBDGs against those of the 3- and 5-Food Group Guides shows that these two reportedly commonly used food guides do not complement the FBDGs in terms of advice regarding legumes, water, alcohol and salt consumption. Advice about the other FBDG messages (“Enjoy a variety of foods”, “Be active” and “Eat healthier snacks”) is also not evident (see Table 6.49).

In terms of foods used to illustrate the 3- and 5-Food Group Guides, many of the foods/drinks depicted are items not commonly consumed across all enumerator areas, such as white cooking fat, oats porridge, rye bread, olives, melon, kiwifruit, dried apple, mushrooms and leeks (see Table 6.49). This omission was also expressed by participants as a primary reason for non-usage of these food guides, namely because of food not being available (“*I don’t always have the foods mentioned*”, “*there are some foods in the picture I don’t eat*”).

Names given to the FBDG food categories match those of the personal food categories more closely than those of the 3- or 5-Food Group Guides. This is especially so for the 3-Food Group Guide which makes use of food function terminology (“energy”, “body-building”, “protective”) rather than food-based terminology (“fruits”, “vegetables”).

While the 3- and 5-Food Group Guides do parallel some of the food categories as implied by the FBDGs and as identified through personal food categorisation, it would appear that the 3- and 5-Food Group Guides have not had an overly significant influence on food categorisation.

Of the interview participants who reportedly used food guides for meal planning, only two participants (14.29%), both urban formal Indian participants, reported the same number of personal food categories (n=5) to that of the food guide they reportedly used, namely, the 5 Food Group Guide. Names of personal food categories given by these two participants featured few of the names used by the 5-Food Group Guide. Of the 5 personal food categories mentioned by these two participants, all were included within the food categories implied by the FBDGs although different names were ascribed to some of them (see Table 6.50).

Table 6.50 Comparison of food categories:
Proposed FBDGs versus 5-food group guide versus personal food categories

PROPOSED FBDGs: FOOD CATEGORY NAMES	5 FOOD GROUP GUIDE: FOOD CATEGORY NAMES	NAMES OF PERSONAL FOOD CATEGORIES	
		Participant #1	Participant #2
Starchy foods	Grains and grain products	Groceries	(categorised as vegetables)
Fats	Fats and oils		Fats
Food from animals	Meat and meat substitutes	Meats	Meats
Legumes	Milk and milk products		
Fruits/Vegetables	Fruit and vegetables	Fruits and vegetables	Fruits and vegetables
Water	-----	-----	Liquids
Salt	-----	Seasonings	-----
Snacks	-----	Snacks	Junk foods/sweets
Alcohol	-----	-----	-----

CHAPTER 7:

DISCUSSION

The aim of this study is to document and provide a critical analysis of the South African FBDGs development process, and to assess the appropriateness of the proposed (preliminary) South African FBDGs.

To achieve this aim, specific study objectives included the following:

- (1) To document and critically analyse the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO.
- (2) To assess the appropriateness of the proposed South African FBDGs in terms of consumer comprehension (perceptions, general understanding and specific interpretations), and application of the guidelines (ability to apply the guidelines when planning a typical day's meals for their families).
- (3) To assess the compatibility of the proposed South Africa FBDGs in terms of food categorisation as perceived by consumers, and as depicted in the food guides that are commonly used.

Study objective 1, namely, the documentation and critical analysis of the South African FBDGs process in relation to the 10-step development process recommended by the FAO/WHO consultation, is discussed in detail in chapter three.

Chapter seven therefore focuses on the remaining two study objectives, with a discussion of the study results as revealed through focus group discussions and individual interviews.

7.1 OBJECTIVE 2: - TO ASSESS THE APPROPRIATENESS OF THE PROPOSED SOUTH AFRICAN FBDGs IN TERMS OF CONSUMER COMPREHENSION AND APPLICATION OF THE GUIDELINES AMONG WOMEN LIVING IN KWAZULU NATAL

In order to make recommendations regarding the appropriateness of the proposed South African FBDGs, each FBDG was investigated in terms of consumer comprehension and application. In specific terms, this involved investigation of previous exposure and sources of information, general understanding, specific interpretations, perceived importance, perceived barriers to application, and ability to plan a typical day's meals to reflect the proposed FBDGs.

The order in which each FBDG was examined is as reported in this chapter, namely: (abbreviations used in this chapter are provided in parenthesis)

- "Enjoy a variety of food" ("Variety")
- "Be active" ("Be active")
- "Make starchy foods the basis of most meals" ("Starchy foods")
- "Eat plenty of fruits and vegetables everyday" ("Fruits/Vegetables")
- "Eat legumes regularly" ("Legumes")
- "Foods from animals can be eaten everyday" ("Foods from animals")
- "Use fat sparingly" ("Fats")
- "Use salt sparingly" ("Salt")
- "Drink lots of clean, safe water" ("Water")
- "If you drink alcohol, drink sensibly" ("Alcohol")
- "Eat healthier snacks". ("Snacks")

7.1.1 Previous exposure to and sources of information about concepts conveyed by the proposed FBDGs

Of the eleven proposed FBDGs subjected to consumer testing, two were familiar to all enumerator areas (EAs), namely, “Fruits/Vegetables” and “Fats”. Participants reported the greatest number of sources of information for these two FBDGs which may explain the increased level of exposure.

All urban (formal and informal) EAs were familiar with the “Salt” and “Alcohol” guidelines, while rural EAs were unfamiliar with these FBDGs. All urban formal EAs were familiar with the “Water” guideline while urban informal Black participants gave a mixed response and rural Black participants were unfamiliar with this guideline. These three FBDGs were the only guidelines for which schools were NOT reported as a source of information. Furthermore, only one source of information (radio) was reported for the “Water” FBDG and only two sources of information (television and “Arrive Alive” campaign) were reported for the “Alcohol” FBDG. Fewer sources of information may explain the decreased level of exposure to these three FBDGs. Television may also not be available in rural areas, thereby limiting exposure to mainly urban dwellers.

Face-to-face education, as takes place in clinics (small groups) or hospitals (one-to-one basis), has been the traditional approach to nutrition education. However, in recent years, this approach has been questioned in terms of its merits versus mass media approaches. While face-to-face methods are likely to be more effective as they offer the opportunity for social context and interpersonal interaction, mass media approaches are based on marketing and communication models that have been seen to increase community awareness. Using mass media approaches to support face-to-face methods may therefore be a better option in effecting behaviour change (Smith & Smitasiri 1997). The successful use of mass media to deliver health education in South Africa is already in evidence, namely, the Soul City Project. This “edutainment” project delivers health education in an entertaining fashion, making use of television drama, radio episodes, national newspaper inserts, informational brochures, comic books and posters (IUPHC 1995).

Evaluations of the Soul City Project (IUPHC 1995) showed that among those who watched the television series the majority (69%) were urban dwellers, while listenership of the radio series was largely rural (44%). 51% of television viewers and 46% of radio listeners said they discussed the programmes with others. Of those who said they had read the newspaper inserts and booklet, 32% and 41% were from rural areas, respectively. 52.2% of respondents stated they had passed their booklets on to at least one other person, and a further 35% that they had passed their booklets on to between two and five other people. An evaluation of the impact of the project on knowledge, attitudes and practices revealed that 87% of respondents stated that they would use the information learned in the future, and 19% stated that they had already used some of the information (IUPHC 1995).

Selection of education and communication channels for the dissemination of the proposed South African FBDGs is one of the final steps in the recommended FAO/WHO FBDGs development process. Based on results of this study as well as successful international and local health/nutrition education experiences, the mass media (mainly radio and to a lesser degree, television and magazines) as well as clinics and schools should be explored as methods for the dissemination of the South African FBDGs.

7.1.2 General understanding and specific interpretations regarding concepts, terminology and descriptions used in the proposed FBDGs

The main findings regarding consumer understanding and interpretations for each of the eleven proposed FBDGs are discussed in detail below.

7.1.2.1 “Enjoy a variety of foods”

The majority of focus group participants understood this guideline in terms of dietary diversity, which was perceived as being achieved by varying the composition of meals throughout the day, varying the composition of meals from day to day, and varying the method of food preparation (especially where certain foods are inaccessible). Responses obtained from interview participants supported those of focus group discussions, with the majority of interview participants interpreting the word “variety” as meaning “different types of foods”.

Study participants’ understanding and interpretations of this FBDG were therefore in agreement with scientific explanations given for this guideline, namely, that people should strive to eat as wide a variety of foods (food groups) as is affordable and acceptable (Maunder, Matji & Hlatshwayo-Molea 2001).

7.1.2.2 “Be Active”

Focus group participants interpreted this guideline as an unconscious attempt (incidental to the daily routine, such as completing a task in the domestic or work sphere) and as a conscious attempt (a separate regime from the daily routine such as going to the gym, walking, running) to exercise the body. Apart from the specific type of activity, the majority of focus group participants also considered the mode of activity (doing it routinely and enthusiastically) as important.

The scientific explanation given for this guideline is that people should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week. The concept “to accumulate” indicates that the exercise dose may consist of “lifestyle or habitual physical activity, structured around household and gardening activities, transport and leisure time” (Lambert, Bohlmann & Kolbe-Alexander 2001). Study participants’ understanding and interpretations of this FBDG were therefore in agreement with the scientific explanation given for this guideline.

7.1.2.3 “Make starchy foods the basis of most meals”

The phrase “starchy foods” was understood by focus group and interview participants, with specific interpretations including “*energy foods*” [urban formal Black participants] and “*carbohydrates*” [urban formal Indian and White participants]. Rural and urban informal Black participants cited specific foods as a means of explaining the phrase “starchy foods”.

Foods/drinks cited/selected by study participants reflected those traditionally categorised as “starchy foods” by nutrition professionals. Maize meal, bread, rice and potatoes were the most commonly cited/selected examples of “starchy foods” among focus group and interview participants. Samp and maize-meal were also commonly cited/selected examples of “starchy foods” amongst Black participants. Urban formal Indian and White participants cited/selected a greater variety of the more expensive “starchy foods” (breakfast cereals, pasta, oats, sweet corn). These differences between EAs were also evident when comparing the top 20 common foods within each EA {namely, potatoes commonly selected across all EAs, samp and green mealies selected most commonly by rural Black participants, and mealie-meal selected most commonly by rural and urban informal Black participants} indicative of available resources (especially financial) and cultural food preferences (Vorster *et al.* 1997).

Focus group participants interpreted this guideline as starchy foods making up the larger portion relative to other foods, and as starchy foods being consumed with each meal, with the main (evening) meal only and with at least one meal. The majority of focus group participants interpreted “*meals*” as meaning the three classic “main” meals – breakfast, lunch and dinner – despite the fact that many South Africans eat only two meals a day (Vorster *et al.* 1997).

For all urban participants, the concept of making starchy foods the largest portion of a meal conflicted with their perception of starchy foods as “*fattening*” and “*stodgy*”. Because carbohydrate, and especially starch, is the main contributor to dietary energy, there are often misconceptions about its role in maintaining healthy body weight and in obesity. The role of carbohydrates in human nutrition, maintenance of health and prevention of disease, was recently updated and reviewed by a joint FAO/WHO Expert Consultation (FAO/WHO 1997).

The FAO/WHO Expert Consultation report, as well as a recent WHO Consultation on Obesity (WHO 1998) concluded that “weight changes are primarily due to disruption of fat balance.....and while excess carbohydrate can also be converted to fat, human subjects do not use this metabolic pathway to any appreciable extent unless large excesses of a low-fat, high-carbohydrate diet are consumed.” Intervention studies looking at the effect of carbohydrate intake on leptin concentration and weight management suggest that dietary interventions should contain adequate amounts of carbohydrate to maintain leptin levels so as to improve weight loss (FAO/WHO 1997).

The scientific explanation given for this guideline is that “when planning meals, the starchy food should be the central or main food, and that the rest of the meal be planned around this food” (Vorster & Nell 2001). Study participants’ understanding and interpretations of this FBDG were therefore in agreement with the scientific explanation given for this guideline. However, given the misconceptions of the role of “starchy foods” in obesity, it is important that any accompanying FBDG consumer materials clarify this issue.

7.1.2.4 “Eat plenty of fruits and vegetables every day”

All focus group and interview EAs understood the meaning of “fruits” and “vegetables”, citing appropriate food examples as a means of explanation. Foods/drinks cited/selected by study participants reflected those traditionally categorised as “fruits” or “vegetables” by nutrition professionals.

Focus group and interview participants generally cited/selected the same examples of fresh fruits and vegetables. Urban formal Indian and White participants also cited/selected canned fruit, fruit juices and dried fruit. Additional vegetables mentioned by specific participant groups included imifino and pumpkin leaves (rural Black participants), gem squash, canned baked beans and frozen vegetables (mixed, carrots, corn, peas) (urban formal Indian and White participants), and broccoli, celery, baby marrow, mushrooms and leeks (urban formal White participants). Urban formal White participants cited/selected the greatest variety of fruits and vegetables. These differences between EAs were also evident when comparing the top 20 common foods within each EA, indicative of available resources (especially financial) and cultural food preferences (Vorster *et al.* 1997).

Interpretations of the word “*plenty*” emphasised frequency and quantity of consumption. Numeric values ascribed by focus group participants to the word “*plenty*” ranged from a minimum of 1 fruit and 1 vegetable a day to as many as 5-9 fruits/vegetables a day. The majority of interview participants regarded optimal fruit and vegetable consumption as 1-3 times a day.

An intake of at least 5 portions (400g) of fruits and vegetables per day has become established as a manageable, minimum recommendation by numerous international and national health promotion agencies, producers and retailers (Love & Sayed 2001). It would appear that study participants’ understanding and interpretations of this FBDG in terms of quantity were less than the minimum recommendations. Any accompanying FBDG consumer materials will therefore need to quantify this guideline and provide suitable examples of how this can be realistically achieved.

7.1.2.5 “Eat legumes regularly”

Focus group participants interpreted this guideline to mean that legume consumption was recommended and should be eaten often. Focus group and interview participants varied in their perception of the word “*regularly*”. Views ranged from “*often*” to “*once a day*”, “*at least once a week*”, and “*twice to three times a week*”.

Types of foods identified by focus group and interview participants as “legumes” reflected those traditionally categorised as “legumes” by nutrition professionals. Common examples were dry beans, canned baked beans and split peas (dhal), with urban formal Indian participants citing/selecting the greatest variety of “legumes”. Dry beans were also listed as a top 20 common food, selected most commonly by rural Black and urban formal Indian participants, indicative of available resources (especially financial) and cultural food preferences (Vorster *et al.* 1997).

The scientific explanation for this guideline is that a daily intake of 100-200g (½-1cup) cooked dry beans can offer distinct health benefits (Venter & Van Eyssen 2001). Due to financial and/or cultural reasons, the consumption of dry beans would appear to be frequent only for rural Black and urban formal Indian participants. For the remaining participants, frequent (“regular”) consumption would appear to be less than recommended. Any accompanying FBDG consumer materials will therefore need to quantify this guideline and provide suitable examples of how this can be realistically achieved.

Despite familiarity with the term “legumes”, the majority of participants stated that this term was not common, and suggested the use of an alternate name, such as “dry vegetables”, “dried ingredients” or simply calling these foods by their names, “dry beans, lentils, split peas”. It is of interest to note that few countries use the term “legumes” in their dietary guidelines. Where it is used, it is featured as part of the vegetable or cereal guidelines. Explanations for this relate to the way in which legumes are eaten in that country. Studies by these countries on the understanding of the word “legume” by their people are unfortunately lacking (Department of Health, Thailand 1999; Australian Nutrition Foundation 1998; Asian Nutrition Foundation 1997; Gopalan 1997; Ministry of Health, Malaysia 1997; Shils, Olson & Shike 1994).

Confusion by South African consumers regarding the term “legumes” has also been noted in other provincial FBDG studies, namely, the Western Cape, North West Province and Gauteng. However, when the legume FBDG was reworded to include food examples as suggested by participants and re-tested in several of the official South African languages (English, Afrikaans, Zulu, Xhosa and Tswana), participants interpreted this guideline to mean “*that dry beans, peas, lentils and soya consumption was recommended and should be eaten often*” (Vermaak, Steenkamp, Malan & Coetzee 2001; Greyvenstein 2000; Marais 2000). The use of the word “legumes” in the guideline should therefore be replaced with appropriate food examples, namely, dry beans, split peas, lentils and soya, to reflect foods commonly consumed and identified as “legumes”.

7.1.2.6 “Foods from animals can be eaten every day”

“Foods from animals”, as stated in the guideline, include milk and other dairy products (such as yoghurt and cheese); fish (including fresh and tinned water and marine fish); eggs; and meat (which refers to both red meats and chicken) (Scholtz *et al.* 2001). Types of foods identified by focus group and interview participants as “foods from animals” reflected many of those traditionally categorised as “meats and dairy products” by nutrition professionals. Common examples of “foods from animals” cited/selected by focus group and interview participants were eggs, poultry, fish, red and processed meat, and dairy products. Urban formal White participants cited/selected the greatest variety of “foods from animals”, particularly of dairy foods. Such differences in food selection are indicative of available resources (especially financial) (Vorster *et al.* 1997).

Study participants, however, expressed confusion with the phrase “foods from animals” and felt that it did not provide clarity on exactly which foods are included in this guideline. Participants therefore suggested using food names, “meat, dairy, poultry, fish” or “meat and milk products”. Other provincial FBDGs studies in which this FBDG was reworded and re-tested as “Meat, fish, chicken, milk or eggs can be eaten every day”, have revealed improved understanding of this guideline when reworded using appropriate food examples (Vermaak *et al.* 2001; Greyvenstein 2000; Marais 2000).

The majority of focus group participants interpreted the phrasing “*can be eaten everyday*” as flexible and non-prescriptive. A few urban formal Indian and White focus group participants, however, interpreted this advice as meaning that these foods *must* be eaten everyday, which conflicted with nutritional information they had been exposed to previously advising against the frequent consumption of animal foods, in particular red meat.

There is sufficient documented evidence that “foods from animals” contribute high quality protein and essential micronutrients to the diet. However, the argument to limit intakes of “foods from animals” is also based on evidence that over-consumption may increase risk of chronic diseases, particularly cardiovascular disease and certain forms of cancer (Scholtz *et al.* 2001). As a result, sectors of a country’s population may be exposed to a health message advising on the reduction or even avoidance of “foods from animals”. It is therefore not surprising that urban formal Indian and White focus group participants stated that they had read/heard that “*red meat should be eaten less often (avoided) because of its high fat content*”.

To reflect consumption patterns of animal-derived foods and to de-emphasise the intake of red meat, a suggested change to this FBDG was made by the National Department of Health, namely, “*Chicken, fish, meat, milk or eggs could be eaten daily*”. All of the foods/drinks listed in this rewording compare favourably with those identified by study participants as commonly consumed foods/drinks. Replacement of the phrase “*can be eaten every day*” with “*could be eaten daily*” was viewed as a clearer way of meaning that these foods did not have to be eaten everyday. Consumer interpretations of this altered version still need to be assessed (DOH/FBDG Workshop 2001).

The challenge, then, in compiling the “foods from animals” FBDG will be to educate the consumer as to the amount of animal-derived foods that will provide nutritional benefits without increasing risk for chronic diseases. Apart from rewording this guideline as suggested, it will therefore also be necessary for any accompanying FBDG consumer materials to provide advice in terms of quantity and frequency of consumption of these foods, the use of legumes as substitute foods, and the selection of low fat varieties of animal-derived foods.

7.1.2.7 “Use fat sparingly”

The primary interpretation of this guideline by focus group EAs was in terms of using minimal amounts of fat in food preparation. Urban formal Indian and White focus group participants also interpreted this guideline as meaning that the fat content of food should be considered. Interpretations by interview participants were similar to those of the focus groups, with only urban formal Indian and White participants also including “*fatty foods*” in this guideline. Common “foods containing fat” cited/selected by focus group and interview participants reflect those traditionally categorised as “fats” by nutrition professionals, namely, white cooking fat, oil, butter, margarine, fatty meat (chops, boerewors, bacon, canned meat, mince), chicken (skin), and full cream dairy products (“maas”, yellow cheese).

All focus group EAs interpreted the word “*sparingly*” as meaning “*use less*” or “*use a little*”. Urban formal White focus group participants felt that the guideline was too vague and wanted precise quantities for “*what is regarded as too much*”. They also expressed a view that perhaps not all fats are harmful, and that it is the type of fat, namely, saturated fat and cholesterol, that causes health problems. Open-ended responses from interview participants indicated a perception that fatty foods should be eaten “*in moderation*” and “*as part of a balanced diet*”.

The authors of the technical support paper for this guideline state that this FBDG “embodies the recommendation that fat should be eaten, but that it should be used sparingly”. Foods that are targeted are animal-derived foods (red meat, chicken, fish and meat products), non-dairy creamer, hydrogenated fats (brick margarine) and animal fats (butter, dripping). To extend this guideline beyond fat for cooking and to include “fatty foods” the authors suggest that the guideline be rephrased as “Eat fats sparingly”. Consumer interpretations of this altered version still need to be assessed (Wolmarans & Oosthuizen 2001).

Study participants’ understanding and interpretations of this FBDG were therefore in agreement with scientific explanations given for this guideline, namely, that people should strive to eat a moderate-fat diet (Wolmarans & Oosthuizen 2001). Greater clarity is needed, however, regarding foods included in this guideline and recommended optimal intakes. Apart from rewording this guideline as suggested, it will therefore also be necessary for any accompanying FBDG consumer materials to provide suitable food examples as well as advice in terms of quantity and frequency of consumption of these foods.

7.1.2.8 “Use salt sparingly”

Focus group and interview participants interpreted this guideline primarily as advice against the excessive use of salt when preparing and cooking food. Only urban formal Indian and White participants also interpreted this guideline as advice to reduce excessive consumption of all foods considered to have a high salt content, such as “biltong”, nuts, chips, popcorn, salted meats (bacon).

Common “foods containing salt” cited/selected by focus group and interview participants reflect those traditionally categorised as such by nutrition professionals. For focus group and interview participants, salt was cited/selected as the most common “food containing salt” and the most commonly added seasoning (used to enhance the taste of food both in food preparation/cooking and table use). Salt was also mentioned as a commonly consumed food across all EAs and ranked second on the top 20 common foods/drinks list. Other salt-based seasonings commonly consumed by Black participants included stock cubes and soup powders.

The scientific explanation given for this guideline is that “salt should be used sparingly, if at all, at the table and in the preparation of meals, and the intake of processed foods high in salt should be limited” (Charlton & Jooste 2001). Study participants’ understanding and interpretations were in agreement with this, however, greater clarity is needed regarding foods included in this guideline. Any accompanying FBDG consumer materials will therefore need to provide suitable food examples. Given the common usage of salt as a

seasoning, appropriate advice will also be needed on how to replace salt and salt-based seasonings without diminishing the taste of food.

7.1.2.9 “Drink lots of clean, safe water”

Focus group EAs interpreted this guideline as advice to drink sufficient water that is free from contamination. All (100%) interview participants stated that they felt people should drink water. Urban formal White focus group participants also queried the use of other fluids, such as tea, coffee, fruit juice, milk and cool drinks, as well as foods with a high water content, such as salads and soup, in place of drinking water.

Overall perceptions between focus group and interview participants as to what constitutes sufficient intake of water were similar for urban formal EAs, namely, 4-10 glasses/day. Urban informal and rural focus group participants reported higher optimal intakes (8-12 glasses/day) than their interview counterparts (1-8 glasses/day). Water was also commonly consumed across all EAs and ranked third on the top 20 common foods/drinks list. Tea (as an additional source of water) was commonly consumed across all EAs and ranked thirteenth on the top 20 common foods/drinks list.

The scientific explanation for this guideline is that “a daily intake of up to 2 litres of ‘safe, clean’ water is desirable for optimal hydration, and may be taken in the form of tap water, beverages such as tea and coffee, and other tap water-based drinks” (Bourne & Seager 2001). It would appear that study participants’ understanding and interpretations of this FBDG in terms of quantity were less than the minimum recommendations, especially for rural and urban informal Black participants who had limited access to a safe water supply. Any accompanying FBDG consumer materials will therefore need to quantify this guideline and provide suitable examples of how this can be realistically achieved.

7.1.2.10 “If you drink alcohol, drink sensibly”

This guideline was conceptualised by focus group EAs in terms of the social consequences of excessive alcohol consumption. Excessive alcohol consumption was perceived as altering behaviour and causing problems in the domestic and work spheres. People who consumed excessive quantities of alcohol were perceived as highly disruptive. In addition, focus group EAs were concerned with the normalisation of excessive alcohol consumption within their communities, and the socio-economic effects of this. Urban formal White focus group participants also highlighted the physiological effects of excessive alcohol consumption. Whiskey, beer and wine were the most commonly cited/selected alcoholic beverages by all participant groups.

Focus group participant interpretations of appropriate alcohol consumption (“*drinking sensibly*”) were predominantly qualitative (non-numeric, descriptive). Responses from interview participants revealed similar findings, namely, that alcohol should be consumed “in moderation”, “occasionally” and “once a week”. Some focus group participants felt that the non-quantified phrase “*drink sensibly*” was open to various (mis)interpretations.

According to the authors of the technical support paper for this FBDG, this guideline is “intended to encourage low risk drinking as part of a balanced diet, while discouraging abuse” (Van Heerden & Parry 2001). It would appear that study participants’ understanding and interpretations were in agreement with the scientific explanation for this guideline. However, to minimise mis-interpretation regarding what quantifies “sensible” drinking, any accompanying FBDG consumer materials will need to quantify this guideline and provide suitable examples of how this can be realistically achieved. Advice should also be provided about when alcohol consumption is contra-indicated (such as pregnancy and children under the age of 18 years).

7.1.2.11 “Eat healthier snacks”

Focus group and interview participants understood the concept of “snacking” as “*eating between meals*” (with “meals” being interpreted as meaning breakfast, lunch and dinner). The attachment of the word “healthier” to the concept of “snacking”, however, created much confusion as snack foods were regarded as “luxury” foods that were eaten only on special occasions due to cost (all Black participants) and/or because these foods offered little nutritional benefit (all participants). Examples of snack foods included cakes, biscuits, chips, chocolates, ice-cream, sweets, Chelsea buns, muffins, doughnuts, nuts, samoosas, chilli bites, pizza, sausage rolls, and pies.

The aim of this FBDG was to acknowledge the pattern of “snacking” that exists among urbanised South Africans and that snack foods are available in rural areas, and to promote the intake of healthier snack options (Vorster *et al.* 1997). However, given the confusion created by this FBDG, it is apparent that the formulation of a “healthy snack” message needs to be re-addressed in terms of terminology used. If deemed too difficult to formulate a separate guideline, at least the advice regarding healthy snack choices should be integrated with the remaining FBDGs, in particular the FBDGs for fats and salt. Both fat and salt are commonly found in large amounts in snack foods and when eaten in excess can increase the risk for chronic disease (Charlton & Jooste 2001; Wolmarans & Oosthuizen 2001).

7.1.2.12 Overall comments regarding understanding and interpretations of the FBDGs

Scientific evidence is available to support the need for the proposed FBDGs especially in the South African context. However, consumer-testing results show clear areas of confusion regarding certain concepts and some terminology, as well as some misconceptions. All of these issues can be addressed through rewording of certain FBDGs as well as by providing additional explanatory information in accompanying FBDG consumer materials.

7.1.3 Perceived importance of, perceived barriers to and ability in applying the proposed FBDGs

The main findings regarding perceived importance, perceived barriers to application, and ability to plan a typical day's meals to reflect the proposed FBDGs are discussed in detail below.

7.1.3.1 Perceived importance of the proposed FBDGs

Participants from all focus group EAs endorsed the importance of applying the FBDGs, predominantly for health reasons. Social reasons were also cited for endorsing the "alcohol" FBDG. These findings are in accordance with professional opinion and the scientific evidence as reflected in the technical support papers produced for each FBDG.

7.1.3.2 Perceived barriers to the application of the proposed FBDGs

Studies indicate that nutrition education programmes that merely disseminate information often do not bring about attitude or behaviour change, because they fail to motivate the audience. More effective programmes, in general, accept that nutritional behaviour is very complex, and that changing this behaviour requires not only cognitive (knowledge) change, but also attitudinal change. In addition, motivation needed for the adoption of the required behaviour must often be encouraged (Smith & Smitasiri 1997). To accomplish this task, researchers recommend that a variety of theoretical frameworks or models be used to develop strategies that will enhance awareness and establish the motivation that precedes behaviour change. It is suggested that factors contributing to the effectiveness of nutrition education programmes include behavioural intent, behavioural expectancies, personal and health values, sense of personal empowerment or self-efficacy, and behavioural capabilities such as knowledge and relevant cognitive, affective and behavioural skills (Contento *et al.* 1995). Environmental factors such as socio-economic status and living conditions in which people find themselves may also present barriers.

While participants endorsed the importance of applying the FBDGs, current dietary practices indicated that actual application was more difficult. Except for legume consumption among urban formal Indian participants, reported actual consumption of fruits, vegetables, legumes and water was less than what is considered optimal. Findings from regional nutrient studies and the National Food Consumption Survey confirm such dietary intake patterns among South Africans, with intakes of unrefined starchy food, fruits, vegetables, legumes and water being lower, and intakes of fats, salt and alcohol being higher than optimal (Labadarios *et al.* 2001; Vorster *et al.* 1997).

For all participants, but especially rural and urban informal Black participants, affordability was the greatest limiting factor to the achievement of variety in the diet. When disposable incomes were small, consumption of fruits, vegetables, foods from animals, and snack foods decreased, and the use of fats increased (in an attempt to enhance the taste of the meals). Where cooking fuel was an expensive resource, legume (specifically dry bean) consumption also decreased. For households facing food insecurity, starchy foods (in particular, mealie meal) appear to be the most readily available and affordable, and therefore the most consistent food, which can reduce variety in the diet even further. When refined starchy foods are chosen, fibre and micronutrient content of the diet is also adversely affected.

For all participants, availability was mostly related to fruit consumption and highly contingent on seasonal fluctuations. With regards to water consumption, the further the water source was from the household, the greater the likelihood of a reduced allocation of water for all household needs, including that for drinking purposes. This was evident for all Black participants who were communal (shared) water users.

For all participants, taste preferences may lead to the exclusion of fruits and vegetables, but the inclusion of fats and salt. For urban formal Indian participants, taste preferences were a reason to include legumes in the diet, as opposed to urban formal White participants who regarded this as a barrier. All urban participants cited taste preferences as a primary barrier to the drinking of water.

Time constraints were cited by all Black participants as a reason for replacing legumes (mostly dry beans), that require lengthy cooking periods, with quicker cooking, processed soya products. Urban formal White participants made use of fats more often when time was limited and a quicker cooking method was required. All urban participants cited a lack of leisure time as a main reason for inactivity.

Despite an awareness of the health consequences of high intakes of fat, salt and alcohol, all participants acknowledged that these guidelines would be the most difficult to apply. High intakes of fat and salt would be difficult to change due to household taste preferences and traditional/ habitual food preparation methods; while the habit of drinking alcohol would be difficult to change due to persistent attitudes.

Study findings regarding barriers to application of the FBDGs are similar to those reported by countries that have conducted surveys to assess the impact of their dietary guidelines. Surveys conducted in the United States between 1991 and 1994 showed a decrease in respondents (from 44% to 33%) who were achieving or striving to achieve a healthy diet. Commonly perceived barriers to good nutrition included taste, time and confusion. These findings were confirmed by food intake data studies done at the time. Commonly perceived obstacles to good nutrition included taste, time and confusion (Crane, Hubbard & Lewis 1998; Morreale & Schwartz 1995; McBean 1994; Kant *et al.* 1991).

In a recent consumer attitudinal survey of the European Union, a number of barriers to the implementation of dietary advice (guidelines) were identified, namely, time, taste of food, willpower, price, and preferences of others. One of the most significant findings was that 71% of participants believed that they “did not need to change their diets as it was already healthy enough” (Kearney & McElhone 1999).

Unfortunately, among western populations there appears to be a general reluctance to conform to dietary and lifestyle advice, despite proof of the benefits that result from the suggested dietary and non-dietary changes. The extent to which South Africans are conforming to health advice has not been investigated to any great extent. It appears that only the more affluent are attempting to eat wisely, reduce smoking and excessive alcohol intake, and increase activity levels. In light of such limited response, there is little certainty that other South Africans will be more responsive, especially with high levels of unemployment, poverty and violence making the quest for healthy eating a low priority. Vast segments of the population also have no real choice about the way they eat and live (Walker & Vorster 1997; Walker 1996; Walker & Bourne 1996).

While cultural influences can explain some of the differences in the dietary patterns of South Africans, it would appear that financial constraints and household food insecurity are the most important determinants of dietary intake. A recent comparison of national food security (data from 1998/99 food balance sheets) with household food security (data from dietary surveys) also indicated that large sectors of the South African population are food insecure, in particular, Black and Coloured children (Steyn *et al.* 1998). The National Food Consumption Survey reported household income as a decisive factor in the consumption and procurement of foods. Households with lower incomes procured a significantly lower number of food items when compared with households with higher incomes (Labadarios *et al.* 2001).

An important consequence of poverty in South Africa is the inadequate or poor education of women, who are predominantly responsible for the health of the household. This often results in a struggle to gain control over limited resources, and is a risk factor for inappropriate nutritional practices leading to malnutrition (Labadarios *et al.* 2001; Vorster *et al.* 1997; Krige & Senekal 1997; UNICEF 1993).

Cost analyses of diets that comply with recommended dietary guidelines show that the direct substitution approach (such as purchasing low fat margarine instead of butter) is more expensive than the restructuring approach (such as using smaller amounts of all fats). Unfortunately, it is generally easier for people to understand and adopt the direct substitution approach, making compliance with dietary guidelines expensive (McAllister, Baghurst & Record 1994).

It would appear that poverty and high levels of household food insecurity are the greatest barriers for the majority of South Africans (especially those in rural and urban informal areas) to the application of many FBDGs. As a means of addressing these concerns, Maunder, Matji & Hlatshwayo-Molea (2001) recommend fast-tracking of the Poverty Alleviation Programme, promotion of income generating projects, and appropriate nutrition education campaigns that are sensitive to financial and other constraints facing South Africans. When food insecurity is a factor, nutrition education also needs to focus more on combating hunger and under-nutrition, encouraging self-sufficiency, and supporting environmental and economic sustainability (Smith & Smitasiri 1997; ADA 1996).

In this context, all nutrition messages, including the FBDGs, will need appropriate modification to meet the needs of the situation and will need to be applied sensitively where food security is apparent. FBDGs may not improve household food insecurity by increasing the availability of and access to food, but they can assist in promoting the best use of available resources, including food.

7.1.3.3 Ability to plan a typical day's meals to reflect the proposed FBDGs

Despite the many perceived barriers cited by participants regarding application of the proposed FBDGs, when tasked with planning meals to reflect the proposed FBDGs, many participants stated that this was easy to achieve as they were "*already doing most of them*".

Only three FBDGs were mentioned as difficult to apply. Black participants from all EAs stated that it would be easier to apply the “fruits/vegetables” and “foods from animals” FBDGs if more money was available to purchase fruits, vegetables and meat. Urban formal White participants found it difficult to incorporate the “legumes” FBDG into their meal plans, citing taste preferences and traditional/habitual eating habits as reasons.

The meal plans as provided by each EA show clear differences in terms of examples of foods/drinks chosen for each meal. This is indicative of available resources (especially financial) and cultural food preferences. However, the meal plans for each EA did reflect the proposed FBDGs, illustrating the flexibility of the FBDGs across cultural and socio-economic differences. This implies that a single set of proposed FBDGs could be used for all South Africans.

The rationale for having a single set of FBDGs is to assist in the provision of consistent nutrition messages in a non-segregating manner aimed at the general population whether under-, over- or adequately nourished. It has been suggested (Labadarios & Steyn 2001) that a more practical approach to dealing with the diverse South African population, where both under- and over-nutrition coexist, might be to have two sets of dietary guidelines. Apart from the potential social or ethnic segregation that can be implied by having different sets of nutrition messages, one needs to also consider the element of confusion that could result, should an individual be exposed to both sets of information (as may happen with migration or urbanisation). The proposal for separate FBDGs for the under- and over- nourished also ignores the evidence that many South Africans are faced with the coexistence of under- and over-nutrition within the same household and even in the same person (Steyn *et al.* 1994).

7.1.4 Concluding remarks regarding the appropriateness of the proposed FBDGs in terms of consumer comprehension and application

In general, participants understood many of the FBDGs and their suggested food categories, and could construct a day’s meals using the FBDGs. Areas of confusion were identified regarding certain terminology (especially “legumes”, “foods from animals”) and concepts (“healthier snacks”). Several barriers to applying the FBDGs were also identified, the primary ones being affordability of food, availability of foods, and household taste preferences.

Results indicate that the single set of proposed FBDGs are appropriate in terms of consumer comprehension and application for all ethnic groups living in KwaZulu Natal provided:

- (a) that certain guidelines are reworded as suggested and
- (b) that all the guidelines are accompanied by explanatory information citing commonly consumed foods/drinks as well as practical examples of how to apply the guidelines in light of perceived barriers to application of the FBDGs.

The mass media (mainly radio and to a lesser degree, television and magazines) as well as clinics and schools should be explored as education and communication channels for the dissemination of the proposed South African FBDGs.

7.2 OBJECTIVE 3:- TO ASSESS THE COMPATIBILITY OF THE PROPOSED SOUTH AFRICAN FBDGs IN TERMS OF FOOD CATEGORISATION AS PERCEIVED BY WOMEN LIVING IN KWAZULU NATAL AND AS DEPICTED IN THE FOOD GUIDES THAT ARE COMMONLY USED IN SOUTH AFRICA FOR NUTRITION EDUCATION.

In order to make recommendations regarding the compatibility of the proposed FBDGs in terms of consumer food categorisation and whether food guides commonly used in South Africa for nutrition education are useful adjuncts to the proposed FBDGs, it was necessary to investigate the following areas:

- * personal food categorisation as perceived by study participants, namely:
 - way/s in which common foods/drinks are categorised without food group prompting
- * FBDG food categorisation as perceived by study participants, namely:
 - the selection of foods/drinks per food category as implied by the FBDGs (starchy foods, fruits, vegetables, legumes, foods from animals, foods containing fat, foods containing salt, alcoholic beverages and snacks)
- * food groupings as depicted in food guides commonly used in South Africa, namely:
 - previous exposure to and reported usage of food guides commonly used
 - any influence this may have had on personal or FBDG food categorisation

7.2.1 Compatibility of the proposed FBDGs in terms of personal food categorisation

Categorisation of foods/drinks by participants in terms of personal food categories was investigated in order to determine similarities and/or differences between consumer food categorisation and food categorisation as implied by the FBDGs (and as defined by health professionals).

Personal food categorisation was based on a participant's selection of foods/drinks reportedly commonly consumed. The top 20 common foods/drinks (known and consumed frequently) within each enumerator area show specific differences between enumerator areas, indicative of available resources (especially financial) and cultural food preferences. While these results were collected through qualitative methods, the top 20 common foods/drinks reported overall contained all six of the commonly consumed household commodities as identified by the quantitative South African National Food Consumption Survey (NFCS). These foods/drinks are mealie-meal (maize), white sugar, brown bread, tea, whole milk and margarine (Labadarios *et al.* 2001).

The number of piles into which participants categorised common foods/drinks ranged from one and two piles, up to 48 piles. The most common number of piles ranged from 7 – 15, with 11 piles being the most common for all participant groups. Names given to the most common piles of foods showed remarkable similarity across all enumerator areas, and matched all but two of the proposed FBDG food categories, namely, “foods from animals” (participants named these foods meats” and “milk/dairy”) and “legumes” (participants named these foods “beans”).

A minority of participants (<3.5%) suggested additional ways in which they might categorise “similar” foods. Participants from all enumerator areas mentioned categorising foods according to ingredients used in recipes (1.5% to 5.0%). Categorising foods according to the mealtimes when foods are eaten was also popular, except amongst rural Black participants. It is of interest to note that categorisation of foods according to nutrient composition, a nutrition education approach commonly used by health professionals, was not a popular approach among participants (0.87%) and was only mentioned by urban formal Indian and White participants.

There is little documented research regarding the way(s) in which foods/drinks are categorised by people. Where research has taken place, it has been in the context of evaluating a country’s food group guide. Axelson, Kurinij & Brinberg (1986) tested whether the United States “Basic Four” food guide reflected how consumers categorise foods. Study participants seemed to group foods in a manner related to, but more complex than, the “Basic Four”. They did not classify eggs, peanut butter and dried (navy) beans as meat substitutes. They also grouped rice, corn, fried potatoes and dried (navy) beans together (foods which the “Basic Four” grouped in the ‘bread’, ‘vegetable’, ‘vegetable’ and ‘meat’ groups, respectively).

The new Puerto Rico Food Guide Pyramid has undergone consumer research and actually incorporated consumer food categorisation in to its design. “Viandas” are a staple of the Puerto Rico diet - foods that are cooked with meat in a stew e.g.: green bananas, calabaza (local pumpkin) and carrots. Nutritionists in Puerto Rico considered these foods as part of the fruit or vegetable groups. Consumers, however, classified these foods as part of the cereal group. The Puerto Rico Food Guide Pyramid therefore features “viandas” as part of the cereal group as this reflects consumer categorisation of these foods (Macpherson-Sanchez 1998).

The manner in which foods/drinks are commonly consumed and the origin of the food/drink would therefore appear to play an important role in influencing personal food categorisation of consumers. Nutrition educators should take cognisance of the fact that nutrition education need not necessarily take place within the framework of traditional food groupings, and may be more effective if based on personal food categories as identified by consumers.

In terms of the proposed FBDGs, the common number of piles (n=11) into which participants categorised common foods/drinks and names given to these piles showed remarkable similarity across all enumerator areas, and matched all but two of the proposed FBDG food categories, namely, “foods from animals” and “legumes”. When assessing these two FBDGs in terms of consumer comprehension, it is evident that they need rewording to reflect the foods/drinks contained within each guideline. Once reworded as suggested by consumers, these two FBDGs would then match personal food categorisation more closely. The proposed FBDGs would therefore appear to be highly compatible in terms of personal food categorisation.

7.2.2 Compatibility of the proposed FBDGs in terms of FBDG food categorisation

Categorisation of foods/drinks by participants in terms of the food categories as implied by the proposed FBDGs was investigated in order to determine similarities and/or differences between consumer food categorisation and food categorisation as implied by the FBDGs (and as defined by health professionals).

The selection of foods by participants according to the food categories as implied by the FBDGs reflected a high level of comprehension as to the meaning of the FBDG food categories as defined by professional opinion. As expected, food examples given by participants reflected cultural, religious and financial considerations.

The use of the terms “legumes”, “foods from animals” and “healthier snacks” were not clearly understood by participants, and as a result created uncertainty as to the foods/drinks contained within these FBDGs. This finding reaffirms suggestions made by participants to reformulate these FBDGs to reflect foods/drinks commonly consumed and identified as contained within these guidelines. Apart from this, categorisation of common foods/drinks by participants in terms of food categories as implied by the FBDGs (and as defined by health professionals) would appear to be highly compatible.

7.2.3 Compatibility of the proposed FBDGs in terms of food groupings as depicted in food guides commonly used, namely, the 3- and 5-food group guides

The compatibility of the proposed FBDGs in terms of food categorisation as depicted in food guides commonly used was investigated to determine whether such food guides are useful adjuncts to the proposed FBDGs.

Overall reported exposure by interview participants to food guides commonly used in South Africa ranged from 15.45% to 65.63%. An overall average of 33.71% of interview participants reported **no** exposure. Participants were most familiar with the 3 Food Group Guide (overall average 65.63%) and the 5-Food Group Guide (overall average 45.72%). Reported usage of food guides to plan meals was low across all enumerator areas, with an overall range of 22.22% to 37.14%. Reported food guide usage was highest overall for the 5 Food Group Guide (average 37.14%), followed by the 3 Food Group Guide (average 33.77%).

A comparison of the food categories as implied by the proposed FBDGs with those of the two reportedly commonly used food guides (namely, the 3- and 5-Food Group Guides) shows little compatibility in terms of number of food groupings, names given to food groupings, or food examples provided.

The proposed FBDGs contains ten food categories (excluding the “Be Active” guideline). This has been found to be highly compatible with personal food categorisation of participants, where eleven food categories were identified as common across enumerator areas. Neither the 3- nor the 5-Food Group Guide complements these food categories in terms of number of groupings, with little or no advice regarding the following proposed FBDGs – “Legumes”, “Water”, “Alcohol”, “Salt”, “Snacks”, “Variety” and “Be active”.

Names given to the proposed FBDG food categories match those of the personal food categories more closely than those of the 3- or 5-Food Group Guides. This is especially so for the 3-Food Group Guide which makes use of food function terminology (“energy”, “body-building”, “protective”) rather than food-based terminology (“fruits”, “vegetables”).

While the 3- and 5-Food Group Guides do parallel some of the food categories as implied by the FBDGs and as identified through personal food categorisation, it would appear that the 3- and 5-Food Group Guides have not had an overly significant influence on food categorisation. Of the interview participants who reportedly used food guides for meal planning, only two participants (14.29%), both urban formal Indian participants, reported the same number of personal food categories (n=5) to that of the food guide they reportedly used, namely, the 5 Food Group Guide. Names of personal food categories given by these two participants featured few of the names used by the 5-Food Group Guide. Of the 5 personal food categories mentioned by these two participants, all were included within the food categories implied by the FBDGs although different names were ascribed to some of them.

Many of the foods/drinks depicted in the 3- and 5-Food Group Guides are items not commonly consumed across all EAs, such as white cooking fat, oats porridge, rye bread, olives, melon, kiwifruit, dried apple, mushrooms and leeks. This omission was also expressed by participants as a primary reason for non-usage of these food guides, namely because of food not being available.

In certain cases, the types of common foods/drinks categorised together by participants did not reflect traditional categorisation as defined by the 3- or 5-Food Group Guides. Indecision regarding the categorisation of certain foods/drinks appeared to relate to:

** the manner in which these foods/drinks were consumed*

e.g.: salad dressing with salad (salad dressing categorised as a “vegetable” together with the salad)

e.g.: potatoes, sweet potatoes, mealies (corn), dry beans, baked beans, amadumbes – all of which are sometimes eaten as a main food (“starchy food”) or as a side dish (“vegetable”)

e.g.: cream, condensed milk, coffee/tea creamers/whiteners – all of which are added to tea/coffee (categorised as a “dairy/animal food”)

** the origin of the food/drink*

e.g.: cream/butter (categorised as a “dairy/animal food” together with milk)

Many nutrition educators consider food guides an indispensable tool for communicating, to the consumer, information needed for selecting the types and amounts of various foods that, together, will provide a nutritionally satisfactory diet. Despite the recognition that food guides should be developed for the consumer’s benefit, upon review it is apparent that the majority of food guides remain professional-based. That is, developed primarily to assist the professional, and only considering the consumer’s ability to use the guide as a secondary function. Consumer research is seldom used to assess the acceptability of the chosen food groupings to the consumer for whom the food guide is intended. When food guides are developed by professionals to reflect their own perceptions of food groupings, rather than those of the consumer, such guides may be inconsistent with consumer perceptions of foods, and may be ineffective educational tools (Deutsch & Morrill 1993; Axelson & Brinberg 1992; Axelson, Kurinij & Brinberg 1986).

Since the 1980's the use of food guides for "lesser developed" countries has been berated by certain nutrition educators as obsolete, inappropriate, misleading and a disservice, especially when families have a limited choice of foods, and even the staple food is in short supply. In light of this, it is suggested that the approach to use in "developing" countries should be based on already established, positive eating patterns, rather than on standardised food groups (Welsh 1996; Werner & Bower 1995; Axelson & Brinberg 1992; Savage-King & Burgess 1992; Alnwick 1987; Alade 1986; Ritchie 1981; Waterlow & Payne 1975).

Should a country still choose to develop a food guide, it is recommended that the food guide be developed according to three criteria if it is to be effective and serve its main purpose, namely, to translate dietary guidelines in to practical recommendations on daily food intake:

- the food guide should complement the dietary guidelines of that specific country
- the food guide should acknowledge the foods/drinks commonly consumed by the people of that specific country, and the way(s) in which these foods are classified/categorised by the people of that specific country
- visual illustrations used to depict the food guide should be readily understood (Cronin 1998; WHO 1998; Australian Nutrition Foundation 1996; Welsh 1996).

Considering the role of food guides (namely, to complement the dietary guidelines) and recommended criteria for an effective food guide, it is apparent that the 3- and 5-Food Group Guides are incompatible with the proposed FBDGs.

7.2.4 Concluding remarks regarding the compatibility of the proposed FBDGs in terms of consumer food categorisation and as depicted in food guides commonly used

With the rewording/reformulation of the "legumes", "foods from animals" and "snacks" FBDGs, as suggested by consumers, the proposed FBDGs will be highly compatible in terms of consumer food categorisation (personal food categories and food categories as implied by the FBDGs).

In terms of food categorisation as depicted by the 3- and 5-Food Group Guides, the proposed FBDGs show little compatibility in terms of number of food groupings, names given to food groupings, or food examples provided. There is therefore a need to either move away from the concept of food groups and/or to develop a new South African food guide that is compatible with the proposed FBDGs.

For a new food guide to be compatible with the proposed South African FBDGs it will need to complement the FBDGs in terms of number of groupings, names of groupings and food examples, and be subjected to extensive consumer testing. A possible new South African food guide might therefore be illustrated as shown in Figure 7.1.

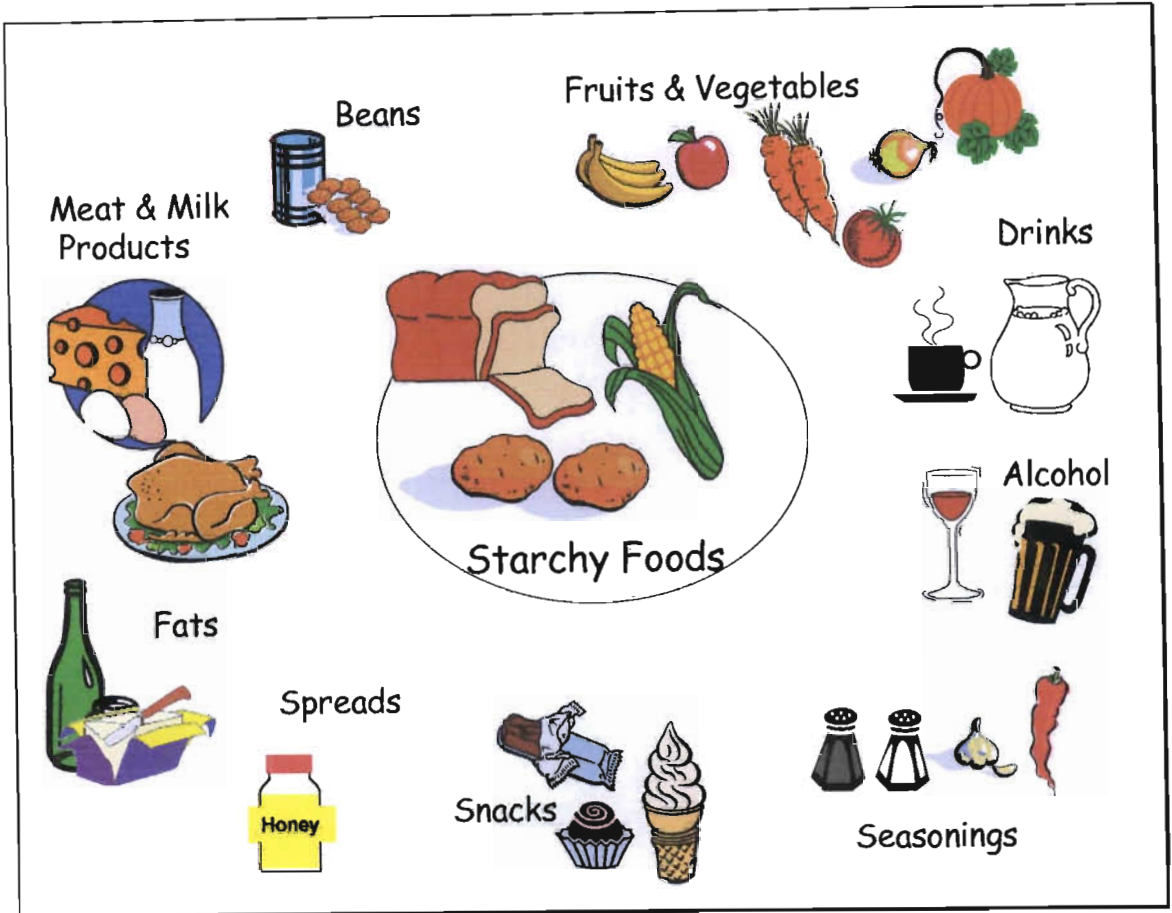


Figure 7.1 Possible new South African food guide

Foods/drinks depicted in a new South African food guide will need to represent those commonly consumed by South Africans, that is, the food guide will need to reflect food availability and affordability, cultural food choice and personal preference. Placement of such foods/drinks will also need to reflect the manner in which the food/drink is commonly consumed and the origin of the food/drink.

Although few foods/drinks ($n=9$) were cited as unknown (not recognised/unfamiliar) to the majority ($>75\%$) of interview participants, the use of foods/drinks that may reflect expensive and/or culturally unfamiliar commodities should be minimised. In so doing, regional food differences may emerge, necessitating the development of several food guides. The existence of several different food guides however, may cause confusion and inconsistencies when used in food advertising and public health promotion.

It would appear that, despite exposure, many participants chose not to make use of a food guide to plan meals (overall range of reported usage was found to be 22.22% to 37.14%). Across all enumerator areas, primary reasons cited for non-usage of food guides were a lack of knowledge (ignorance) about the food guide; a lack of understanding of how to use the food guide; and a personal choice not to use the food guide so because of food not being available, food being expensive, no time, laziness or habit. These barriers to usage of food guides reflect some of the barriers mentioned in terms of applying the FBDGs, namely, food availability, food affordability, personal preference and time constraints.

Barriers to the application of nutrition information have not been extensively investigated in South Africa. However, some studies suggest that nutrition education has not made much impact on achieving desired behaviour change and optimal nutritional status because of poor coverage, insufficient education materials, inconsistent messages and, mainly, the use of nutrition messages that are inappropriate because they do not reflect the needs of the people (Ladzani, Steyn & Nel 2000; Vorster *et al.* 1997; Walker 1996; IUPHC 1995; Walsh 1995; Steyn, Louw & Neethling 1993; Langenhoven *et al.* 1991).

For a South African food guide to be effective, nutrition educators will therefore need to possess the necessary skills to use the food guide as an adjunct to the FBDGs. More importantly, nutrition educators will need to gain an in-depth knowledge of their client's needs, resources and barriers to change so that appropriate health/nutrition information can be provided.

An alternate approach to the development of a food guide(s), is the use of the FBDGs with interactive support materials (such as pictorial flip charts, flash cards and food pictures). Such an approach would allow the nutrition educator to tailor-make the message to the needs of the consumer, focusing on already established positive dietary practices as a starting point. This approach also acknowledges the foods and meal patterns common to the consumer, the use of local names for commonly consumed foods/drinks, and barriers faced by the consumer to the application of nutrition information.

CHAPTER 8:

CONCLUSIONS AND RECOMMENDATIONS

This chapter consists of conclusions regarding the South African FBDGs development process and the appropriateness of the proposed (preliminary) FBDGs for South Africans. Recommendations are also given on how the South African FBDGs process could be improved and areas for future research.

8.1 CONCLUSIONS REGARDING THE SOUTH AFRICAN FBDGs DEVELOPMENT PROCESS AND THE APPROPRIATENESS OF THE PROPOSED FBDGs FOR SOUTH AFRICANS

Few countries provide detailed documentation and analysis of the process used when developing dietary guidelines for their country. Even fewer countries conduct extensive consumer testing when developing their dietary guidelines, despite the fact that nutrition experts agree that this is an essential step in the development process. The documentation and critical analysis of the South African FBDGs process and the incorporation of extensive consumer testing as an integral part of this process are therefore important contributions to the FBDGs development process, not only for South African research, but also internationally.

The FAO/WHO FBDG Development Process can be regarded as having been a viable process for the development of FBDGs for South Africa as it was possible to adapt the process to meet the realities of the country and what could be achieved over time. Within the South African context, the FAO/WHO process, while time intensive, was feasible and practical to implement.

To improve the effectiveness of nutrition education messages, the WHO recommends that such messages are *country-specific*, that is, that they address the nutritional needs of the people for which they are intended. The process followed by the SA FBDG Work Group has ensured that the proposed South African FBDGs are country-specific in that each FBDG is evidence-based and relates to specific nutrition-related public health concerns of South Africans.

For South Africa, with such a diversity of cultures and languages, consumer testing has been imperative to ensure that consumer interpretation and understanding of the FBDGs will be as is intended and to enhance application of the FBDGs by consumers in their daily lives. Consumer testing of the proposed FBDGs has therefore been the most important step in the entire development process, as it has provided valuable insights as to whether a single (core) set of guidelines could be used.

Study results indicate that a single set of FBDGs can be appropriate for all South Africans provided that certain guidelines are reworded/reformulated as suggested, and, more importantly, that all the guidelines are accompanied by explanatory information citing commonly consumed foods/drinks as well as practical examples of how to apply the guidelines in light of perceived barriers to applying the FBDGs (the primary ones being affordability of food, availability of foods, and household taste preferences).

While there is little documented research regarding the way(s) in which foods/drinks are categorised by people, the manner in which foods/drinks are commonly consumed and the origin of the food/drink appear to play an important role in influencing personal food categorisation of consumers. Nutrition educators should take cognisance of the fact that nutrition education need not necessarily take place within the framework of traditional food groupings, and may be more effective if based on personal food categories as identified by consumers. In terms of the proposed FBDGs, once certain guidelines are reworded/reformulated as suggested the FBDGs would appear to be highly compatible in terms of personal food categorisation.

Considering the role of food guides (namely, to complement the dietary guidelines) and the recommended criteria for an effective food guide (namely, to acknowledge the foods/drinks commonly consumed, and the way(s) in which these foods are classified/categorised by the people of that specific country), it is apparent that the 3- and 5-Food Group Guides are incompatible with the proposed FBDGs.

It would also appear that, despite exposure to food guides, many participants chose not to make use of a food guide to plan meals. The barriers to usage of food guides as reported by study participants reflect some of the barriers mentioned in terms of applying the FBDGs, namely, food availability, food affordability, personal preference and time constraints.

Considering these findings, there is a need to either move away from the concept of food groups and/or to develop a new South African food guide that is compatible with the FBDGs, and reflects food availability and affordability, cultural food choice and personal preference. An alternate approach to the development of a new food guide(s), could be the use of the FBDGs with interactive support materials (such as pictorial flip charts, flash cards and food pictures). Such an approach would allow the nutrition educator to tailor-make the message to the needs of the consumer, focusing on already established positive dietary practices as a starting point. This approach also acknowledges the foods and meal patterns common to the consumer, the use of local names for commonly consumed foods/drinks, and barriers faced by the consumer to the application of nutrition information.

It is important to remember that FBDGs and food guides are only educational tools. They do not effectively assist individuals in selecting a healthy diet unless nutrition educators possess the necessary skills to explain them. For such tools to be truly effective, nutrition educators require an in-depth knowledge of their client's needs, resources and barriers to change so that appropriate health/nutrition information can be provided. Apart from the provision of nutrition information, more efforts therefore need to be made to provide nutrition educators with the appropriate training.

It would appear that poverty and high levels of household food insecurity are the greatest barriers for the majority of South Africans (especially those in rural and urban informal areas) to the application of many FBDGs. For the long-term resolution of nutrition-related public health problems in South Africa, nutrition education efforts, and the use of FBDGs and/or food guides, therefore need to be part of a wider policy framework, not only focusing on combating hunger and micronutrient deficiencies, but also encouraging self-sufficiency and economic sustainability.

This research study has therefore played a significant and unique role in contributing to the development of a viable process for the formulation of a uniform (national) set of country-specific nutrition education messages that may be more appropriate for the South African consumer than the existing multitude of different nutrition education messages.

8.2 RECOMMENDATIONS FOR FUTURE ACTIVITIES

While the overall process of developing FBDGs for South Africa was a success, on reflection certain aspects need attention, hence recommendations for future activities.

To ensure sustainability of the South African FBDGs process, it is strongly recommended that the Department of Health appoint a representative scientific committee specifically for the purpose of reviewing and reformulating the South African FBDGs. This committee should be headed by a reputable senior scientist and contain members representative of all areas as described within the recommended FAO/WHO FBDG development process. All divisions of the Department of Health (nutrition, oral health, mother and child, food control/labelling, HIV/AIDS, geriatrics, chronic diseases) should also be represented as well as the Departments of Agriculture and Education.

In this way, government involvement in and commitment to the project will be more firmly established, and the role of government in obtaining national approval and adoption of the guidelines is likely to occur more rapidly. This process could also assist in creating consistency and harmony between the FBDG messages and other nutrition education tools being produced and used within the country.

Following national approval and adoption of the guidelines, it is envisaged that a national awareness campaign will be planned and implemented for the dissemination of the FBDGs. It is hoped that this campaign can be a joint activity between the National Department of Health, the Association for Dietetics in South Africa (ADSA), and The Nutrition Society of South Africa (NSSA). The mass media (mainly radio and to a lesser degree, television and magazines) as well as clinics and schools should be explored as education and communication channels for the dissemination of the proposed FBDGs.

It is anticipated that while there will be a single (core) set of FBDGs aimed at the general population and translated in to the official South African languages, any support material should be written to reflect the cultural and socio-economic diversity that exists within the country. It will therefore be appropriate to continue conducting consumer research of the FBDGs in other provinces of South Africa to accommodate other ethnic groups, in particular, rural dwellers where the need for nutrition education is greatest and resources most limited. It may also be useful to conduct studies with participants who are the “bread winners” of the household and are employed away from home where time may be an even greater barrier to the application of nutrition information.

The formation of a representative working group to develop FBDG materials for health professionals, nutrition educators/health care workers and consumers is strongly supported as this will promote input in terms of dietary differences between cultures, assist in translating of materials, prevent duplication of materials, increase credibility for the process (especially among the public), and create opportunities for public-private partnerships (between government and food industry).

As the final set of FBDGs is aimed at the general “healthy” population, these guidelines will need adaptation for people with special dietary needs. FBDGs for people living with HIV/AIDS have already been developed in consultation with the SA FBDG Work Group. Further adaptations of the FBDGs for infants and young children, pregnant and lactation, the elderly, and people with specific chronic disease (e.g.: heart disease, diabetes mellitus, cancer) still need to be addressed. Consumer testing of these adapted versions of the FBDGs is also recommended to ensure appropriateness to the end user.

A vital step in the FBDGs development process is measuring the impact of the FBDGs so that they can be reviewed periodically (a 5-year period is recommended). It is recommended that this function become the responsibility of the Department of Health, done via the various tertiary training institutions (universities, technikons, colleges) throughout the country in much the same manner as was done when conducting the national food consumption survey. Ownership, credibility and awareness of the FBDGs process are also broadened in this way.

8.3 STUDY CRITIQUE

The data collection methodologies used for this study were a combination of qualitative and quantitative research methods, namely focus group discussions, semi-structured individual interviews administered by an interviewer, and intentional participant observation (observation of participants performing deliberate tasks using a selection of colour food photographs).

Food photographs used in the study consisted of foods/drinks commonly consumed by South Africans as identified from regional and ad hoc food and nutrient intake studies. The high percentage of food photographs known to participants indicates that the selection of food photographs used for the study was representative of foods/drinks consumed within KwaZulu Natal. This finding was supported further by the minority (2.5% - 7.5%) of participants (all urban formal dwellers) citing additional frequently consumed foods/drinks (that is, frequently consumed foods/drinks for which there were no food photographs).

In the health (and nutrition) field, with its strong attachment to traditional, conventional, quantitative research methodology, qualitative research is often criticised for lacking scientific rigour. Important criticisms are outlined below, with explanations of how this study overcame or limited them.

* To reduce researcher bias within this study, qualitative results are accompanied by a detailed explanation of participant responses and are also verified with numerical quantitative data. Considering the high degree of similarity between qualitative and quantitative results, this can be regarded as a successful strategy in reducing researcher bias.

* To enhance reliability of this study, a standard pre-tested topic guide (see Appendix 6) was used together with audio tape cassettes to record focus group discussions (providing greater opportunity for analysis). Data analysis was also done by an independent consultant using a reputable qualitative research software programme, namely Atlas.ti. While it may be argued that consultant/computer generated analysis might distance the researcher from the data, this is not the case if the researcher is directly involved in conducting the focus groups and transcribing the tape recordings of these discussions.

* To check the validity of qualitative research, a “triangulation” approach is recommended, where three or more different data collection methods are used and the results compared for convergence. To enhance validity of this study, “triangulation” was used in the form of focus group discussions, individual interviews, and intentional participant observation and feedback to determine if participants regarded the findings as a reasonable account of their experiences. Using a combination of methods assisted in building a wider picture of the facts, allowing access to different levels of knowledge.

* In an attempt to maximise generalisability of results, this study used a stratified, random sampling procedure of magisterial districts and enumerator areas as supplied by Statistics South Africa (KwaZulu Natal Provincial Office). Comparative analysis was also done within and across enumerator areas. However, as only one enumerator area was sampled per research tool (focus group discussions and individual interviews) for each settlement type (Rural Black, Urban Informal Black, Urban Formal Black, Urban Formal Indian and Urban Formal White), these results are not generalisable to the province or South Africa.

The methodology used for this study is regarded as reliable and reproducible for use in other studies of this nature, and has in fact been used for assessing the appropriateness of the proposed FBDGs in other South African provinces, namely, the Western Cape, Eastern Cape, North West and Gauteng. Although study results from consumer testing of the FBDGs show many consistencies and similarities within and across participant groups and between provinces, considering the relatively small sample size of this study (n=333), these results cannot be assumed to apply to the general South African population.

It is therefore recommended that consumer testing (involving both focus group and individual interview methodology) of the food-based dietary guideline statements be an ongoing process throughout the different provinces of South Africa. This will assist in increasing the sample size and maximising the generalisability of results to the different cultural groups within South Africa and to the country as a whole. Such studies should be done in conjunction with the recommended 5-year review period to measure the impact of the food-based dietary guidelines. In this way, adjustments can be made to the guidelines regarding their relevance (in terms of nutrition-related public health problems), their scientific basis, as well as their “consumer appeal” (the ability of the consumer to understand and apply the guidelines).

REFERENCES

- Achterberg C, McDonnell E, Bagby R (1994). How to put the Food Guide Pyramid into practice. *J Am Diet Assoc* 94(9):1030-1035.
- ADA (1996). Position of the American Dietetic Association: Nutrition education for the public. *J Am Diet Assoc* 96(11):1183-1187.
- ADSA Minutes (1988). Meeting to discuss food groups and food classification (5 August). Department of Dietetics and Home Economics, University of Natal, Pietermaritzburg. South Africa.
- ADSA Workshop (1988). Food classification systems (15 August). Association for Dietetics in Southern Africa. Johannesburg: ADSA.
- Ahlström A, Räsänen L (1973). Review of food grouping systems in nutrition education. *JNE* 5(1):13-17.
- Alade I (1986). Classification of Nigerian foods: A review. *Food & Nutrition Bulletin* 7(2):59-63.
- Alnwick D (1987). Nutrition education and UNICEF: Paper prepared for the UNICEF Global Nutrition Policy and Action Workshop, 1-6 April, 1987. Naivasha: Kenya.
- Andrien M (1994). Social communication in nutrition - A methodology for intervention. Rome: FAO.
- Anon (1994). How is the Rainbow shaping up? An NIN study of educators. *RAPPORT - National Institute of Nutrition Publication* 9(2):1-5.
- Asian Nutrition Foundation (1997). Development of food based dietary guidelines for the Asian Region. Unpublished Report. Singapore.
- Atlas.ti Website. <http://www.atlasti.de>. Accessed April 1999.
- Australian Nutrition Foundation (1996). A student's guide to studying nutrition. Victoria: ANF.
- Australian Nutrition Foundation (1997). The Australian Nutrition Foundation's Healthy Eating Pyramid. *PABULUM - ANF National Newsletter* 30:6-7. Victoria: ANF.
- Australian Nutrition Foundation (1998). Dietary guidelines for Australians. *PABULUM-ANF National Newsletter* 32:8. Victoria: ANF.
- Axelson M, Brinberg D (1992). The measurement and conceptualisation of nutrition knowledge. *JNE* 24(5):239-246.
- Axelson M, Kurinij N, Brinberg D (1986). An analysis of the four food groups using multi-dimensional scaling. *JNE* 18(6):265-273.

- Barker D, Gluckman P, Godfrey K, Harding J, Owens J, Robinson J (1993). Fetal nutrition and cardiovascular disease in adult life. *Lancet* 341:938-941.
- Behr A (2002). Nutrition Directorate, Department of Health. Personal Communication.
- Benade J, Oelofse A, Van Stuijvenberg M, Jooste P, Weight M, Benade A (1997). Endemic goitre in a rural community in KwaZulu-Natal. *SAMJ* 87:310-313.
- Bester F, Weich D, Dannhauser A (1993). Nutrient intakes of elderly blacks in the Orange Free State. *SA J Clin Nutr* 6(1):6-11.
- BFNE (1993). *The Food Guide: Explanation and background*. The Netherlands: Bureau for Food and Nutrition Education.
- Borra S, Kelly L, Tuttle M, Neville K (2001). Developing actionable dietary guidance messages: Dietary fat as a case study. *JAMA* 101(6):678-684.
- Bourne L, Langenhoven M, Steyn K, Jooste P, Nesamvuni A, Laubscher J (1994). The food and meal pattern in the urban African population of the Cape Peninsula, South Africa: The BRISK Study. *Cent Afr J Med* 40(6):140-148.
- Bourne LT, Seager JR (2001). Water: The neglected nutrient. *SA J Clin Nutr* 14(3):S64-S70.
- Bradshaw D, Bourne D, Schneider M, Sayed R (1995). Mortality patterns of chronic diseases of lifestyle in South Africa. In: Fourie J, Steyn K, eds. *Chronic Diseases of Lifestyle*, MRC Technical Report 1995. Cape Town: MRC.
- Bremner B, Langenhoven M, Swanepoel A, Steyn M (1990). The snacking habits of white pre-school children. *SAMJ* 78:472-475.
- Britten N (1995). Qualitative Research: Qualitative interviews in medical research. *BMJ* 311:251-253.
- Burns A, Lovich R, Maxwell J, Shapiro K (1997). *Eating for good health*. In: *Where Women Have No Doctor*. 1st ed. UK : The Hesperian Foundation.
- CASE (The Community Agency for Social Enquiry) (1995). *A national household survey of health inequalities in South Africa*. Washington/California: Henry J Kaiser Family Foundation.
- Charlton K, Jooste P (2001). Eat salt sparingly – sprinkle, don't shake! *SA J Clin Nutr* 14(3): supplement:S55-S64.
- Charlton K, Wolmarans P (1995). *Food habits, dietary intake and health of older Coloured South Africans*. Monograph No. 2. Cape Town: HSRC/UCT Centre for Gerontology.
- Chinese Nutrition Society (2000). Dietary guidelines and the Food Guide Pagoda. *J Am Diet Assoc* 100(8):886-887.

- Clay W (1997). Preparation and use of food-based dietary guidelines. *FNA/ANA* 19:42-46.
- Coetzee R (1982). *Funa Food from Africa: Roots of traditional African food culture*. Pretoria: Butterworths and Co.
- Connolly C (1992). A new era in nutrition guidance in Canada. *RAPPORT - National Institute of Nutrition Publication* 7(4):4-5.
- Contento I, Balch G, Bronner Y, Lytle L, Maloney S, Olson C, Swadener S (1995). The effectiveness of nutrition education and implications for nutrition education policy, programs and research - A review of research. *JNE* 27(6):279-418.
- Crane N, Hubbard V, Lewis C (1998). National nutrition objectives and the dietary guidelines for Americans. *Nutr Today*. 33(2): 49-58.
- Cronin F (1998). Reflections on food guides and guidance systems. *Nutr Today* 33(5):186-188.
- CSIRO (1994). Evaluation of food selection guides in Australia: Intermediate summary report of consultations and consumer and professional workshops. Australia: CSIRO Division of Human Nutrition.
- Davis C, Britten P, Myers E (2001). Past, present and future of the Food Guide Pyramid. *J Am Diet Assoc* 101(8):881-885.
- Deakin University (1995a). *New Australian food guidance system: A progress report on the concept development and rationale* (September). Australia: Commonwealth Department of Human Services and Welfare.
- Deakin University (1995b). *New Australian food guidance system : A progress report on the focus group research* (November). Australia: Commonwealth Department of Human Services and Welfare.
- Debus M (1995). *The handbook for excellence in focus group research: Methodological review*. Washington DC: Academy for Educational Development.
- De Henauw S, De Backer G (1999). Nutrient and food intakes in selected subgroups in Belgian adults. *Br J Nutr* 81(Suppl 2):S37-S42.
- Department of Health and Welfare (1986). *Food and you*. Cape Town: CTP Book Printers.
- Department of Health, Thailand (1999). *Food Based Dietary Guidelines for Thai*. Thailand: Working Group on Food Based Dietary Guidelines for Thai.
- Deutsch R , Morrill J (1993). *Between food and health*. In: *Realities of Nutrition*. California: Bull Publishing Company.

DGA (Dietary Guidelines Alliance) (1996). Reaching consumers with meaningful health messages: A handbook for nutrition and food communicators. Washington DC: United States Department of Agriculture, Centre for Nutrition Policy and Promotion.

DGAC (Dietary Guidelines Advisory Committee) (2000). Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans 2000. Washington DC: United States Department of Agriculture, Centre for Nutrition Policy and Promotion.

Dhansay M, Hendriks M (1994). A literature review and technical perspective of Protein-Energy Malnutrition in South Africa, and international and local nutrition intervention studies. National Research Programme for Nutritional Intervention of the Community Health Research Group, MRC. Cape Town: MRC.

DHHS/USDA (Department of Health & Human Services/United States Department of Agriculture) (1995). Nutrition and Your Health: Dietary Guidelines for Americans. Bulletin No 232. Washington DC: United States Government Printing Office.

Diet Consensus Panel (1989). Dietary recommendations for the prevention of coronary heart disease. SAMJ 76:591-592.

DOH (Department of Health) (1994). Anthropometric survey in primary schools in RSA: Results. Compiled by the Chief Directorates for Community Health Services and Planning Support, Directorate for Strategic Planning, and Sub-Directorate for Statistical Analysis and Nutrition. Pretoria: Department of Health.

DOH (Department of Health) (2001). South African National Guidelines on Nutrition for People Living With TB, HIV/AIDS and other chronic debilitating conditions. Pretoria: Department of Health.

DOH/FBDG Workshop 2001. Minutes – 21-22 August 2001. Pretoria: Department of Health, Nutrition Directorate.

DOH/HMAC (Department of Health/Health Management Advisory Committee) (1992). Sensible diet guidelines for South Africans. Pretoria: Subcommittee, Nutrition Services.

Dorrington R, Bourne D, Bradshaw D, Laubscher R, Timaeus I (2001). The impact of HIV/AIDS on adult mortality in South Africa. Technical Report: National Programme for Health Systems and Policy. Cape Town: MRC.

Exercise Trainers Academy (2002). Food-Based Dietary Guidelines. Chapter 6: Nutrition. In: Manual for Fitness Professionals. Cape Town: Sports Science Institute of South Africa.

Faber M, Kriek J, Wolmarans P, Van Staden, Benade A, Labadarios D, Slazus W, Taljaard J (1992). Dietary patterns and nutritional status in free-living older white men with established vascular disease. SAMJ 82:232-236.

FAO (1995). Nutrition education for the public - Report of an FAO Expert Consultation (No. 59). Rome: FAO.

FAO/ILSI (1999). Report of the workshop on food-based dietary guidelines and nutrition education for Southern and East Africa, 26-29 October 1999, Harare, Zimbabwe. Harare: FAO.

FAO/WHO (1992). Promoting appropriate diets and healthy lifestyles: Theme Paper No. 5. In: Major issues for nutrition strategies. International Conference on Nutrition, Dec. 1992. Rome: FAO/WHO.

FAO/WHO (1997). Carbohydrates in human nutrition. Report of a joint FAO/WHO Expert Consultation, Rome, 14-18 April 1997. Rome: FAO.

Fedfood (Pty) Ltd & Vandenburgs (Pty) Ltd (1985). A1 RAMA Nutrition programme. Durban: Robprint.

Fritz V (1995). Stroke, including rehabilitation. In: Fourie J, Steyn K, eds. Chronic Diseases of Lifestyle, MRC Technical Report 1995. Cape Town: MRC.

Fuglesang A (1973). Applied communication in developing countries: Ideas and observations. The Dag Hammarskjöld Foundation.

Gatenby S, Hunt P, Rayner M (1995). The National Food Guide: Development of dietetic criteria and nutritional characteristics. *J Human Nutr Diet* 8:323-334.

German Nutrition Society (DGE) 2001. Ten guidelines of the German Nutrition Society for a wholesome diet. Bonn: German Nutrition Society.

Gibney M (1997). Dietary guidelines: Back to basics. *CHO Carbohydrates* 7(4):1-3.

Gillespie A (1990). Principles and issues in developing and implementing dietary guidelines: US perspective. In: Proceedings of the International "Dietary Guidelines : Expectations and Realities" Symposium, 11-12 May. Vancouver, Canada: University of British Columbia.

Gillespie A (1985). A conceptual framework for developing a dietary guidance system. *JNE* 17(4):139-142.

Glasauer P (2001). FAO: Food and Nutrition Division. Personal Communication.

Goldstone M (2001). Atlas.ti Consultant. Personal Communication.

Gopalan C (1997). President: Nutrition Foundation of India. Personal Communication.

Gordon Davis L, Van Rensburg L (2002). Dietary Guidelines. Chapter 12. In: The Hospitality Industry Handbook on Nutrition and Menu Planning. Cape Town: Juta & Co.

Greyvenstein L (2000). The appropriateness of the South African preliminary food-based dietary guidelines as a nutrition education tool for Tswana women in the North West Province. Unpublished Report. Potchefstroom: University of Potchefstroom, Department of Nutrition and Consumer Sciences.

Gummeson L, Jonsson I, Conner M, Svensson E (1996). Assessing factors influencing food choice among 10-16-year-old schoolboys - A pilot study with a stacking box method. *J Human Nutr & Diet* 9:219-229.

Gurney J (1982). Letter to the Editor: Food group classifications in nutrition education. *Human Nutr: Applied Nutr* 36(A):134.

Gust K, Gutsche S, Lohnes A (1995a). Reactions to the new "Canada's Food Guide to Healthy Eating" by groups of adolescents and children in Calgary, Alberta. *J Can Diet Assoc* 56(1):20-25.

Gust K, Gutsche S, Lohnes A (1995b). Reactions to the new "Canada's Food Guide to Healthy Eating" by groups of adult female consumers in Calgary, Alberta. *J Can Diet Assoc* 56(1):14-19.

Hadjilouca P (1997). President. The Cyprus Association of Food Scientists, Technologists and Dietitians : Nicosia. Personal communication.

HEA/MAFF (Health Education Authority/Ministry of Agriculture, Fisheries and Food) (1997). *Healthy Eating*. London: Foodsense.

Health and Welfare Canada (1990). *Action towards healthy eating - Canada's guidelines for healthy eating and recommended strategies for implementation: The report of the Communication/Implementation Committee*. Canada: Minister of Supply and Services.

Health and Welfare Canada (1992). *Food guide facts – Background for educators and communicators*. Canada : Minister of Supply and Services.

Health Systems Trust, Henry J Kaiser Family Foundation (1996). *South African Health Review for 1996*. Durban: Health Systems Trust.

Health Systems Trust, Henry J Kaiser Family Foundation (1998). *South African Health Review for 1998*. Durban: Health Systems Trust.

Health Systems Trust, Henry J Kaiser Family Foundation (2001). *South African Health Review for 2001*. Durban: Health Systems Trust.

Hertzler A (1996). Food guides : Programs and policies. *J Family & Consumer Studies* Summer:26-32.

Hertzler A, Stadler K, Lawrence R, Alleyne L, Mattioli L, Majidy M (1995). Empowerment: A food guidance process for cross-cultural counselling. *J Family & Consumer Studies* Summer:45-50.

Hunt P, Gatenby S, Rayner M (1995). The format for the National Food Guide: Performance and preference studies. *J Human Nutr & Diet* 8:335-351.

Hunt P, Rayner M, Gatenby S (1994). Pyramid or plate? The development of a National Food Guide for the UK: A preliminary article. *Nutr & Food Sci* 4:7-12.

Hunt P, Rayner M, Gatenby S (1995). A National Food Guide for the UK? Background and development. *J Human Nutr & Diet* 8:315-322.

IMR (Integrated Marketing Research) (1999). *Consumer Scope – Bringing LSM's to life*. Gauteng: IMR.

Iputo J, Makuzeni E (1993). The dietary patterns of the urban and rural Transkeian children with Protein-Energy Malnutrition. *SA J Clin Nutr* 6(3):6-10.

ILSI (International Life Sciences Institute) (1996). *Dietary guidelines in Asian countries: Towards a food-based approach. Proceedings of a Seminar and Workshop on National Dietary Guidelines: Meeting Nutritional needs of Asian Countries in the 21st Century, 27-28 July, 1996, Singapore*. Washington DC: ILSI Press.

IUPHC (1995). "Let the Sky to be the Limit" - Soul City evaluation report. Houghton: Institute of Urban Primary Health Care.

Johnson R, Kennedy E (2000). The 2000 Dietary Guidelines for Americans: What are the changes and why were they made? *J Am Diet Assoc* 100(7):769-774.

Kant A, Schatzkin A, Ziegler R, Nestle M (1991). Dietary diversity in the US population, NHANES II, 1976-1980. *J Am Diet Assoc* 91(12):1526-1531.

Kearney J, McElhone S (1999). Perceived barriers in trying to eat healthier – Results of a pan-EU consumer attitudinal survey. *Br J Nutr* 81(Suppl 2):S133-S137.

Keenan D, Abusabha R (2001). The fifth edition of the Dietary Guidelines for Americans: Lessons learned along the way. *J Am Diet Assoc* 101(6):631-634.

Kennedy E, Davis C (2000). Dietary guidelines 2000 – The opportunity and challenges for reaching the consumer. *J Am Diet Assoc* 100(12):1462-1465.

Kennedy E, Meyers L, Layden W (1996). The 1995 Dietary Guidelines for Americans: An overview. *J Am Diet Assoc* 96(3):234-237.

Kitzinger J (1995). Qualitative Research: Introducing focus groups. *BMJ* 311:299-302.

Krige M, Senekal M (1997). Factors influencing the nutritional status of pre-school children of farmworkers in the Stellenbosch district. *SA J Food Sci & Nutr* 9(1):14-23.

Kuzwayo P (1991). *Infant and child nutrition – A manual for health workers*. Cape Town: College Tutorial Press.

Labadarios D, Steyn N (2001). Editorial: South African food-based dietary guidelines – guidelines for whom? *SA J Clin Nutr* 14(1):5-6.

Labadarios D, Steyn N, Maunder E, MacIntyre U, Swart R, Gericke G, Huskisson J, Dannhauser A, Vorster H, Nesamvuni A (2001). The national food consumption survey (NFCS) – Children aged 1-9 years, South Africa 1999. *SA J Clin Nutr* 14(2):62-75.

- Ladzani R, Steyn N, Nel J (2000) An evaluation of the effectiveness of nutrition advisers in three rural areas of Northern Province. *SA J Clin Nutr* 13(3):75-79.
- Lambert EV, Bohlmann I, Kolbe-Alexander T (2001). "Be active": Physical activity for health in South Africa. *SA J Clin Nutr* 14(3):S11-S16.
- Langenhoven M, Rossouw J, Jooste P, Chalton D, Swanepoel A, Rossouw L, Jordaan P, Steyn M (1991). Change in knowledge in a coronary heart disease risk factor intervention study in three communities. *Soc Sci Med* 33(1):71-76.
- Langenhoven M, Steyn K, Van Eck M (1988). The food and meal pattern in the Cape Peninsula Coloured population. *Ecol Food Nutr* 22:107-116.
- Langenhoven M, Steyn K, Van Eck M, Gouws E (1988). Nutrient intake in the Coloured population of the Cape Peninsula. *Ecol Food Nutr* 22:97-106.
- Langenhoven M, Wolmarans P, Jooste P, Dhansay M, Benade A (1995). Food consumption profile of the South African population. *SA J Food Sci & Nutr* 91:523-528.
- Leedy (1993). *Practical research, planning and design*. 5th ed. New York: Macmillan Publishing Company.
- Levitt N, Mollentze W (1995). Diabetes Mellitus and impaired glucose tolerance: A review of South African studies. In: Fourie J, Steyn K, eds. *Chronic Diseases of Lifestyle*, MRC Technical Report 1995. Cape Town: MRC.
- Love P (2001). Open debate: South African food-based dietary guidelines. *SA J Clin Nutr* 14(2):42-43.
- Love P, Maunder E, Green M, Ross F, Smale-Lovely J, Charlton K (2001). South African food-based dietary guidelines: Testing of the preliminary guidelines among women in KwaZulu Natal and the Western Cape. *SA J Clin Nutr* 14(1):9-19.
- Love P, Sayed N (2001). "Eat plenty of vegetables and fruits everyday". *SA J Clin Nutr* 14(3):S24-S32.
- Mackeown J, Cleaton-Jones P, Hargreaves J (1994). Variety of individual food items consumed by 11-year-old children in KwaZulu and Namibia. *Ecol Food Nutr* 33:27-36.
- Mackeown J, Cleaton-Jones P, Senekal M (1993). Individual food items in the diet of South African pre-school children - energy, total protein, carbohydrate, fibre, added sugar and fat intake. *SA J Food Sci & Nutr* 6(3):94-98.
- Macpherson-Sanchez A (1998). A Food Guide Pyramid for Puerto Rico. *Nutr Today* 33(5):198-209.
- Manning E, Mann J, Sophangisa E, Truswell A (1974). Dietary patterns in urbanised blacks. *SAMJ* 48:485-498.

- Marais DL (2000). The appropriateness of the South African preliminary food-based dietary guidelines as a nutrition education tool for women in the Eastern Cape. Unpublished Report. Cape Town: University of Stellenbosch, Department of Human Nutrition.
- Maskow M (1992). Emergence of the Rainbow: Challenges of designing a new food guide. *RAPPORT - National Institute of Nutrition Publication* 7(4):2-3.
- Maunder E, Matji J, Hlatshwayo-Molea T (2001). Enjoy a variety of foods – difficult but necessary in developing countries. *SA J Clin Nutr* 14(3): supplement:S7-S11.
- Mays N & Pope C (1995). Qualitative Research: Rigour and qualitative research. *BMJ* 311:109-112.
- McAllister M, Baghurst K, Record S (1994). Financial costs of healthful eating: A comparison of three different approaches. *JNE* 26:131-139.
- McBean L (1994). Consumer attitudes and behaviour regarding diet, nutrition and health. *Dairy Council Digest* 65(6):31-36.
- McLachlan M, Kuzwayo P (1997). Bold choices: Making the South African nutrition strategy work (Development Paper 128). Halfway House, Gauteng: Development Bank of Southern Africa.
- Mertz W (2000). Three decades of dietary recommendations. *Nutrition Reviews* 58(10):324-331.
- Ministry of Health, Indonesia (1995). Nutritional guidelines for Indonesia. Jakarta: Directorate of Community Nutrition.
- Ministry of Health, Malaysia (1997). Healthy Lifestyle Campaign: Healthy Eating – Prime and supportive messages. Malaysia: National Working Group on Healthy Eating.
- Mollentze W, Moore A, Steyn A, Joubert G, Steyn K, Oosthuizen G, Weich D (1995). Coronary heart disease risk factors in a rural and urban Orange Free State black population. *SAMJ* 85:90-96.
- Morreale S, Schwartz N (1995). Helping Americans eat right: Developing practical and actionable public nutrition education messages based on the ADA survey of American Dietary Habits. *J Am Diet Assoc* 95(3):305-308.
- Murray C, Lopez A (1997). Mortality by cause for eight regions in the world: Global burden of disease study. *Lancet* 349:1269-1276.
- National Food Security and Nutrition Council (1999). Food and nutrition guidelines for Namibia. Windhoek, Namibia: Ministry of Health and Social Services, Food and Nutrition Unit.

- Nel J, Steyn N (2002). Report on South African Food Consumption Studies undertaken amongst Different Population Groups – 1983-2000: Average intakes of foods commonly consumed. Pretoria: Department of Health
- Ngcobo N (1998). Deputy Director: Nutrition Services, Department of Health, KwaZulu-Natal, South Africa. Personal communication.
- NHMRC (National Health and Medical Research Council) (1998). Dietary Guidelines for Australians. Canberra: AusInfo Legislative Services.
- Noakes T, Lambert V (1995). Exercise. In: Fourie J, Steyn K, eds. Chronic Diseases of Lifestyle, MRC Technical Report 1995. Cape Town: MRC.
- NOHS (1994). National Oral Health Survey - 1988/89. Pretoria: Department of Health.
- Nutrition Task Force (1991). Food for Health : Report of the Nutrition Task Force. New Zealand: Department of Health.
- NSSA (Nutrition Society of South Africa) (1996). Nutrition Task Teams for South Africa: A New Opportunity and Challenge. SA J Food Sci & Nutr 8(4):160.
- O'Brien C (2001). Consultant Nutritionist: Irish Sugar, Ireland. Personal Communication.
- Oelofse A, Jooste P, Steyn K (1996). The lipid and lipoprotein profile of the urban black South African population of the Cape Peninsula: The BRISK Study. SAMJ 86:162-166.
- Oldways Website: <http://www.oldwayspt.org/html>. Accessed June 1998.
- Orbeta S (1998). The Filipino Pyramid Food Guide. Nutr Today 33(5):210-216.
- Opie L (1995). Hypertension. In: Fourie J, Steyn K, eds. Chronic Diseases of Lifestyle, MRC Technical Report 1995. Cape Town: MRC.
- Paediatric FBDG Sub-Committee (2001). Minutes of the 9th Paediatric FBDG Meeting, 21st September 2001. Unpublished Report. Durban: SA FBDG Work Group.
- Patterson R, Satia J, Kristal A, Neuhouser M, Drewnowski A (2001). Is there a consumer backlash against the diet and health message? J Am Diet Assoc 101(1):37-41.
- Perkin J (1992). Design and use of questionnaires in research. In: Monsen E, ed. Research: Successful approaches. 1st ed. Mexico: Library of Congress.
- Pietinen P (2002). Report on technical assistance to the Directorate of Nutrition, Department of Health, concerning the sugar issue in the South-African Food Based Dietary Guidelines, January 21-25, 2002. Geneva: WHO.
- Pope C, Mays N (1995). Qualitative Research: Reaching the parts other methods cannot reach – an introduction to qualitative methods in health and health services research. BMJ 311:42-45.

Popkin B, Siega-Riz A, Haines P (1996). A comparison of dietary trends among racial and socio-economic groups in the United States. *New Eng J Med* 335:716-720.

Ramphela M, Heap M, Trollip D (1991). Health status of hostel dwellers, Part III: Nutritional status of children 0-5 years. *SAMJ* 79:705-709.

Richardson B, Cleaton-Jones P (1986). Some Indian communities in South Africa and their culture. *Br Dent J* 160:5-7.

Richardson B, Sinwel R, Cleaton-Jones P (1991). Dietary habits. In: Dental caries, nutrient intake, dietary habits, anthropometric status, oral hygiene, and salivary factors and microbiota in South African black, Indian and white 4-5 year old children. Cape Town: MRC.

Ritchie J (1981). The misuse of food group classifications for nutrition education in developing countries. *J Human Nutr* April:81-83.

Rose D, Charlton C (2000). Food security and food poverty in South African households. In: Proceedings of the National Biennial Nutrition Congress "From Lab to Land" 15-18 August, Durban, South Africa. *SA J Clin Nutr* 13(3):105.

Sabry Z (1990). Dietary guidelines and their policy implications. In: Proceedings of the International "Dietary Guidelines : Expectations and Realities" Symposium 11-12 May. Vancouver, Canada: University of British Columbia.

SA FBDG Work Group (1998). Preliminary food-based dietary guidelines for South Africans. Unpublished Report. Durban: SA FBDG Work Group.

SA FBDG Work Group (1999). Preliminary food-based dietary guidelines for South Africans. Unpublished Report. Durban: SA FBDG Work Group.

SA FBDG Work Group (2000). Preliminary food-based dietary guidelines for South Africans. Unpublished Report. Durban: SA FBDG Work Group.

SA FBDG Work Group (2001). Preliminary food-based dietary guidelines for South Africans. Unpublished Report. Durban: SA FBDG Work Group.

SA FBDG Work Group (2002). Preliminary food-based dietary guidelines for South Africans. Unpublished Report. Durban: SA FBDG Work Group.

Sandelowski M (1995). Focus on Qualitative Methods: Qualitative analysis – What it is and how to begin. *Research in Nursing & Health* 18:371-375.

SANSS (SA National Nutrition Survey Study) (1995). Nutrient intakes of South Africans: An analysis of the literature. Unpublished report. Isando: Roche Products.

SAVACG (South African Vitamin A Consultative Group) (1995). Children aged 6-71 months in South Africa: Their anthropometric, vitamin A, iron and immunisation coverage status. Isando: SAVACG.

- Savage-King F, Burgess A (1995). Nutrition for developing countries, 2nd ed. UK: Oxford University Press.
- Scholtz C, Vorster (Jnr) H, Matshego L, Vorster H (2001). "Meat, fish, chicken, milk or eggs can be eaten everyday": Not a conundrum! SA J Clin Nutr 14(3):S39-S47.
- Seftel H, Raal F, Joffe B (1995). Dyslipidaemia in South Africa. In: Fourie J, Steyn K, eds. Chronic Diseases of Lifestyle, MRC Technical Report 1995. Cape Town: MRC.
- Shils M, Olson J, Shike M (1994). Diet in the health of populations. In: Modern nutrition in health and disease. Philadelphia: Lea & Febiger.
- Simon J (1999). Conducting successful focus groups. Saint Paul, Minnesota: Amherst H. Wilder Foundation.
- Sitas F, Norman R (1995). Lifestyle-induced cancers. In: Fourie J, Steyn K, eds. Chronic diseases of lifestyle. MRC Technical Report 1995. Cape Town: MRC.
- Sitas F, Terblanche M, Madhoo J (1996). National cancer registry of South Africa: Incidence and geographical distribution of histologically diagnosed cancer in South Africa, 1990 and 1991. Johannesburg: SAIMR.
- Smith B (1997). Past experiences and needs for nutrition education - Summary and conclusions of nine case studies. In: Nutrition education for the public - Discussion papers of the FAO Expert Consultation (No. 62). Rome: FAO.
- Smith B, Smitasiri S (1997). A framework for nutrition education programmes. In: Nutrition education for the public - Discussion papers of the FAO Expert Consultation (No. 62). Rome: FAO.
- Statistics SA (1998). Census in brief. Statistics South Africa: Pretoria.
- Steyn K, Fourie J, Bradshaw D (1992). The impact of chronic diseases of lifestyle and their major risk factors on mortality in South Africa. SAMJ 82:227-231.
- Steyn M, Louw L, Neethling A (1993). Evaluation - Rama A1 Nutrition Education Programme. Pretoria: Human Sciences Research Council.
- Steyn N (1998). Nutrition insecurity – A complex problem. Editorial. SA J Clin Nutr 88(5):639-640.
- Steyn N, Abercrombie R, Labadarios D (2001). Food security – An update for health professionals. SA J Clin Nutr 14(3):98-102.
- Steyn N, Myburgh N (2002). Evidence to support a food-based dietary guideline on sugar. Independent Report compiled on behalf of the Department of Health. Pretoria: Department of Health, Nutrition Directorate.

Steyn N, Nel J, Tichelaar H, Prinsloo J, Dhansay M, Oelofse A, Benade A (1994). Malnutrition in Pedi pre-school children, their siblings and caretakers. *SA J Clin Nutr* 7(4):12-18.

Steyn N, Pettifor J, Van der Westhuyzen J, Van Niekerk L (1990). Nutritional status of school children in the Richtersveld. *SA J Food Sci & Nutr* 2(3):52-56.

Steyn N, Robertson H-L, Mekuria M, Labadarios D (1998). Household food security – What health professionals should know. *SA J Clin Nutr* 88(1):75-79.

Stuart T, Achterberg C (1997). Education and communication strategies for different groups and settings. In: *Nutrition education for the public - Discussion papers of the FAO Expert Consultation (No. 62)*. Rome: FAO.

Terre Blanche M, Durrheim K (1999). *Research in Practice*. Cape Town: UCT Press.

The Children's Health Development Foundation (South Australia) and Deakin University (Victoria) (1998). *The Australian Guide to Healthy Eating*. Australia: Commonwealth Department of Health and Family Services (National Food and Nutrition Policy Programme).

The Valley Trust Annual Report (1996). *Annual Report: Food security - The challenge for South Africa*. KwaZulu Natal: The Valley Trust.

Truswell A (1998). Practical and realistic approaches to healthier diet modifications. *Am J Clin Nutr* 67(Suppl):583S-590S.

UNICEF (1993). *Children and women in South Africa - Situation analysis*. Johannesburg: United Nations Children's Fund.

UNISA (1994). Household expenditure in South Africa by area, population group and product, 1993. Research Report No. 205. UNISA: Bureau of Market Research.

Van Eeden T, Gericke G (1996). Effect of acculturation on habitual food intake and dietary patterns of rural and urban black Home Economics students. *SA J Food Sci & Nutr* 8(3):85-94.

Van Heerden I, Parry C (2001). "If you drink alcohol, drink sensibly": Or in vino veritas? *SA J Clin Nutr* 14(3):S71-S77.

Venter C, Van Eyssen E (2001). More legumes for better overall health. *SA J Clin Nutr* 14(3):S327-S38.

Vermaak L, Steenkamp Y, Malan C, Coetzee I (2001). Aanvaarbaarheid van die voedselgebaseerde dieetriglyne vir Blanke Afrikaanssprekende vroue in Pretoria. Unpublished Report. Pretoria: University of Pretoria, Division of Human Nutrition.

Vorster H (1997). Wanvoeding in Suid-Afrika: Strategiee om onder- en oorvoeding aan te spreek. Wetenskaplike bydraes van die PU vir CHO. IRS-Studiestuk Nr. 349. Potchefstroom: Instituut vir Reformatoriese Studie.

- Vorster H, Love P, Browne C (2001). Development of food-based dietary guidelines for South Africa – The process. *SA J Clin Nutr* 14(3): supplement:S3-S6.
- Vorster H, Nell T (2001). Make starchy foods the basis of most meals. *SA J Clin Nutr* 14(3): supplement:S17-S24.
- Vorster H, Oosthuizen W, Jerling J, Veldman F, Burger H (1997). The nutritional status of South Africans: A review of the literature from 1975-1996. Durban: Health Systems Trust.
- Vorster H, Venter C, Mennsink E, Van Staden D, Labadarios D, Strydom A, Silvis N, Gericke G, Walker A (1994). Adequate nutritional status despite restricted dietary intake in adult rural Vendas. *SA J Clin Nutr* 7(2):3-16.
- Walker A (1995). Epidemiology and health implications of obesity in Southern Africa. In: Fourie J, Steyn K, eds. *Chronic Diseases of Lifestyle*, MRC Technical Report 1995. Cape Town: MRC.
- Walker A (1996). The nutritional challenges in the new South Africa. *Nutr Res Rev* 9:33-65.
- Walker A, Bourne L (1996). Dietary recommendations for disease avoidance - are they affordable? *SAMJ* 86(7):869-870.
- Walker A, Vorster H (1997). Dietary guidelines: A case of public indifference. *SA J Food Sci & Nutr* 9(1):1-2.
- Walker A, Walker B, Walker A (1992). Comparison of nutrient intakes of South African elderly rural black women in 1969 and 1989. *J Human Nutr & Diet* 5:169-177.
- Waterlow J, Payne P (1975). The protein gap. *Nature* 258:113-117.
- Walsh C (1995). The effect of a nutrition education programme on the knowledge of nutrition and dietary practices of lower socio-economic Coloured communities. PhD Thesis. Bloemfontein: Faculty of Medicine, University of the Free State.
- Welsh S (1996). Nutrient standards, dietary guidelines and food guides. In: *Present Knowledge in Nutrition*. 7th ed. Washington DC: ILSI Press.
- Welsh S, Davis C, Shaw A (1992a). A brief history of food guides in the United States. *Nutr Today* Nov/Dec:6-11.
- Welsh S, Davis C, Shaw A (1992b). Development of the Food Guide Pyramid. *Nutr Today* Nov/Dec:12-23.
- Werner D, Bower B (1995). A new way of looking at food groups. In: *Helping Health Workers Learn*. 1st ed. UK: The Hesperian Foundation.
- Wheat Board (1990). *Guide to Healthy Eating*. A Wheat Board publication in collaboration with the Department of National Health and Population Development. Pretoria: CTP Book Printers.

Willett W, Sacks F, Trichopoulou A, Dreschner G, Ferro-Luzzi A, Helsing E, Trichopoulos D (1995). Mediterranean Diet Pyramid: A cultural model for healthy eating. *Am J Clin Nutr* 61(Suppl):1402S-1406S.

WHO (1999). Development of food-based dietary guidelines for the Western Pacific Region. Manila: WHO.

WHO (1998). Preparation and use of food-based dietary guidelines. Report of a joint FAO/WHO consultation. Technical Report Series 880. Geneva: WHO.

Wolmarans P (1997). Effect of lean red meat or chicken or fish, in a prudent diet, on the lipid metabolism of hypercholesterolaemic subjects. PhD Thesis. Potchefstroom: University for CHE.

Wolmarans P, Oosthuizen W (2001). Eat fats sparingly – implications for health and disease. *SA J Clin Nutr* 14(3): supplement:S48-S55.

Yach D (1995). Smoking: Review of research and identification of future research priorities. In: Fourie J, Steyn K, eds. *Chronic Diseases of Lifestyle*, MRC Technical Report 1995. Cape Town: MRC.

APPENDICES

<u>Appendix 1</u>	Dietary guidelines published in other countries	Chapter 2
<u>Appendix 2</u>	Descriptions: food guides of different countries	Chapter 2
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APPENDIX 1

DIETARY GUIDELINES PUBLISHED IN OTHER COUNTRIES

Table 1A - United Kingdom, Ireland, Belgium and The Netherlands

Table 1B - Hungary, Denmark, France and Germany

Table 1C - Australia, New Zealand, United States and Canada

Table 1D - Japan, Singapore and Sri Lanka

Table 1E - Indonesia, Malaysia and the Philippines

Table 1F - Korea, China and Thailand

Table 1G - India and the Asian Region

Table 1H - Namibia and South Africa

Table 1A Dietary guidelines published in other countries – United Kingdom, Ireland, Belgium and The Netherlands
(after O'Brien 2000; De Henauw & De Backer 1999; HEA/MAFF 1997; BFNE 1993)

UNITED KINGDOM (1997)	IRELAND (1995)	BELGIUM (1997)	THE NETHERLANDS (1993)
Enjoy your food	Eat a wide variety of foods	Eat a variety of foods	Eat a variety
Eat a variety of different foods	Balance energy intake with physical activity	Eat lots of vegetables, fruit, potatoes and whole-grain cereals	Be moderate with fat
Eat the right amount to be a healthy weight	Eat plenty of fruit and vegetables; aim to eat at least 4 servings every day	Moderate on meat, fat, sugar and salt	Eat plenty of carbohydrates and fibre
Eat plenty of foods rich in starch and fibre	Starchy foods such as bread (preferably wholemeal), cereal, pasta and rice as well as fruit and vegetables should be eaten daily.	Drink a lot of water and milk products	Eat 3 meals a day and do not snack more than 4 times in between meals
Eat plenty of fruit and vegetables	Frequent consumption throughout the day of foods containing sugar should be avoided, especially by children	Eat on a regular basis and not more than 5 times a day	Be careful with salt
Don't eat too many foods that contain a lot of fat	Total fat intake should be reduced, with emphasis on reducing saturated fats. Some saturated fats may be replaced by unsaturated fats. Oily fish is a good source of unsaturated fats as well as some essential fatty acids.	Take sufficient time for your meals	Drink daily at least 1½ litres of fluid, but be moderate with alcohol
Don't have sugary foods and drinks too often		Wash hands before eating or preparing foods	Keep your body weight at its correct level
If you drink alcohol, drink sensibly		Read the information of food packages	Prevent food-borne infections through good hygiene
		Watch your weight	Keep in mind the presence of harmful substances in foods
		Take some physical activity regularly	Read the information on the label

Table 1B Dietary guidelines published in other countries – Hungary, Denmark, France and Germany (after German Nutrition Society (DGE) 2001; Shils, Olson & Shike 1994)

HUNGARY (1988)	DENMARK (1983)	FRANCE (1981)	GERMANY (2001)
Eat a variety of foods	Eat a variety of foods	Adapt alimentary consumption to needs	Choose from among many different foods
Avoid too much fat; use vegetable oil and margarine	Eat more bread and corn products, potatoes, vegetables and fruit	Eat three good meals each day	Cereal products several times per day and plenty of potatoes
Avoid too much salt	Eat less butter, margarine, fat, sugar, meat fat and fewer fat and fatty meat products and full cream dairy products	Consume a varied and diversified diet	Fruit and vegetables – take “5 a day”
Reduce sugary snacks		Soft drinks contain sugar (energy)	Milk and dairy products daily; fish once a week; meat, sausages and eggs in moderation
Drink half a litre of low fat milk per day		Alcohol abuse can cause disease	Low fat diet
Eat fresh fruits, vegetables and salads more often		Everyone should reduce intake of fats, especially foods rich in saturated fats	Sugar and salt in moderation
Always have whole-grain bread on the table; choose potatoes over rice		Vegetable proteins should be used more	Plenty of liquid
Eat 4 or 5 meals daily; none too rich or too light		Avoid an increase in sugar intake	Make sure your dishes are prepared gently and taste well
Quench thirst with water; it's best to avoid alcohol and alcohol is forbidden for children and pregnant women		For sufficient fibre, take wholemeal breads, vegetables, cereals, (dry) legumes and dried fruits	Take your time and enjoy eating
		It is sensible to add less salt in food preparation or while eating	Watch your weight and stay active

Table 1C Dietary guidelines published in other countries – Australia, New Zealand, United States and Canada (after Kennedy & Davis 2000; Australian Nutrition Foundation 1998; Nutrition Task Force 1991; Health and Welfare Canada 1990)

AUSTRALIA (1992)	NEW ZEALAND (1991)	UNITED STATES (2000)	CANADA (1990)
Enjoy a wide variety of nutritious foods	Eat a variety of foods from each of the 4 major food groups each day * vegetables and fruits * breads and cereals * milks and dairy products, especially low fat varieties * lean meats, poultry, fish, eggs, nuts and pulses	Let the pyramid guide your food choices.	Enjoy a variety of foods
Eat plenty of breads and cereals (preferably whole-grain), vegetables (including legumes) and fruits		Aim for a healthy weight.	Emphasise cereals, breads, other grain products, vegetables and fruits
Eat a diet low in fat and, in particular, low in saturated fat	Prepare meals with minimal added fat (especially saturated fat), salt and sugar	Be physically active.	Choose low fat dairy products, lean meats and foods prepared with little or no fat
Maintain a healthy body weight by balancing physical activity and food intake	Choose pre-prepared foods and snacks that are low in fat (especially saturated fat), salt and sugar	Choose a variety of grains daily, especially whole grains.	Achieve and maintain a health body weight by enjoying regular physical activity and healthy eating
If you drink alcohol, limit your intake	Maintain a healthy body weight by regular physical activity and by health eating	Choose a variety of fruits and vegetables daily.	Limit salt, alcohol and caffeine
Eat only a moderate amount of sugars and foods containing added sugars	Drink plenty of liquids each day	Keep food safe to eat.	
Choose low salt foods and use salt sparingly	If you drink alcohol, do so in moderation	Choose foods low in saturated fat and cholesterol and moderate in other fats.	
Encourage and support breastfeeding		Choose beverages and foods to moderate your intake of sugars.	
Eat foods containing calcium – particularly girls and women		Choose and prepare foods with less salt.	
Eat foods containing iron – particularly girls, women, vegetarians and athletes		If you drink alcoholic beverages, do so in moderation.	

Table 1D Dietary guidelines published in other countries – Japan, Singapore and Sri Lanka (after ILSI 1996; Shils, Olson & Shike 1994)

JAPAN (1985)	SINGAPORE (1993)	SRI LANKA (1994)
<u>Eat a variety of foods to ensure a well-balanced diet</u> – eat 30 or more different kinds of food daily	Eat a variety of foods	Mothers choose a variety of locally available nutritious foods
<u>Maintain ideal body weight</u> - avoid excessive calorie intake to prevent obesity; adjust physical activity to match daily calorie intake	Maintain desirable body weight	Mothers serve leafy vegetables daily and fruits and other vegetables daily or as often as possible
<u>Be aware that the type of fat consumed is as important as the quantity</u> - avoid eating too much fat; use vegetable oils rather than animal fats	Restrict total fat intake to 20%-30% of total energy	Families always use iodised salt in food preparation
<u>Avoid eating too much salt</u> - aim for a salt intake of less than 10g per day; appropriate cooking cuts down on excessive salt intake	Modify composition of fat in the diet to one-third polyunsaturated, one-third monounsaturated and one-third saturated	Families choose nutritious food crops available in their area
<u>Make all activities pertaining to food pleasurable ones</u> – use meal times as occasions for family communication; enjoy cooking at home	Reduce cholesterol intake to less than 300mg/day	Families keep in mind that not all foods advertised in the media are nutritious or good value for money
	Maintain intakes of complex carbohydrate at about 50% of total energy intake	Families use simple traditional recipes of high nutritional value for preparing food (e.g.: mixed vegetable curries, and one-pot meals)
	Reduce salt intake to less than 4.5g/day (1800mg sodium)	
	Reduce intake of salt-cured, preserved and smoked foods	
	Reduce intake of refined and processed sugar to less than 10% of energy	
	Increase intake of fruits and vegetables and whole-grain cereal products, thereby increasing vitamin A and C and fibre	
	For those who drink, have no more than two to three standard drinks (about 40g alcohol) per day	
	Encourage breastfeeding of infants until they are at least 6 months old	

Table 1E Dietary guidelines published in other countries – Indonesia, Malaysia and the Philippines (after Ministry of Health, Malaysia 1997; ILSI 1996; Ministry of Health, Indonesia 1995)

PHILIPPINES (1990)	INDONESIA (1995)	MALAYSIA (1996)
<u>Eat a variety of foods everyday</u> (this will ensure you are getting all the nutrients you need)	Eat a wide variety of foods	Eat a variety of foods
<u>Promote breastfeeding and proper weaning</u> (this will ensure a healthy infant)	Consume foods to provide sufficient energy	Maintain healthy body weight by balancing food intake with regular physical activity
<u>Achieve and maintain desirable body weight</u> (this will ensure proper growth and development, help keep away heart disease and other chronic degenerative diseases)	Obtain about one-half of total energy from complex carbohydrate-rich food	Eat more rice and other cereal products, legumes, fruits and vegetables
<u>Eat clean and safe food</u> (this will prevent food-borne diseases in the family)	Obtain not more than one-quarter of total energy intake as fats and oils	Minimise fat in food preparation and choose foods that are low in fat and cholesterol
<u>Practice a healthy lifestyle</u> (this will promote a long and enjoyable life)	Use only iodised salt	Use salt sparingly and choose foods low in salt
	Consume iron-rich foods	Reduce sugar intake and choose foods low in sugar
	Breastfeed your baby exclusively for 4 months	Drink plenty of water daily
	Eat some meal for breakfast	Practise and promote breastfeeding
	Drink adequate quantities of fluids that are free of contaminants	
	Take adequate exercise in sport	
	Avoid drinking alcoholic beverages	
	Consume safe foods	
	Read labels of packaged foods	

Table 1F Dietary guidelines published in other countries – Korea, China and Thailand
(after Chinese Nutrition Society 2000; Department of Health, Thailand 1999; ILSI 1996; Shils, Olson & Shike 1994))

KOREA (1986)	CHINA (1989)	THAILAND (1995)
Eat a variety of foods	Eat a variety of foods, with cereal as the staple	Eat a variety of foods from each of the five food groups and maintain proper weight
Keep ideal body weight	Consume plenty of vegetables, fruits and tubers	Eat adequate amounts of rice or alternative carbohydrate sources
Consume enough protein	Consume milk, beans, dairy- or bean-products every day	Eat plenty of vegetables and fruits regularly
Keep fat consumption at 20% of energy intake	Consume appropriate amounts of fish, poultry, eggs and lean meat; reduce fatty meat and animal fat in the diet	Eat fish, lean meats eggs, legumes and pulses regularly
Drink milk every day	Balance food intake with physical activity to maintain a healthy body weight	Drink milk in appropriate quality and quantity for one's age
Reduce salt intake	Choose a light diet that is also low in salt	Eat a diet containing appropriate amounts of fat
Keep in good dental health	If you drink alcoholic beverages, do so in limited amounts	Avoid sweet and salty foods
Moderate alcohol and caffeine consumption	Avoid unsanitary and spoiled foods	Eat clean and safe food
Keep harmony between diet and daily life		Avoid or reduce the consumption of alcoholic beverages
Enjoy meals		

Table 1G Dietary guidelines published in other countries – India and the Asian Region
(after Asian Nutrition Foundation 1997; Gopalan 1997)

INDIA (for relatively poor Indians) (1988)	INDIA (for affluent Indians) (1988)	ASIAN REGION (preliminary) (1997)
Diet should be the least expensive and conform to traditional and cultural practices as closely as possible	Overall energy should be restricted to levels commensurate with sedentary occupations, so that obesity is avoided	Eat enough food to meet body needs and maintain healthy body weight
Energy derived from cereals need not exceed 75% of total energy requirement	Give preference to under-milled rather than highly refined and polished cereals	Eat a variety of foods
Some pulses (legumes) should be eaten along with the high-cereal diet, with at least 150ml milk and 150g vegetables per day	Include green leafy vegetables in the diet	Eat clean and safe food
Energy from fat and oil need not exceed 10% and that from refined carbohydrate (sugar or jaggery) need not exceed 5% of total calories	Restrict daily edible fat intake to less than 40g, total fat intake to less than 20% total calories, and intake of ghee (clarified butter) to special occasions only	Eat whole-grain cereals, legumes, roots and tubers
	Restrict intake of sugar and sweets	Eat plenty of vegetables and fruits regularly
	Avoid high-salt intake, especially those prone to hypertension	Eat moderate amounts of fat in your diet
		Limit salt intake
		Limit sugar intake
		Avoid or limit alcohol
		Breastfeed

Table 1H Dietary guidelines published in other countries – Namibia and South Africa
 (after National Food Security and Nutrition Council 1999; Love, Maunder, Green, Ross, Smale-Lovely & Charlton 2001)

NAMIBIA (1999)	SOUTH AFRICA (2001)
Eat a variety of foods	Enjoy a variety of foods
Eat vegetables and fruit everyday	Be active!
Eat more fish	Make starchy foods the basis of most meals
Eat beans or meat regularly	Eat plenty of fruits and vegetables every day
Use whole-grain products	Eat legumes regularly
Use only iodised salt, but use less salt	Foods from animals can be eaten every day
Eat at least three meals a day	Use fat sparingly
Avoid drinking alcohol	Use salt sparingly
Consume clean and safe water and food	Drink lots of clean, safe water
Achieve and maintain a healthy body weight	If you drink alcohol, drink sensibly
	Eat healthier snacks

APPENDIX 2

DESCRIPTIONS: FOOD GUIDES OF DIFFERENT COUNTRIES

Table 2A - United Kingdom, The Netherlands, Australia and New Zealand

Table 2B - Indonesia, Philippines, Malaysia and Thailand

Table 2C - Asian Region, Mediterranean, United States and Canada

Table 2D - South Africa and “Lesser Developed” Countries

Table 2A Food guides of different countries – United Kingdom, The Netherlands, Australia and New Zealand (after The Children’s Health Development Foundation, South Australia, and Deakin University, Victoria 1998; Hunt, Rayner & Gatenby 1995; BFNE 1993; Nutrition Task Force 1991).

UNITED KINGDOM	THE NETHERLANDS	AUSTRALIA	NEW ZEALAND
The Balance of Good Health	Voedingswijzer (The Food Guide)	The Australian Guide to Healthy Eating	No name
<ul style="list-style-type: none"> - tilted plate graphic - illustrates types and proportions of foods needed for a balanced and healthy diet 	<ul style="list-style-type: none"> - tilted oval graphic - foods in each group are classified as “good”, “better” or “best” choices as no foods are considered “unhealthy” 	<ul style="list-style-type: none"> - circular graphic - illustrates foods most commonly eaten in Australia - foods grouped according to nutrient similarity 	<ul style="list-style-type: none"> - no pictorial design
<ul style="list-style-type: none"> - 5 food groupings * bread, other cereals and potatoes * fruit and vegetables * milk and dairy foods * meat, fish and alternatives * foods containing fat and/or sugar 	<ul style="list-style-type: none"> - 4 food groups, and fluids * carbohydrates (bread, potatoes, pastas, legumes, sweets, cookies) * vitamin C (vegetables, fruits, juices) * protein (milk and milk products, cheese, meat, poultry, eggs, fish, soya products, snacks) * fat (butter, margarine, oils, savoury sauces, nuts, crisps) * fluids (water, tea, coffee, soft drinks, alcohol) 	<ul style="list-style-type: none"> - 5 food groupings with water and other foods shown separately * breads, cereals, rice, pasta, noodles * vegetables, legumes * fruit * milk, yoghurt, cheese * meat, poultry, eggs, nuts, legumes - Water – 8 glasses/day - Other foods - to be eaten sometimes or in small amounts (biscuits, soft drinks, pies, chips, crisps, chocolate, ice-cream, oils, margarine) 	<ul style="list-style-type: none"> - 4 food groupings * vegetables and fruits * breads and cereals * milks and dairy products, especially low fat varieties * lean meats, poultry, fish, eggs, nuts and pulses

Table 2B Food guides of different countries – Indonesia, Philippines, Malaysia and Thailand
(after Department of Health, Thailand 1999; Orbeta 1998; Ministry of Health, Malaysia 1997; Ministry of Health, Indonesia 1995).

INDONESIA	PHILIPPINES	MALAYSIA	THAILAND
No name	The Filipino Pyramid Food Guide	Food Pyramid	No name
<ul style="list-style-type: none"> - triangular graphic - featuring 4 food groupings 	<ul style="list-style-type: none"> - pyramid graphic - based on the United States Food Guide Pyramid - featuring 4 levels of consumption and 5 food groupings 	<ul style="list-style-type: none"> - triangular (pyramid) graphic - featuring 4 levels of consumption and 5 food groupings 	<ul style="list-style-type: none"> - no pictorial graphic
<ul style="list-style-type: none"> - 4 food groupings * base of triangle – staples/starchy foods (taro, rice, corn, potatoes, sweet potatoes, cassava, bread, sago, cooking banana, noodles) * middle tier – vegetables (tomatoes, cassava and paw-paw leaves, cabbage, spinach, fern shoots, yard-long bean, carrots) * middle tier – fruits (durian, oranges, pineapple, pears, bananas, mango, paw-paw) * top tier – protein-rich foods (milk, legumes, soya, chicken, liver, meats, eggs, fish) 	<ul style="list-style-type: none"> - 4 levels * level 1 (base of pyramid) – eat most (rice, root-crops, corn, noodles, breads, cereals) * level 2 – eat more (fruit, vegetables) * level 3 – eat some (fish, poultry, dry beans, nuts, egg, lean meats, low fat dairy) * level 4 (tip of pyramid) – eat a little (fats, oils, sugar) 	<ul style="list-style-type: none"> - 4 levels * level 1 (base of pyramid) – eat most (cereals, cereal products, tubers) * level 2 – eat more (fruit, vegetables) * level 3 – eat moderately (fish, poultry, meat, legumes; and milk, dairy products) * level 4 (tip of pyramid) – eat least (fat, oil, sugar) 	<ul style="list-style-type: none"> - 5 food groupings * milk, eggs, meat, legumes, sesame seeds (for growth and maintenance of body tissues) * rice, cereals, starchy foods, sugar (for energy) * vegetables (for assisting regular body functions) * fruits (for assisting regular body functions) * oils and fats from plants and animals (for providing energy and body warmth)

Table 2C Food guides of different countries – Asian Region, Mediterranean, United States and Canada

(after Oldways Website 1998; Hadjilouca 1997; Willet, Sacks, Trichopoulou, Drescher, Ferro-Luzzi, Helsing & Trichopoulos 1995; Health and Welfare Canada 1992; Welsh, Davis & Shaw 1992a).

ASIAN REGION	MEDITERRANEAN (Crete, Greece, Italy)	UNITED STATES	CANADA
Healthy Asian Diet Pyramid	Mediterranean Diet Pyramid	The Food Guide Pyramid	Canada's Food Guide to Healthy Eating
<ul style="list-style-type: none"> - pyramid graphic - based on the United States Food Guide Pyramid - featuring 4 levels of consumption and 10 food groupings 	<ul style="list-style-type: none"> - pyramid graphic - based on the United States Food Guide Pyramid - featuring 3 levels of consumption and 11 food groupings 	<ul style="list-style-type: none"> - pyramid graphic to illustrate variety, balance (proportion) and moderation - featuring 5 food groupings, with symbols to illustrate fat and added sugars - range of servings is given for each food grouping 	<ul style="list-style-type: none"> - rainbow graphic - featuring 4 food groupings with 6 directional statements
<ul style="list-style-type: none"> - 4 levels * level 1 - daily consumption (rice, rice products, noodles, breads, millet, corn, other grains; fruit; legumes, nuts, seeds; vegetables; vegetable oils) * level 2 – optional daily consumption (fish, shellfish; dairy) * level 3 – weekly consumption (eggs, poultry; sweets) * level 4 – monthly consumption (red meat) * Additional advice - physical activity - moderate consumption of alcohol 	<ul style="list-style-type: none"> - 3 levels * level 1 – daily consumption (breads, pasta, rice, couscous, polenta, bulgur, other grains, potatoes; fruits; beans, other legumes, nuts; vegetables; olive oil; cheese, yoghurt) * level 2 – a few times per week (fish; poultry; eggs; sweets) * level 3 – a few times per month (red meat) * Additional advice - regular physical activity - wine in moderation 	<ul style="list-style-type: none"> - 5 major food groupings * base of pyramid - bread, cereal, rice and pasta * tier 2 - vegetables * tier 2 - fruit * tier 3 - milk, yoghurt and cheese * tier 3 - meat, poultry, fish, dry beans, eggs and nuts - apex of pyramid – fats, oils, sweets (and symbols) 	<ul style="list-style-type: none"> - 4 nutrient dense food groupings * grain products * vegetables and fruit * milk products * meat and alternatives - Statement regarding “other foods” (water, alcohol, caffeine)

Table 2D Food guides of different countries – South Africa and “Lesser Developed” Countries
 (after Burns, Lovich, Maxwell & Shapiro 1997; Kuzwayo 1991; Wheat Board 1990; Fedfood (Pty) Ltd & Vandenburgs (Pty) Ltd 1985).

SOUTH AFRICA	“LESSER DEVELOPED” COUNTRIES
No name	Mixed Meal Guide (Multimix System)
No standard pictorial design - 3 food groupings often depicted as a 3-legged cooking pot - 5 food groupings commonly depicted as a circular graphic, a “food square” or an adaptation of the United States Food Guide Pyramid	“Main Foods” illustrated in the centre “Helper Foods” illustrated around the “Main Foods”
- 3 food groups * body building foods (meats, dairy, legumes) * energy foods (breads, cereals, fats) * protective foods (fruits, vegetables) - 5 food groups * grains and grain products * fruit and vegetables * meat and meat substitutes * milk and milk products * fats and oils	- Main foods * staples/carbohydrate-rich foods - Helper foods * beans * milk products * meat, eggs, fish * nuts * fats * sugars * fruits * vegetables * water

APPENDIX 3**DRAFT COPY OF EXPLANATORY CONSUMER TEXT**

**Food-based dietary guidelines for South Africans (older than 7 years)
(as at December 2002)**

Information in this brochure provides advice for South Africans over the age of 7 years about food choices for good health. Following the advice in this brochure will help you to be in control of your own health.

To eat well and live well, you need to eat a healthy diet and live a healthy lifestyle. Use the dietary guidelines below to help you and your family take action for good health.

Dietary guidelines for South Africans
Enjoy a variety of foods
Be active!
Make starchy foods the basis of most meals
Eat plenty of vegetables and fruits everyday
Eat dry beans, peas, lentils and soya regularly
Chicken, fish, meat, milk or eggs could be eaten daily
Use sugar and sugar-containing foods and drinks in moderation
Eat fats sparingly
Use salt sparingly
Drink lots of clean, safe water
If you drink alcohol, drink sensibly

Be active!

Being active and eating healthily are the best ways to prevent you from gaining weight, or developing osteoporosis (brittle bones), high cholesterol, diabetes and high blood pressure. Being active can help you to sleep better and increase your work performance.

Physical activity includes all forms of activity. This can be walking briskly, playing outdoors with the children, gardening, or sweeping the house.

Try to do some physical activity every day. You can have a 30-45 minute session, or three short 10-minute sessions, over the course of the day.



Enjoy a variety of foods

- * Food is essential for life, providing us with energy and important nutrients for growth and development.
- * We also eat food for the sheer enjoyment of it. Sharing a meal with family and friends is a wonderful way to relax.

- * Your body needs a variety of different nutrients and so you need to eat a variety of different foods. No single food or meal can provide you with all the nutrients you need.

- * Nutritionally speaking, there are no good or bad foods. No food can be called junk food. However, unhealthy eating habits, like skipping meals, can lead to an unhealthy eating pattern.

- * Eating 3 meals a day is still the golden standard (morning, noon and evening). Starting the day with a meal is essential to provide enough energy to cope with morning activities. Eating regular meals can prevent tiredness, irritability, poor concentration and over-eating. Eating snacks between meals is fine as long as your total food intake meets your needs.

Make starchy foods the basis of most meals



- * Starchy foods (like maize meal, bread, rice, pasta, porridge, breakfast cereal and rice) are an important part of a healthy diet.

- * These foods are a rich source of carbohydrates, which supply the body with energy. They are also low in fats, depending on how they are prepared and what is added to them when they are eaten.

- * Minimally processed and fortified starchy foods are also a good source of fibre, vitamins and minerals.

- * Starchy foods should form the central part of each meal and be eaten in larger amounts than the other foods at the meal.

- * Some people think that starchy foods are fattening, this is not true. Starchy foods, especially those rich in fibre, provide bulk to a meal, making it difficult to overeat on these foods.

Eat plenty of vegetables and fruits everyday

- * Vegetables and fruits are the best suppliers of the many vitamins and minerals that we need. These include the antioxidants beta-carotene, vitamin C and selenium. Antioxidants help the body to fight against cell damage and premature ageing caused from cigarette smoke, pollution, excessive sunlight, a poor diet and too much alcohol.



- * Vegetables and fruit also provide fibre. This is important for proper bowel function and reducing your risk of developing high cholesterol and certain cancers.

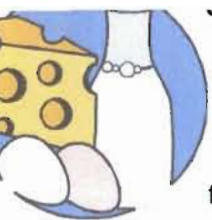
- * You should eat 5 vegetables and/or fruits a day. Try a banana for breakfast, a salad and an apple with your lunch and two vegetables with supper.

- * Vegetables and fruits are best eaten raw or lightly cooked. Peeling, cutting and lengthy cooking destroys some of their nutrients.

Eat dry beans, peas, lentils and soya regularly

- * These foods are excellent sources of protein - needed to build, repair and maintain your body's muscles and tissues. They are also rich sources of carbohydrates and fibre, often low in fats, cholesterol free and generally inexpensive.

- * These foods should be eaten at least once a week. If they are unfamiliar to you and your family, try delicious and novel ways of incorporating them into meals. Try lentil lasagne, dry bean casserole or split pea soup.



Chicken, fish, meat, milk or eggs could be eaten daily

* These foods provide protein and the valuable minerals iron and calcium. They also contain fats and cholesterol.

Iron, obtained mostly from meat products, is an important component of your blood and helps to prevent anaemia, fatigue, poor mental capacity and infections.

Calcium, obtained from dairy products and the edible bones of fish (like pilchards), is vital for strong bones and teeth, and can protect against osteoporosis in later years.

If you are watching your weight or have a history of high cholesterol, it may be better to choose low fat or lean varieties of these foods. Use lean cuts of meat, skinless chicken, and low fat or skimmed dairy products.

If you do not eat meat and dairy products for cost, seasonal or religious reasons, it is still possible to eat a healthy diet. You should include dry beans, split peas, lentils and soya in your diet. It may also be necessary to take calcium, iron and vitamin B12 supplements.

Limit sugar and sugar-containing foods and drinks in moderation

Many people snack on cakes, chocolates, biscuits, crisps and cold drinks. These foods or drinks should not be taken instead of mixed meals, but can be enjoyed in small amounts on special occasions or as a treat after a mixed meal.

To keep teeth and gums healthy, you should also brush your teeth twice a day using fluoride toothpaste.

Eat fats sparingly

* Foods like margarine, butter, oil, salad dressings, mayonnaise, meat pies, doughnuts and fried chips, supply the body with fats.

* Apart from providing energy, fats also contribute vitamins and essential fatty acids to the diet. Fats should therefore not be completely excluded from the diet.

* Fats have the potential to be fattening. They are very concentrated sources of energy and it is easy to overeat on them. The addition of fats to foods encourages us to eat these foods – creamy ice cream, smooth chocolate, crispy fried chicken.

* A diet with too much fat has been linked with obesity, high cholesterol, diabetes and certain cancers. To prevent these diseases, you should eat small amount of fats and high fat foods; steam, bake, casserole or grill (braai) your foods instead of frying; and choose low fat foods where possible.

Use salt sparingly



* A high intake of salt (sodium) has been linked with high blood pressure. High blood pressure damages the blood vessels and increases your risk for heart disease and stroke.

* Salt is commonly used to add flavour to foods. Salt can come in the form of table salt, spices, soup and gravy powders, stock cubes and seasonings. Many people use excessive amounts of these salty flavourings when cooking or eating. To use less salt and keep food tasting great make use of herbs, curry powder, chilli, ginger, garlic, onions, green peppers and tomatoes for flavour.

* Some foods are also rich in salt such as biltong, bacon, snoek, pickled fish, salted nuts, salted popcorn and chips. These foods can still be part of a healthy diet if they are eaten in small amounts and not too often.

Drink lots of clean, safe water

* Water helps with the digestion and absorption of foods as well as the elimination of waste products. Water also prevents dry, flaky skin and wrinkles. Drinking too little water can lead to concentrated urine, reduced perspiration, constipation and oedema.

* Under ordinary circumstances, the average adult needs 2-2½ litres of water a day (about 10 tall glasses); while children need 1-2 litres a day (about 7 tall glasses).



* It is best to drink plain water that is clean and free of germs. Some vegetables and fruits have a high water content, and soups, stews and casseroles will also contribute towards your water intake.

* You will need to drink more water if you have diarrhoea, vomiting, profuse perspiration or haemorrhaging.

* Drink a glass of water after brushing your teeth (morning and evening), with every meal (breakfast, lunch and supper), and after every cup of tea/coffee (morning, afternoon and evening).

If you drink alcohol, drink sensibly

* Alcoholic drinks are not essential, but some people like to have a drink to relax and while enjoying their food.

* Drinking alcohol sensibly means that alcoholic drinks should be drunk in moderate amounts - 1-2 drinks for women and 2-3 drinks for men. 1 drink is a 'dumpy' of beer, a tot of spirits or a small glass of wine.

* Drinking more than the recommended amount can be harmful. It can lead to aggression, drunken driving accidents, liver damage and alcoholism.

* Children, pregnant and breastfeeding women, and people who plan to drive should not drink alcohol

APPENDIX 4**DRAFT COPY OF FBDG-ADAPTED DIET SHEETS****EXAMPLE: HEALTHY EATING FOR PEOPLE WITH DIABETES**

HEALTHY EATING FOR PEOPLE WITH DIABETES

WHAT IS DIABETES?

Diabetes is a condition which develops when the amount of sugar in the blood is not controlled properly.

There are different types of diabetes, which need different treatments. The type and amount of foods you eat and drink is the most important part of controlling your diabetes.

What is “blood glucose”?

“**Blood glucose**” is also called “**blood sugar**”. It comes from the food we eat and is used for energy. Normally, the amount of glucose in the blood is controlled by a hormone called insulin.

About the eating plan.....

ENJOY A VARIETY OF FOODS

The eating plan for people with diabetes is a healthy way of eating which the *whole* family can enjoy. It is very important to have regular meals throughout the day. If you eat a number of different types of food you will be better able to keep your blood glucose within normal levels. There are no food choices which are bad. However, there are unhealthy eating habits such as eating too many high fat foods or skipping meals.

To keep your body healthy you need to eat foods that keep your body strong (protein), give you energy (fat & carbohydrates) and protect you (vitamins & minerals). To keep your diabetes controlled **you need to:**

- **Follow a healthy eating plan**
- **Stay at or reach a healthy weight, which will be determined by your diabetes educator.**

Ten important points to know:

1. Eat regular meals (breakfast, lunch and supper), which contain different kinds of foods. Your eating plan doesn't have to be boring by only including boiled foods – use herbs & spices, try different ways of cooking and different kinds of foods.
2. **Make starchy** foods the basis of your meals.
3. **Eat less fat.**
4. **Eat less salt and salty foods.**
5. **Eat more vegetables& fruit with skin and wholegrain foods.** These foods are a good source of fibre.
6. **Eat dry or tinned beans, peas, lentils and soya (pulses) at least once a week.**
7. **Lean meat, chicken, fish and low fat dairy foods may be eaten every day.**
8. **Be active and stay at or reach a healthy weight.**
9. **Drink as much clean water as you can throughout the day (6-8 glasses).**
10. **If you drink alcohol, drink sensibly.**

The picture below gives you an idea of a HEALTHY EATING PLAN.



MAKE STARCHY FOODS THE BASIS OF YOUR MEALS

Starchy foods are good sources of carbohydrate. Carbohydrate is a nutrient that provides the body with energy in the form of glucose. A person with diabetes therefore needs to be aware of foods that are rich in carbohydrate as these foods will affect their blood glucose levels.

There are two types of carbohydrate:

- Starchy foods
- Sweet foods

Starchy foods

The best starchy foods to choose are those high in fibre as they are digested slowly making it easier for your body to control your blood glucose. Try to choose high fibre foods more often e.g. high bran cereals, porridge, brown or wholegrain bread, rice, dried or baked beans, samp and beans, potatoes, roti made with brown or wholegrain flour,

phutu, lentils, oats and mealie meal, vegetables and fruit with skin.

- Include a starchy food with each meal
- Starches by themselves do not make you gain weight or worsen your diabetes especially those rich in fibre.
- However, be careful of having large amounts of starches in one meal (e.g. potato curry and rice). Your diabetes educator will advise you how best to do this.

Sweet foods

Sweet foods **can** cause blood glucose to rise very quickly. The best food choices of sweetened foods are those which have lots of fibre in them such as bran muffins.

If you are going to eat sweet foods, try to eat them less often and in smaller amounts. Also try to have them with a high fibre meal rather than alone. E.g. plain cake after a meal rather than as a snack between meals.

USE LESS FAT & SALT

Too many high fat foods can result in weight gain and make your diabetes more difficult to control. They can also increase your risk of heart disease. Fats are in your food as:

- **Fats you can see** such as:
Cooking oil, dripping, ghee, butter, margarine, fat on meat, skin on chicken.
- **Fats you cannot see** such as:
Full cream milk/ maas, coffee creamer/ tea whitener, full cream yoghurt, ice-cream, potato crisps), hot chips, pastries (sweet and savoury), chocolate and cream filled biscuits, cakes, chocolate, samoosas, sausage rolls, meat

pies, sweetmeats, bhajias, pies, rich sauces, meat and meat products (wors), sausages, burgers, polony, processed meats, fried foods such as chicken, eggs and fish), salad dressing/ cream and mayonnaise.

Having too much salt in the diet is linked with high blood pressure. Salt is commonly used to add flavour to foods and can come in the form of table salt, soup and gravy powders, stock cubes and seasoning. Many people use too much of these foods when they are cooking.

- To use less salt but still keep a great taste make use of herbs, curry powder, ginger, garlic, onions, peppers and tomatoes.
- Some foods are also high in salt such as biltong, snoek, pickled fish, salted nuts, salted popcorn and chips. These foods can still be part of a healthy diet if they are eaten in small amounts and not too often.

EAT PLENTY OF VEGETABLES AND FRUIT EVERYDAY

- All types of vegetables and fruit are good for you and can be eaten as part of a healthy eating plan (preferably with their skin on).
- Try to *eat* a variety of vegetables and fruit every day.
- 3 pieces of fresh fruit (each the size of a tennis ball) may be eaten as part of main meals and/or snacks. Spread fruit intake throughout the day in different meals/ snacks.
- Frozen vegetables are as good as fresh vegetables.
- Add extra vegetables to recipes such as stews, curries or pasta dishes.
- Cook vegetables in a little water for a short time. Overcooking your vegetables destroys the vitamins.

- Fruit tinned in syrup, dried fruits and dried fruit roll may be eaten in small amounts following or as part of a high fibre meal. E.g. raisin in high fibre cereal
- The motto is to "strive for five" i.e. 3 vegetables and 2 fruits a day. This can be achieved by for example having a banana as a snack, salad and an apple with your lunch and 2 vegetables with your supper.
- You may want to try and grow your own vegetables and fruit.

EAT BEANS, PEAS, LENTILS AND SOYA REGULARLY

- Eat dry or tinned beans, peas, lentils and soya regularly (at least 1 a week). These foods are high in protein and fibre and low in fat.
- Replace or extend meat dishes with beans, peas, lentil and soya.
- Cut down on the cooking time needed for dry beans, lentils and peas by soaking them in water overnight.

MEAT, CHICKEN, FISH OR LOW FAT MILK/ MAAS MAY BE EATEN EVERY DAY

- Lean meat/ skinless chicken/ fresh or tinned fish/ egg (max. 4 per week) or low fat milk/ maas may be eaten every day.
- Cut off **all** the fat you can see on the meat and take the skin **off** the chicken before cooking.
- Eat fish at least once a week, either tinned in tomatoes or water, or fresh/ frozen (plain) fish if available. Try not to have fried fish or fish tinned in oil.
- Use skimmed/ fat free/ diet or low fat milk/ maas or plain/ fruit yoghurt or low fat cheese.

A GUIDE TO HEALTHY SNACKS

It may be important for some people to have a snack at mid-morning and at bedtime. Try to choose a high fibre snack the following are some examples:

The best snack choices are those high in fibre. The following are some examples.

Best snack choices

- A fresh fruit
- A small bowl of wholegrain cereal with low fat milk
- A slice of brown or wholegrain bread with thinly spread peanut butter
- Three (3) high fibre biscuits
- A bran muffin
- A small pot/tub of low fat yoghurt

Not such good choices

- Meat pies, sausage rolls, fried samoosas
- Crisps and chips
- Chocolate/ cream biscuits/ chocolate bars/ ice-cream
- Sponge cake, sweet pastries/ cream cakes/ sweetmeats

WHAT CAN I DRINK?

Hot and cold drinks

- Water is the best drink for health. Don't wait until you are thirsty. Drink at least 6-8 cups of water a day.
- "Diet" or "sugar free" drinks are good choices for the whole family and may be drunk in moderation (up to 500ml/ day).
- Fresh fruit juice and sweetened juice are good when they are diluted with water, (mix ½ juice and ½ water). These juices are otherwise a very concentrated form of sugar.

- Sugar free tea, cocoa and coffee may be whitened with fresh low fat milk or low fat milk powder, as these are a better choice than coffee whiteners.

Alcohol

- If you drink alcohol, do so in moderation i.e. try to have at least 2 days **free of alcohol** per week. If you have been advised not to drink by your doctor then it should be avoided.
- All alcohol is high in energy and some drinks are high in sugar e.g. sweet sherry. Use sugar free or diet mixers with spirits e.g. diet lemonade & whiskey.
- Avoid sweet wine, sweet sherry, liquors, homemade beer
- Alcohol lowers blood glucose, which can become dangerously low. When have alcohol, have it with a meal and your usual snack afterwards. **Never drink on an empty stomach.**

Try not to drink more than the following amounts per day:

- 2 small cans or 1 pint ordinary beer, lager or cider **or**
- 2 glasses of dry wine **or**
- 2 glasses dry sherry **or**
- 2 spirit measures

TIPS FOR HEALTHY COOKING

1. Choose other methods of cooking like baking, steaming, microwaving, grilling, stewing, braising or boiling instead of **frying food.**
2. Use less oil for cooking by measuring out the oil needed for a stew or curry. Use 1 teaspoon of oil per person in the family. E.g. curry/ stew for 6 people will need 6 teaspoons of oil.

- Use tub margarine instead of brick margarine. Spread less margarine on your bread (you should still be able to see the bread).
- When making sandwiches you may use a fat reduced mayonnaise or salad dressing/cream instead of margarine.

TIPS FOR HEALTHY SHOPPING

- Check labels on foods, which say "reduced sugar" or "no added sugar". The words glucose, fructose, sucrose and dextrose all mean sugar. Choose foods where sugar is not listed in the first 3 ingredients.
- Buy skimmed/ fat free/ diet or low fat milk/ maas, fruit & plain yoghurt and low fat cheese as they contain less fat than their full cream versions.
- High fat take-aways or fast food such as deep fried chicken, burgers, chips, and pizza should be eaten less often.

EXERCISE

It is important to do some form of exercise 3-4 times per week for 10-20 minutes. This may take the form of :

- Walking up and down a flight of stairs instead of taking a lift or escalator.
- Walking to the shops instead of taking a car/taxi/bus.
- Getting off a bus/taxi a couple of stops early and walking the rest of the way.
- 50 –100 skips with a skipping rope.

SUGGESTED EATING PLAN

This healthy eating plan should fit in with healthy eating for the whole family.

Breakfast

- High Fibre breakfast cereal or porridge or Brown Bread or toast
Amount: _____
- Margarine or low fat spread
Amount: _____

Lunch

- Phutu or Samp or Roti or Potatoes or Pasta or Rice or Wholegrain bread or mealie meal
Amount: _____
- Lean meat or chicken or fish or egg or cheese or beans/ pulses or maas/ milk
Amount: _____

Vegetables or salad

- Vegetables or salad

Fruit

- Fruit

Amount:

Evening Meal

- Phutu or Samp or Roti or Potatoes or Pasta or Rice or Wholegrain bread or mealie meal
Amount: _____
- Lean meat or chicken or fish or egg or cheese or beans/ pulses or maas/milk
Amount: _____

Vegetables or salad

- Vegetables or salad

Amount:

- Piece of fruit or low fat yoghurt

Amount _____ or _____

- You may use an artificial sweetener to sweeten porridge or drinks. (Try not use more than 6-8 tablets per day)

Milk _____ mls (_____ cups) milk/day

APPENDIX 5**FOOD PHOTOGRAPHS**

- Selected examples

- Alphabetical lists (English and Zulu)

SELECTED EXAMPLES OF FOOD PHOTOGRAPHS

Plate 1 Wild Spinach (“Imifino”)



Plate 2 Bananas

SELECTED EXAMPLES OF FOOD PHOTOGRAPHS

Plate 3 Chicken Heads & Feet



Plate 4 Yellow & Green Mealies (Corn)

1	Amahewu (maize drink) – <i>amahewu</i>
2	Apples – <i>amahabhula</i>
3	Apricots (dried) – <i>ama-aprikoti (omisiwe)</i>
4	Aromat – <i>i-aromati</i>
5	Avocado – <i>ukotapeya</i>
6	Bacon – <i>ubhekeni</i>
7	Baked beans (canned) – <i>ubhontshisi</i>
8	Bananas – <i>ubhanana</i>
9	Beans (dried) – <i>ubhontshisi owomosiwe</i>
10	Beans (green) – <i>ubhontshisi oluhlaza</i>
11	Beetroot (bottled) – <i>ubhuthiluthi (osebhodleleni)</i>
12	Biltong – <i>umqwayibe</i>
13	Biscuits – <i>amabhisikidi</i>
14	Boerewors – <i>isosishi</i>
15	Bread/rolls (brown) – <i>isinkwa/iroli (esinsundu)</i>
16	Bread/rolls (white) – <i>isinkwa/iroli (esimhlophe)</i>
17	Broccoli – <i>u-brokholi</i>
18	Butter – <i>ibhotela</i>
19	Buttermilk – <i>umbhobe/uklibhi</i>
20	Butternut/pumpkin/gem squash – <i>ithanga</i>
21	Cabbage – <i>iklabishi</i>
22	Cake – <i>ikhekhe</i>
23	Carrots – <i>ukheroti/izaqathe</i>
24	Cauliflower – <i>ukholiflawa</i>
25	Cereal (bran flakes) – <i>amasireli (ama-cornflakes)</i>
26	Cereal (puffed wheat) – <i>amasireli (i-puffed wheat)</i>
27	Cheese (cottage) – <i>ushizi omhlophe (i-khontheji)</i>
28	Cheese (spread/wedges) – <i>ushizi (ogcotshwayo ongamaqhezu)</i>
29	Cheese (yellow) – <i>ushizi (ophuzi)</i>
30	Chicken – <i>inyama zenkukhu</i>
31	Chicken feet and heads – <i>amakhanda nezinyawo zenkukhu</i>
32	Chicken livers – <i>izibindi zenkukhu</i>
33	Chillies – <i>upelepele</i>
34	Chocolate – <i>ushokoledi</i>
35	Chops – <i>amaqatha/amashobhu emvu</i>
36	Coffee – <i>ikhofi</i>
37	Commercial beer – <i>ubhiya</i>
38	Condensed milk – <i>ukhondensi</i>
39	Cooldrinks – <i>unemenayidi</i>
40	Cream – <i>ukhilimu</i>
41	Cream crackers – <i>ama-cream crackers</i>
42	Creamer/whitener – <i>i-cremora</i>
43	Crisps – <i>amazambane aklamuzelayo</i>
44	Curry powder – <i>ukhari</i>
45	Custard – <i>ukhastadi</i>
46	Dhall (split peas) – <i>udali</i>
47	Doughnuts – <i>amakhekhe</i>
48	Eggs – <i>amaqanda</i>
49	Fish paste – <i>ufish paste</i>
50	Flour – <i>ufulawa</i>
51	Fruit juice – <i>ijusi</i>
52	Garlic – <i>ugaliki</i>
53	Ginger – <i>ujinja</i>
54	Hake (frozen) – <i>ufishi oluhlaza</i>
55	Honey – <i>uju</i>
56	Ice-cream – <i>u-ayisikhilimu</i>
57	Jam – <i>ujamu</i>
58	Jelly – <i>ujelly</i>
59	Koeksister – <i>ama-koeksister</i>
60	Lentils – <i>ama-lentile (uhlobo lukabhontshisi)</i>
61	Maas/inkomasi – <i>amasi/inkomasi</i>
62	Margarine (brick, tub) – <i>i-majarini</i>
63	Marmite – <i>i-mamathi</i>
64	Mayonnaise – <i>i-mayonesi</i>

65	Mcalie-meal – <i>impuphu</i>
66	Mealie-rice – <i>imililayisi</i>
67	Mealies (green, yellow) – <i>umbila/ifuthu</i>
68	Meat (canned) – <i>inyama esethinini</i>
69	Milk (flavoured) – <i>ubisi (olunongiwe)</i>
70	Milk (fresh) – <i>ubisi</i>
71	Milk (powder) <i>ubisi oluyimpuphu</i>
72	Mince – <i>inyama egayiwe</i>
73	Mixed vegetables (frozen) – <i>amavegi axubile (aku-ayisi)</i>
74	Muesli-type snack bars – <i>ama-snack bar</i>
75	Muffins – <i>amakhekhe</i>
76	Oats – <i>i-oats</i>
77	Oil – <i>uwoyela</i>
78	Onions – <i>u-anyanisi</i>
79	Oranges – <i>amaorintshi</i>
80	Pasta/noodles – <i>i-phasta/ama-noodles</i>
81	Peaches (canned) – <i>amapentsisi asethinini</i>
82	Peanut butter – <i>ibhotela lamantongomane</i>
83	Peanuts – <i>amantongomane/amakinati</i>
84	Peas (frozen) – <i>uphizi (okwi-ayisi)</i>
85	Peppers (green,red,yellow) – <i>uphepha oluhlaza</i>
86	Pies – <i>uphaya</i>
87	Pineapple – <i>uphayinaphu</i>
88	Polony – <i>upholoni</i>
89	Popcorn – <i>ama-popcorn</i>
90	Potatoes – <i>amazambane</i>
91	Provitaa – <i>ama-provitha</i>
92	Raisins – <i>amagulebhisi omisiwe</i>
93	Rice (brown) – <i>ilayisi (elinsundu)</i>
94	Rice (white) – <i>ilayisi (elimhlophe)</i>
95	Roti – <i>uroti</i>
96	Rusks – <i>isinkwa esomisiwe</i>
97	Salad dressing – <i>isinongo samasaladi</i>
98	Salt – <i>usawoti</i>
99	Samoosa – <i>usamusa</i>
100	Samp – <i>isitambu</i>
101	Sev and Nuts – <i>ama-Sev and Nuts</i>
102	Scones – <i>amakhekhe/amakonisi</i>
103	Snoek – <i>ufishi</i>
104	Soup powder – <i>isobho elisephaketheni</i>
105	Soya mince – <i>isoya egayiwe</i>
106	Spices – <i>isinongo/amaspice</i>
107	Spinach – <i>isipinashi</i>
108	Spirits (whisky, cane) – <i>ugologo</i>
109	Stock cubes – <i>ama-stock cubes</i>
110	Sugar (brown) – <i>ushukela onsundu</i>
111	Sugar (white) – <i>ushukela</i>
112	Sweetcorn (canned) – <i>umbila omncane</i>
113	Sweet potatoes – <i>ubhatata</i>
114	Sweets (boiled sweets, wine gums) – <i>amaswidi</i>
115	Syrup – <i>isiraphu</i>
116	Tinned fish (pilchards, tuna) – <i>ufishi osethinini</i>
117	Tomatoes – <i>utamatisi</i>
118	Tea – <i>itye</i>
119	Vetkoek – <i>amagwinya</i>
120	Viennas – <i>amaviyena</i>
121	Water (bottled) – <i>amanzi asebhodleleni</i>
122	Water (plain) – <i>amanzi</i>
123	White cooking fat (Holsum) – <i>amafutha (i-holsum)</i>
124	Wild spinach – <i>imifino</i>
125	Wine – <i>iwayini</i>
126	Yoghurt – <i>iyogathi</i>
127	Yogi-sip – <i>i-yoghisiphu</i>
128	Zulu beer – <i>isizulu</i>

APPENDIX 6**FOCUS GROUP DISCUSSIONS - DOCUMENTATION**

- Study letter

- Schedule form

- Participant sheet

- Topic guide



UNIVERSITY OF NATAL
Pietermaritzburg

Faculty of Science & Agriculture
School of Agricultural Sciences & Agribusiness
Dietetics and Human Nutrition
Private Bag X01 Scottsville 3209
Tel: (0331) 2605428 Fax:(0331) 2606270

June/July 1999

Dear participant

FOOD-BASED DIETARY GUIDELINES STUDY

You have been selected to participate in a research study, conducted by Penny Love, a full-time student at the University of Natal.

The aim of this study is to assess the appropriateness of the Food-Based Dietary Guidelines that have recently been developed for South Africans.

You will be required to participate in a 2-hour group discussion together with other selected participants. Questions asked during this discussion will focus on your ideas and opinions about food and different nutrition messages.

Although the names of participants are known to the researcher, all information relating to this study will be treated with the highest degree of confidentiality. Anonymity can therefore be assured. Results of the study will also be made available upon request.

Your participation in this study will provide valuable information to nutrition educators – helping them to design more appropriate, meaningful nutrition messages.

Thanking you.

Penny Love

(Student Number: 842847144)

FOCUS GROUPS: SCHEDULE FORM

Good morning/afternoon

Can I speak to the lady in the house who makes the food purchasing and preparation decisions?

NOT HOME – When will she be home? *(Complete block at bottom of page).*

We are conducting a survey for the University of Natal about food and nutrition messages.

We would like you to join us in a discussion that will take about 2 hours.

The discussion will be attended by 5 other women, and will be held at.....

We will be able to collect you on the day and bring you back home.

During the discussion we will be asking you about your ideas and opinions about food and different nutrition messages.

All information you give us will be kept anonymous and confidential.

Would you be prepared to take part in this discussion?

NO – Thank you very much for your time. *(Proceed to next door household).*

YES – Thank you very much. Firstly, have you every received any formal training in nutrition (nutrition diploma/degree, nurse, doctor, nutrition advisor, community health worker course)?

YES – Thank you for agreeing to participate in the discussion, but unfortunately we cannot ask people who have had some formal training in nutrition. *(Proceed to next door household).*

NO – Thank you. When would be a convenient time for you to take part in the discussion – *(offer dates and times: 9-11am/2-4pm)*

..... *(Complete section below).*

Participant Code:

Name of participant: _____

No. of House: _____

Street Address: _____

Brief Description to identify house: _____

NOT AT HOME:

When will the lady of the house be home so that I can speak to her?

Date:..... Time:.....

["We are not paying people in cash. Instead, we are giving each participant a food hamper"]

FOCUS GROUPS: PARTICIPANT SHEET

INTERVIEWER CODE:

RECORD SHEET CROSS-CHECKED BY:

DATE OF INTERVIEW:.....

TIME: Start:.....
 End.....
 Total time taken for interview:.....hoursminutes

Participant Details:

Participant Code:

No. of House:..... Street Address:.....

Name of person interviewed:.....

Age: years
(Date of birth:.....)

Nationality (ethnic group):

- | | |
|---------|-----------------------------|
| African | <input type="checkbox"/> 01 |
| Indian | <input type="checkbox"/> 02 |
| White | <input type="checkbox"/> 03 |

Highest educational level achieved:

- | | |
|--|-----------------------------|
| none | <input type="checkbox"/> 04 |
| sub A/grade 1 – std 4/grade 6 | <input type="checkbox"/> 05 |
| std 5/grade7 – incomplete matric | <input type="checkbox"/> 06 |
| matric/grade 12 | <input type="checkbox"/> 07 |
| completed/pursuing post-matric education | <input type="checkbox"/> 08 |

Employment:

- | | |
|--|-----------------------------|
| housewife | <input type="checkbox"/> 09 |
| employed part-time/seasonal/occasional | <input type="checkbox"/> 10 |
| employed full time | <input type="checkbox"/> 11 |

Religion:

– What is your religion?
.....

- Does your religion influence the way you eat?

YES 12

- In what way?.....

NO 13

Cooking Fuel Source:

Electricity 14

Gas 15

Paraffin 16

Wood fire 17

Other (specify)..... 18

Water Source:

Indoor tap 19

Outdoor tap 20

Containerised 21

River/Stream 22

Other (specify)..... 23

FOCUS GROUPS: TOPIC GUIDE

Observer/recorder – to do name tags

Phase 1: OPENING – 5 minutes

- focus group moderator
 - **introduces herself**
 - **thanks participants for coming**

- focus group moderator explains the *general* purpose of the group discussion
This morning/afternoon I would like to speak to you about food. I am going to be asking a few questions and I am interested in your ideas and opinions about these questions. These questions will be about food and different nutrition messages.

- focus group moderator explains the “ground rules”
 - **there are no right or wrong answers**
 - **answers/opinions, whether negative or positive, will in no way affect the moderator, and are therefore welcome**
 - **all answers/opinions will be treated with confidentiality**
 - **participants are to speak one at a time**
 - **participants can disagree with one another, but should let others finish what they are saying – no interrupting**

- focus group moderator explains procedure
I am going to be asking general, broad questions that I’d like you to discuss. As we have a lot to get through, I may change the subject or move ahead, but please feel free to stop me at any time if you want to add something.
I would like to tape record the discussion as this makes it easier for me to remember what everyone has said. Would this be acceptable to everyone here? Please remember that these tapes will be treated with confidentiality and will be erased when we have finished with them. Please do not feel intimidated by the tape recorder. Please speak one at a time so that the tape recorder can pick up everything clearly.
I also have an observer(s) with me this morning/afternoon (introduce this person(s)). She/they will be helping me to take notes during the discussion.
Our discussion will take about 2 hours. After an hour or so, we will have a break for some refreshments, and then continue.

Phase 2: ICE-BREAKER – 5 minutes

- everyone to introduce themselves (moderator to start)
 - use first letter of name to describe self
 - what work do you do
 - how many children do you have

STARTER QUESTION – 5-10 minutes

I would like to start today’s discussion by asking you about yourself:

- **how many people do you prepare/cook food for (children/adults)?**
- **who or what influences/decides what foods you should buy? e.g. mother-in-law, money**
- **who or what influences/decides how you should prepare/cook the food? e.g. children, time**

Phase 3: MAIN DISCUSSION – 5 minutes per question = 5x11 = 55minutes

I am now going to ask you some specific questions about different nutrition messages:

3.1 – “Enjoy a variety of foods” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “enjoy” mean to you?
 - What does the word “variety” mean to you?
 - {*Variety – means eating as many different foods each day as you can afford*}
- Do you and your family enjoy a variety of foods?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
 - (possible reasons – personal preference, cost/affordability, availability, seasonality, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family enjoy a variety of foods?
 - YES
 - NO – Why do you say this? What do you mean by this?
- Do you think it is important to enjoy a variety of foods?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.2 – “Be active!” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “active” mean to you?
 - {*Active – means doing some activity for at least 10mins that makes you puff, pant and sweat*}
- Are you and your family active?
 - YES – What makes you say this?
 - What (physical) activity do you / does your family do?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
 - (possible reasons - personal preference, cost/affordability, facilities, time, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family be active?
 - YES
 - NO – Why do you say this? What do you mean by this?
- Do you think it is important to be active?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.3 – “Make starchy foods the basis of most meals” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What do the words “starchy foods” mean to you?
{*Starchy foods – include foods like potatoes, mealie meal and bread*}
 - What does the word “basis” mean to you?
 - What does the word “meal” mean to you?
- What “starchy foods” do you and your family usually eat? [put up food pictures]
 - Do you have another name for these foods?
- Do you and your family make starchy foods the basis of most meals?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons - personal preference, cost/affordability, availability, seasonality, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family make starchy foods the basis of most meals?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to make starchy foods the basis of most meals?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.4 – “Eat plenty of fruits and vegetables every day” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “plenty” mean to you?
- What “fruits” do you and your family usually eat? [put up food pictures]
 - Do you have another name for these foods?
- What “vegetables” do you and your family usually eat? [put up food pictures]
 - Do you have another name for these foods?
- Do you and your family eat plenty of fruits and vegetables every day?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons - personal preference, cost/affordability, availability, seasonality, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family eat plenty of fruits and vegetables every day?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to eat plenty of fruits and vegetables every day?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.5 – “Eat legumes regularly” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “legumes” mean to you?
{*Legumes – include foods like lentils, dry beans and nuts*}
 - What does the word “regularly” mean to you?
- What “legumes” do you and your family usually eat? [put up food pictures]
 - Do you have another name for these foods?
- Do you and your family eat legumes regularly?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons - personal preference, cost/affordability, availability, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family eat legumes regularly?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to eat legumes regularly?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.6 – “Foods from animals can be eaten every day” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What do the words “foods from animals” mean to you?
{*Foods from animals – include foods like meat, cheese and eggs*}
 - What do the words “can be eaten every day” mean to you?
- What “foods from animals” do you and your family usually eat? [put up food pictures]
 - Do you have another name for these foods?
- Do you and your family eat foods from animals every day?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons - personal preference, cost/affordability, availability, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family eat foods from animals every day?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important that foods from animals can be eaten every day?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

IF PARTICIPANT DOES NOT MENTION DAIRY PRODUCTS AS A FOOD FROM ANIMALS:

3.6 (i) – “Dairy Products”

- Do you think of milk, maas, cheese and yoghurt as “foods from animals”?
[put up flash card]
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- Do you have a name for these foods?
- Do you and your family eat milk, maas, cheese and/or yoghurt everyday?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons – personal preference, cost/affordability, availability, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren't concerned about these, would you and your family eat milk, maas, cheese and/or yoghurt everyday?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to eat milk, maas, cheese and/or yoghurt everyday?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?

3.7 – “Use fat sparingly”

[put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “sparingly” mean to you?
- Of the foods that you and your family usually eat, which ones do you think contain fat?
{Fats – include foods like margarine and oil} [put up food pictures]
- Do you and your family use fat sparingly?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons – personal preference, cost/affordability, availability, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren't concerned about these, would you and your family use fat sparingly?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to use fat sparingly?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.8 – “Use salt sparingly” [put out flash card]

- Have you heard or read this message before?
- What does this message say to you?
- Of the foods that you and your family usually eat, which ones do you think contain salt?
{*Salt-containing foods – include foods like salt and aromatz*} [put up food pictures]
- Do you and your family use salt sparingly?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons – personal preference, cost/affordability, availability, convenience, time, storage/preparation facilities, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren't concerned about these, would you and your family use salt sparingly?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to use salt sparingly?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.9 – “Drink lots of clean, safe water” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “lots” mean to you?
 - What do the words “clean, safe water” mean to you?
- From where do you and your family get your drinking water?
 - Do you consider this water supply to be clean and safe? – Why/why not?
- Do you and your family drink lots of clean, safe water?
 - YES – How do you do this?
 - How many cups/glasses of water to you/family members drink each day?
 - What else do you/family members drink during the day? [put up food pictures]
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons – personal preference, cost/affordability, availability, time, etc)
 - What do you mean by.....(ask for each reason given)
 - If you weren't concerned about these, would you and your family drink lots of clean, safe water?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to drink lots of clean, safe water?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.10 – “If you drink alcohol, drink sensibly” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “alcohol” mean to you?
 - What do the words “drink sensibly” mean to you?
- Do other people living with you drink alcohol?
 - Who?
 - What do you think the words “drink sensibly” would mean to them?
- What do you/other people living with you drink that contains alcohol? [put up food pictures]
- Would you say that you/other people living with you who drink alcohol, drink it sensibly?
 - YES – Why do you say this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons – no money left for food, cause arguments, have accidents, etc)
 - What do you mean by.....(ask for each reason given)
- Do you think it is important that, if you drink alcohol, you should drink sensibly?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

3.11 – “Eat healthier snacks” [put up flash card]

- Have you heard or read this message before?
- What does this message say to you?
 - What does the word “healthier” mean to you?
 - What does the word “snacks” mean to you?
- What “snacks” do you and your family usually eat? [put up food pictures]
- Do you and your family eat healthier snacks?
 - YES – How do you do this?
 - NO – Why do you say this?
 - What are some of your reasons for feeling the way you do?
(possible reasons - personal preference, cost/affordability, availability, convenience, time..)
 - What do you mean by.....(ask for each reason given)
 - If you weren’t concerned about these, would you and your family eat healthier snacks?
 - YES
 - NO – Why do you say this? What to you mean by this?
- Do you think it is important to eat healthier snacks?
 - YES – Why do you say this? What do you mean by this?
 - NO – Why do you say this? What do you mean by this?
- How would you explain this message to your family?

REFRESHMENTS – juice and biscuits – 15 minutes

MAIN DISCUSSION – ACTIVITY – 10-15 minutes**3.12 – “Meal Planning”**

We are now going to use all these foods {food pictures} that you have mentioned during our discussion and all these nutrition messages {flash cards} that we have been discussing, to plan meals for your family for one day.

{moderator to lead discussion towards a day’s meals breakfast, lunch, dinner, in-between snacks}

- How many meals would you plan for your family for the day?
- What foods would you choose for each of these meals?

- *Did you find it easy or difficult to use the nutrition messages to plan meals?*
- *Why do you say this?*

Phase 4: SUMMARY – 10 minutes

(allow participants to alter, clarify, add on to their previous opinions)

THANK-YOU – 5 minutes

- give out food hampers

- TRANSPORT PARTICIPANTS BACK HOME

APPENDIX 7**INDIVIDUAL INTERVIEWS - DOCUMENTATION**

- Study letter

- Schedule form

- Participant sheet

- Questionnaire

Faculty of Science & Agriculture
School of Agricultural Sciences & Agribusiness
Dietetics and Human Nutrition
Private Bag X01 Scottsville 3209
Tel: (0331) 2605428 Fax:(0331) 2606270

March 2000

Dear participant

FOOD-BASED DIETARY GUIDELINES STUDY

You have been selected to participate in a research study, conducted by Penny Love, a full-time student at the University of Natal.

The aim of this study is to assess the appropriateness of the Food-Based Dietary Guidelines that have recently been developed for South Africans.

You will be required to participate in a 2-hour interview. Questions asked during this interview will focus on your ideas and opinions about food and different nutrition messages.

Although the names of participants are known to the researcher, all information relating to this study will be treated with the highest degree of confidentiality. Anonymity can therefore be assured. Results of the study will also be made available upon request.

Your participation in this study will provide valuable information to nutrition educators – helping them to design more appropriate, meaningful nutrition messages.

Thanking you.

Penny Love

(Student Number: 842847144)

INTERVIEWS: SCHEDULE FORM

Good morning/afternoon

Can I speak to the lady in the house who makes the food purchasing and preparation decisions?

NOT HOME – When will she be home? *(Complete section below).*

We are conducting a survey for the University of Natal about food and nutrition messages.

This survey takes about 2 hours to complete.

During the survey we will show you pictures of foods and ask you questions about these foods.

All information is kept anonymous and confidential.

Would you be prepared to be interviewed for this survey?

NO – Thank you very much for your time. *(Proceed to next door household).*

YES – Thank you very much. Firstly, have you every received any formal training in nutrition (nutrition diploma/degree, nurse, doctor, nutrition advisor, community health worker course)?

YES – Thank you for agreeing to participate in the survey, but unfortunately we cannot ask people who have had some formal training in nutrition. *(Proceed to next door household).*

NO – Thank you. Would it be convenient for you to do the survey now? We will need about 2 hours to meet with you.

YES – *(Conduct interview).*

NO - Can we set up a day and time when it will be convenient for us to meet with you for the survey? *(Complete section below).*

Participant Code:

□□□□□□□□□□

Name of person to be interviewed: _____

No. of House: _____

Street Address: _____

Brief description to identify house: _____

Date for interview:.....

Time for interview:.....

NOT AT HOME:

When will the lady of the house be home so that I can speak to her?

Date:..... Time:.....

["We are not paying people in cash. Instead, we are giving each participant a food hamper"]

INTERVIEWS: PARTICIPANT SHEET

INTERVIEWER CODE:

RECORD SHEET CROSS-CHECKED BY:

DATE OF INTERVIEW:.....

TIME: Start:.....
End:.....
Total time taken for interview:.....hoursminutes

Participant Details:

Participant Code:

No. of House:..... Street Address:.....:

Name of person interviewed:.....

Age: years
(Date of birth:.....)

Nationality (ethnic group):

African 01
Indian 02
White 03

Highest educational level achieved:

none 04
sub A/grade 1 – std 4/grade 6 05
std 5/grade7 – incomplete matric 06
matric/grade 12 07
completed/pursuing post-matric education 08

Employment:

housewife 09
employed part-time/seasonal/occasional 10
employed full time 11

Religion:

– What is your religion?
.....

- Does your religion influence the way you eat?

YES 12

- In what way?.....

NO 13

Cooking Fuel Source:

Electricity 14

Gas 15

Paraffin 16

Wood fire 17

Other (specify)..... 18

Water Source:

Indoor tap 19

Outdoor tap 20

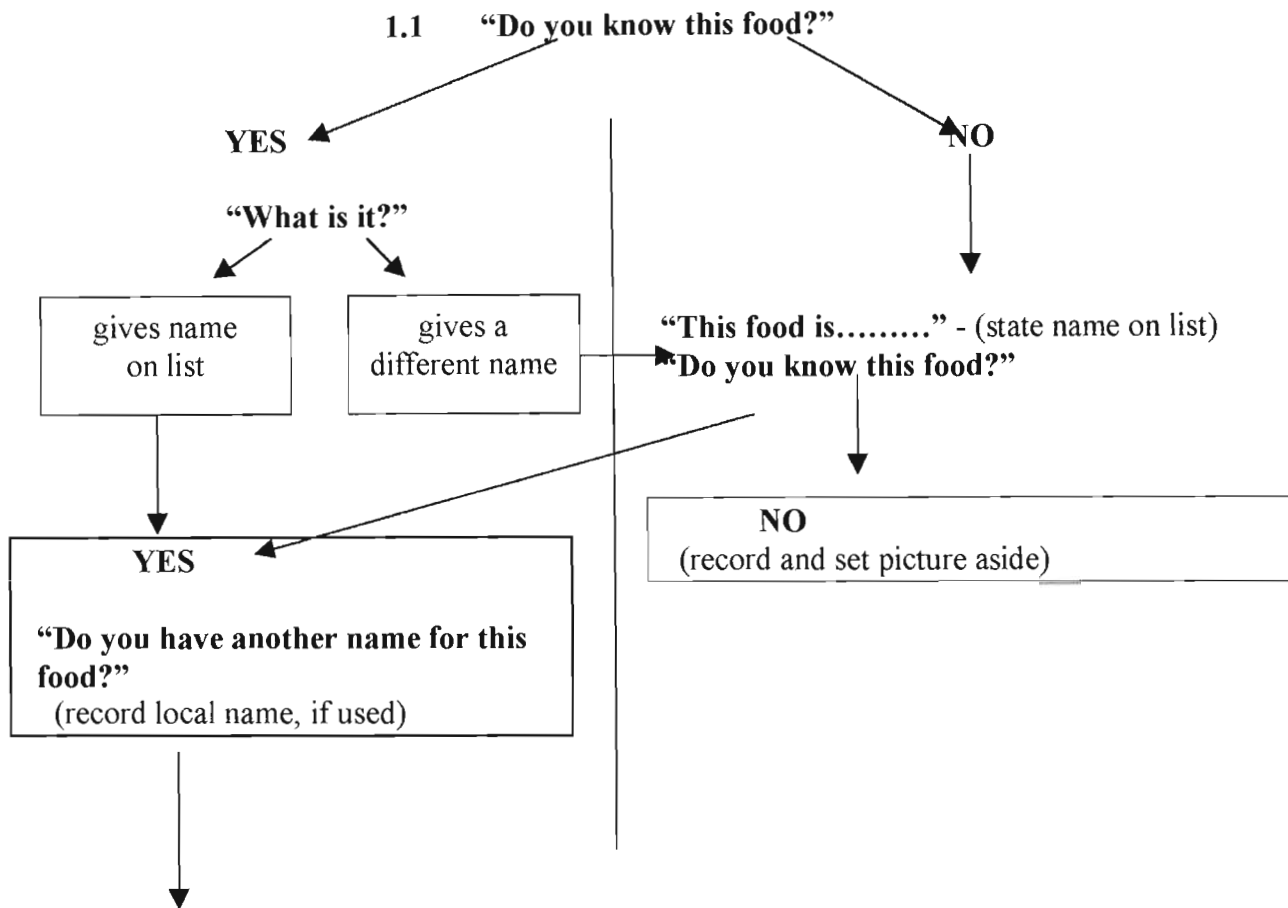
Containerised 21

River/Stream 22

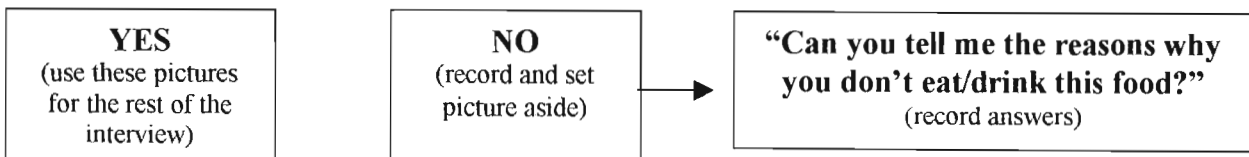
Other (specify)..... 23

INTERVIEWS: QUESTIONNAIRE

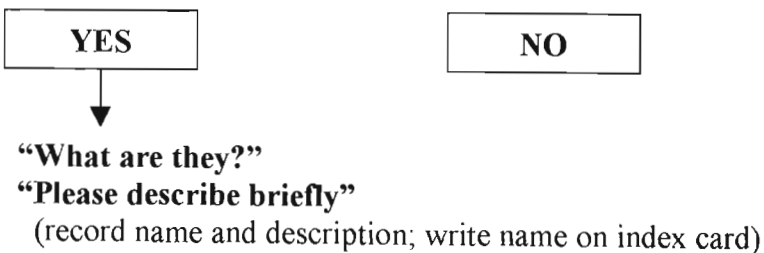
1. SHOW PARTICIPANT ONE FOOD PICTURE AT A TIME. REPEAT Q1.1 AND Q1.2 FOR EACH FOOD PICTURE.



1.2 "When this food is available to you, would you say that you and your family eat/drink this food at least once a week?"



1.3 "Are there any other foods or drinks that you and your family have at least once a week, that have not been mentioned?"



2. USE FOOD PICTURES IDENTIFIED AS EATEN AND INDEX CARDS.

2.1 “What do you understand by the word ‘similar’?”

- record answer

[Explanation – “Similar foods include foods that are almost the same.”]

2.2(a) “Sort these foods into piles by putting similar foods together.”

- wait for participant to sort all food pictures before recording

- for each pile record

- the number on the picture

- the name on the index card

2.2(b) “Are there any foods that you wish to place in more than one pile?”

If YES “What are they?” [let participant select food picture(s)/index card(s)]

 “Where would you place them?” [record number on picture/name on index card]

<p>REPEAT Q2.3 AND Q2.4 FOR EACH PILE.</p>

<p>2.3 “Why have you sorted these foods into this pile?” (record)</p>
--

<p>2.4 “What name would you give to this pile?” (record)</p>

2.5 “Are there other ways that you would sort these foods?”

If YES -“Please explain these.” (record answer)

3. USE FOOD PICTURES IDENTIFIED AS EATEN AND INDEX CARDS.**3.1a “What do you understand by the term ‘starchy foods’?”**

- record answer

- [Explanation – “Starchy foods include foods like bread and mealie-rice.”]

3.1b “Select those foods that you believe are starchy foods.”

- tick food pictures/index cards selected

3.1c “Do you think a person should eat starchy foods?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat starchy foods?”

(record answers)

NO

- Why do you say this?

(record answers)

3.1d “Do you have another name for these foods besides “starchy foods?”

YES

(record answers)

NO

3.2a “What do you understand by the word ‘fruits’?”

- record answer

- [Explanation – “Fruits include foods like apples and pineapple.”]

3.2b “Select those foods that you believe are fruits.”

- tick food pictures/index cards selected

3.2c “Do you think a person should eat fruits?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat fruits?”

(record answers)

NO

- Why do you say this?

(record answers)

3.2d “Do you have another name for these foods besides “fruits?”

YES

(record answers)

NO

3.3a “What do you understand by the word ‘vegetables’?”

- record answer

- [Explanation – “Vegetables include foods like tomatoes and broccoli.”]

3.3b “Select those foods that you believe are vegetables.”

- tick food pictures/index cards selected

3.3c “Do you think a person should eat vegetables?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat vegetables?”

(record answers)

NO

- Why do you say this?

(record answers)

3.3d “Do you have another name for these foods besides “vegetables?”

YES

(record answers)

NO

3.4a “What do you understand by the word ‘legumes’?”

- record answer

- [Explanation - “Legumes include foods like dry beans and lentils.”]

3.4b “Select those foods that you believe are legumes.”

- tick food pictures/index cards selected

3.4c “Do you think a person should eat legumes?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat legumes?”

(record answers)

NO

- Why do you say this?

(record answers)

3.4d “Do you have another name for these foods besides “legumes?”

YES

(record answers)

NO

3.5a “What do you understand by the term ‘foods from animals’?”

- record answer

- [Explanation - “Foods from animals include foods like mince and cheese.”]

3.5b “Select those foods that you believe are foods from animals.”

- tick food pictures/index cards selected

3.5c “Do you think a person should eat foods from animals?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat foods from animals?”

(record answers)

NO

- Why do you say this?

(record answers)

3.5d “Do you have another name for these foods besides “foods from animals?”

YES

(record answers)

NO

3.5e “Are you happy having dairy products (milk, cheese) in the same group as meat and chicken?”

YES

NO

- Why do you say this?

(record answers)

3.6a “What do you understand by the term ‘fatty foods’?”

- record answer

- [Explanation - “Fatty foods include foods that contain fats - like oil and vetkoek.”]

3.6b “Select those foods that you believe contain fats.”

- tick food pictures/index cards selected

3.6c “Do you think a person should eat fatty foods?”

YES

- Why do you say this?

(record answers)

- How often do you think a person should eat fatty foods?”

(record answers)

NO

- Why do you say this?

(record answers)

3.6d “Do you have another name for these foods besides “fatty foods?”

YES

(record answers)

NO

3.7a “What do you understand by the term ‘salty foods?’”

- record answer

- [Explanation - “Salty foods include foods that contain salt like aromat and crisps.”]

3.7b “Select those foods that you believe contain salt.”

- tick food pictures/index cards selected

3.7c “Do you think a person should eat salty foods?”

YES - Why do you say this? (record answers)

- How often do you think a person should eat salty foods?” (record answers)

NO - Why do you say this? (record answers)

3.7d “Do you have another name for these foods besides “salty foods?”

YES (record answers)

NO

3.8a “What do you understand by the term ‘snack foods?’”

- record answer

- [Explanation - “Snack foods are eaten instead of or in-between main meals.”]

3.8b “Select those foods that you believe are snack foods.”

- tick food pictures/index cards selected

3.8c “Do you think a person should eat snack foods?”

YES - Why do you say this? (record answers)

- How often do you think a person should eat snack foods?” (record answers)

NO - Why do you say this? (record answers)

3.8d “Do you have another name for these foods besides “snack foods?”

YES (record answers)

NO

PUT ALL FOOD PICTURES BACK IN RANDOM ORDER**3.9a “Do you think of water as a food?”**

YES - Why do you say this? (record answers)

NO - Why do you say this? (record answers)

3.9b “Do you think a person should drink water?”

YES - Why do you say this? (record answers)

- How often do you think a person should drink water?” (record answers)

NO - Why do you say this? (record answers)

3.10a “Do you think of alcohol (beer, wine, spirits) as a food?”

YES - Why do you say this? (record answers)

NO - Why do you say this? (record answers)

3.10b “Do you think a person should drink alcohol?”

YES - Why do you say this? (record answers)

- How often do you think a person should drink alcohol? (record answers)

NO - Why do you say this? (record answers)

3.11a “What do you understand by the word ‘variety’?”

- record answer

[Explanation - “Variety means eating as many different foods as you can afford.”]

3.11b “Do you think you ate a variety of foods last week?”

YES - Why do you say this? (record answers)

NO - Why do you say this? (record answers)

- What would you do to change this? (record answers)

3.11c “Do you think a person should eat a variety of foods?”

YES - Why do you say this? (record answers)

NO - Why do you say this? (record answers)

4. SHOW PARTICIPANT ONE FOOD GUIDE PICTURE AT A TIME.**4.1a “Have you seen or heard of the 3 food groups?”**

- show picture

YES

4.1b Where did you see it?

(record answer)

4.1c Who told you about it?

(record answer)

4.1d Have you ever used it to plan meals for you or your family?

YES – How?

(record answer)

NO – Why not?

(record answer)

NO

4.2a “Have you seen or heard of the 5 food groups?”

- show picture

YES

4.2b Where did you see it?

(record answer)

4.2c Who told you about it?

(record answer)

4.2d Have you ever used it to plan meals for you or your family?

YES – How?

(record answer)

NO – Why not?

(record answer)

NO

4.3a “Have you seen or heard of the food pyramid?”

- show picture

YES

4.3b Where did you see it?

(record answer)

4.3c Who told you about it?

(record answer)

4.3d Have you ever used it to plan meals for you or your family?

YES – How?

(record answer)

NO – Why not?

(record answer)

NO

4.4a “Have you seen or heard of the food square?”

- show picture

YES

4.4b Where did you see it?

(record answer)

4.4c Who told you about it?

(record answer)

4.4d Have you ever used it to plan meals for you or your family?

YES – How?

(record answer)

NO – Why not?

(record answer)

NO

4.5a “Have you seen or heard of the mixed meal guide?”

- show picture

YES

4.5b Where did you see it?

(record answer)

4.5c Who told you about it?

(record answer)

4.5d Have you ever used it to plan meals for you or your family?

YES – How?

(record answer)

NO – Why not?

(record answer)

NO

APPENDIX 8**FOOD GUIDE ILLUSTRATIONS USED DURING INDIVIDUAL INTERVIEWS**

(original sizes of food guides – A4)

Plate 1 Three Food Group Guide

Plate 2 Five Food Group Guide

Plate 3 Food Guide Pyramid

Plate 4 Food Square

Plate 5 Mixed Meal Guide

THE 3 BASIC FOOD GROUPS

SPONSORED BY BAMA MARGARINE
IN THE INTERESTS OF BETTER NUTRITION.

SCHOOL: _____
CLASS: _____

1
BODY BUILDING FOODS

This column illustrates various protein-rich foods. At the top are several slices of meat. Below them is a whole roasted chicken. A large fish is shown on the left side. To its right are a wedge of Swiss cheese and two sausages. Further down is a carton of 'SOYA' milk and a small pile of nuts. At the bottom is a bowl of 'eggs' with one egg placed next to it.

2
ENERGY FOODS

This column illustrates carbohydrate and fat sources. It starts with two ears of corn. Below them is a loaf of bread and a slice of bread. To the right of the bread are stalks of wheat. In the center is a bowl of soup with a spoon. At the bottom left is a bottle of 'OIL' with a floral label. To its right are two boxes of margarine, one labeled 'Holsum' and the other 'SABP'.

3
PROTECTIVE FOODS

This column illustrates fruits and vegetables. It begins with a whole pumpkin and a slice of watermelon. Below these are a tomato, a slice of apple, and some green peas. Further down are two apples and two green beans. At the bottom left are two bananas, and at the bottom right is a papaya cut in half and a head of lettuce.

Plate 1 Three Food Group Guide

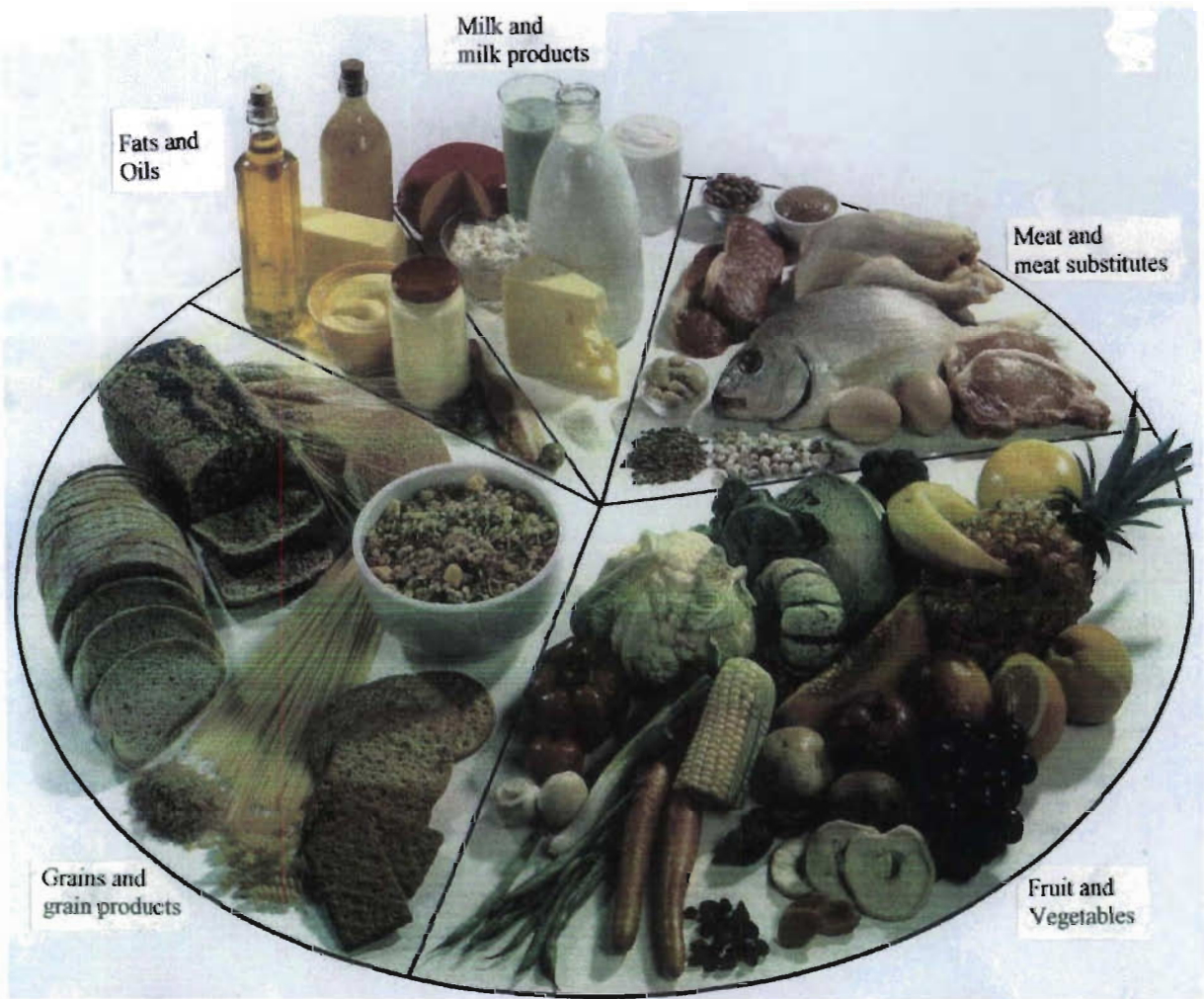


Plate 2 Five Food Group Guide

The Food Guide Pyramid

A Guide to Daily Food Choices

Fats, Oils, & Sweets
USE SPARINGLY

Milk, Yogurt, & Cheese Group
2-3 SERVINGS

Vegetable Group
3-5 SERVINGS

Bread, Cereal, Rice, & Pasta Group
6-11 SERVINGS

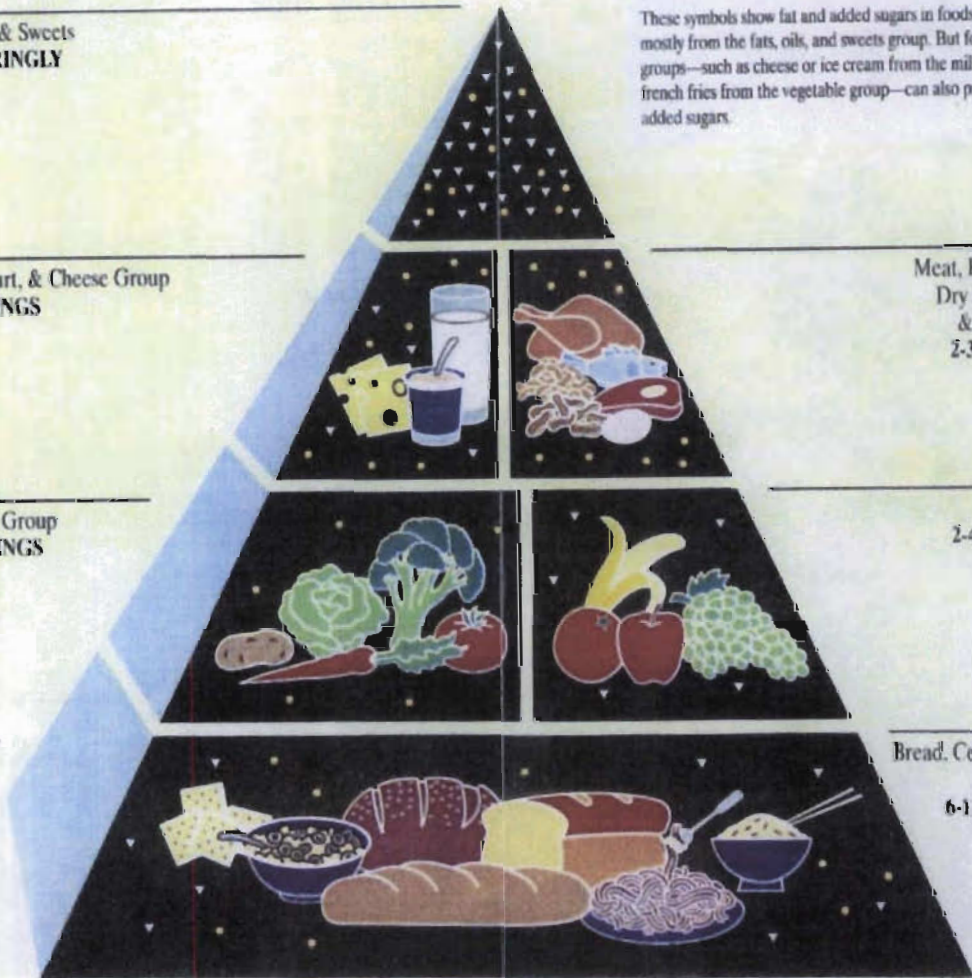
Meat, Poultry, Fish,
Dry Beans, Eggs,
& Nuts Group
2-3 SERVINGS

Fruit Group
2-4 SERVINGS

Key

- ◻ Fat (naturally occurring and added)
- ◻ Sugars (added)

These symbols show fat and added sugars in foods. They come mostly from the fats, oils, and sweets group. But foods in other groups—such as cheese or ice cream from the milk group or french fries from the vegetable group—can also provide fat and added sugars.



Looking at the Pieces of the Pyramid

The Food Guide Pyramid emphasizes foods from the five major food groups shown in the three lower sections of the Pyramid. Each of these food groups provides some, but not all, of the nutrients you need. Foods in one group can't replace those in another. No one of these major food groups is more important than another—for good health, you need them all.

Plate 3 Food Guide Pyramid

Food square

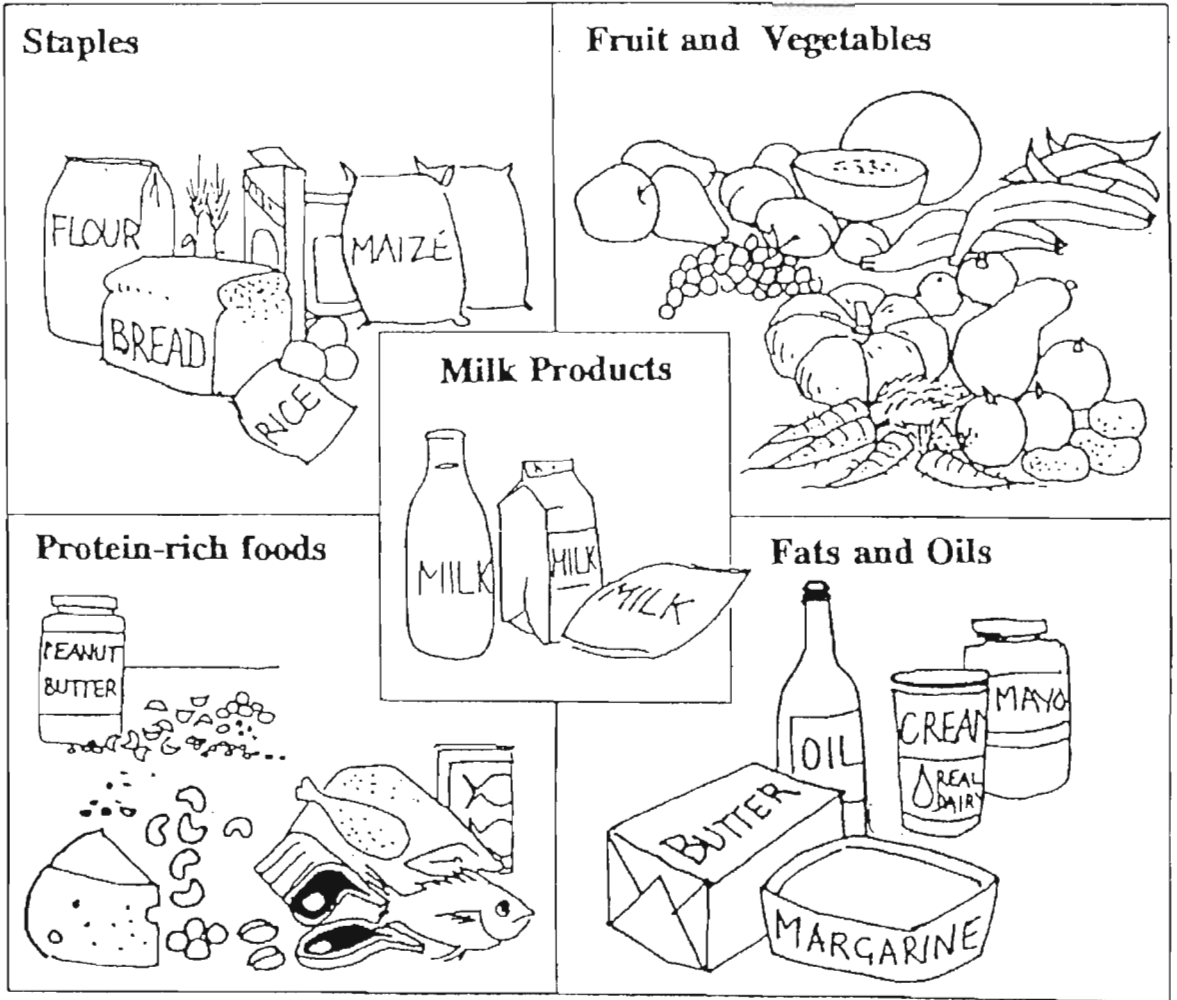


Plate 4 Food Square

Main Foods and Helper Foods
- A Mixed Meal Guide

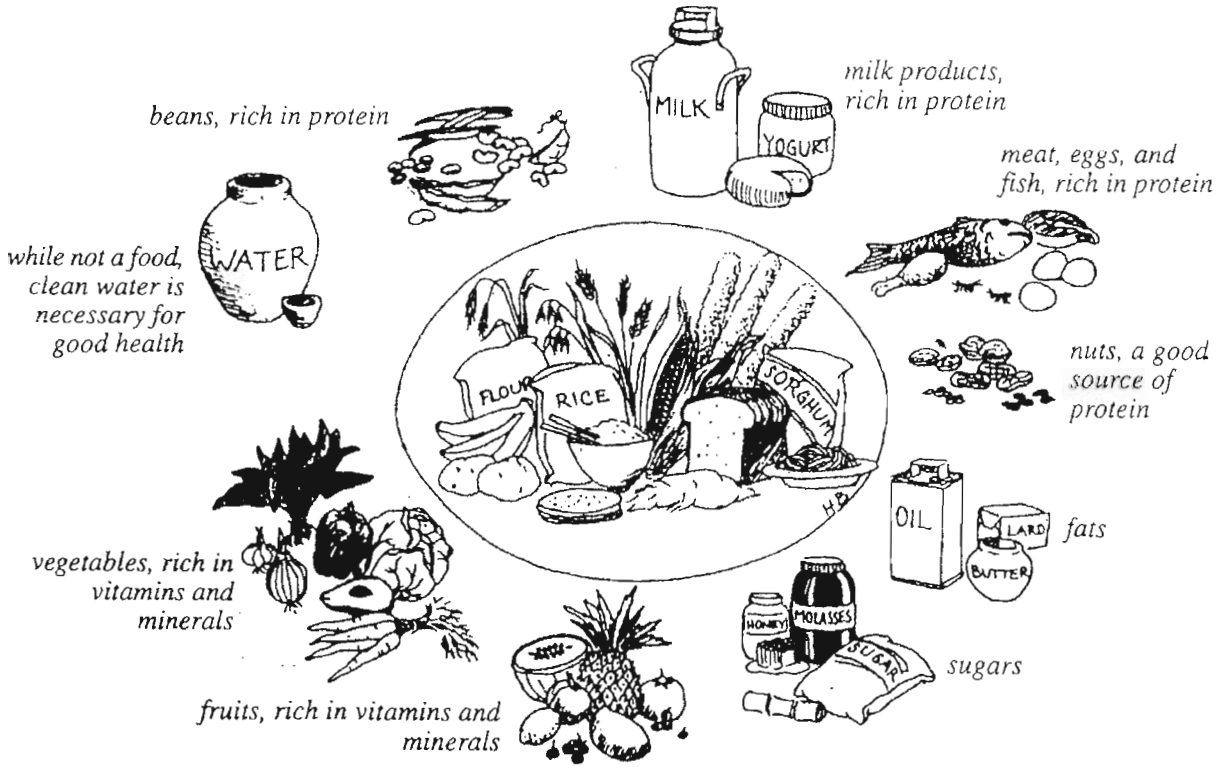


Plate 5 Mixed Meal Guide

APPENDIX 9

MEAL PLANS COMPILED BY FOCUS GROUP PARTICIPANTS

MEAL EXAMPLES SUGGESTED BY RURAL BLACK FOCUS GROUPS:

Breakfast:

Tea, brown bread, margarine, milk, porridge, left over meat dish or relish
Tea, coffee, porridge, bread, eggs, polony, salt, milk, Holsum

Lunch:

Tinned fish with potatoes and cabbage
Samp and beans with tomatoes

Dinner:

Phutu (maize meal), cabbage, tomato and onion relish, tripe, salt, curry powder, chillies
Phutu (maize meal), beef, pumpkin, peas

Snack (eaten on occasion):

Sweets; fruit (banana, apples, oranges, pears); cool drink; amahewu; juice; biscuits

MEAL EXAMPLES SUGGESTED BY URBAN INFORMAL BLACK FOCUS GROUPS:

Breakfast:

Porridge, milk, bread, margarine, fried eggs (cooking oil), tomato, salt, tea, coffee, sugar

Lunch:

Phutu (maize meal) with cabbage or imifino (spinach), onion, tomato, chillies
Rice, chicken curry, mixed vegetables, butternut, beetroot

Dinner:

Beef, boiled potato, carrots, butternut, green pepper, stock cubes
Samp, beans, Holsum, stock cubes, tea, milk, amahewu
Chicken, maize rice, cabbage, oil, curry powder, salt

Snacks:

A sandwich (egg, jam, peanut butter); juice, piece of fruit (apple, banana, peach, orange); maas; cool drink; chips; biscuits

MEAL EXAMPLES SUGGESTED BY URBAN FORMAL BLACK FOCUS GROUPS:

Breakfast:

Soft porridge, brown bread, margarine, polony/eggs/cheese, milk, tea, coffee

Lunch:

Rice/samp, bean stew, juice
Phutu (maize meal), cabbage, onion, oil, salt

Supper:

Boerewors, phutu (maize meal), imifino (spinach), spices
 Maas, phutu (maize meal), orange
 Beef, rice, cabbage, Aromat
 Chicken, green beans, potato

Snacks:

Banana; cakc; cool drink; popcorn

MEAL EXAMPLES SUGGESTED BY URBAN FORMAL INDIAN FOCUS GROUPS:Breakfast:

Bread/toast, margarine, jam, cereal (All Bran flakes)/porridge (maize meal, oats), sugar, milk, tea/coffee
 Toast/bread, eggs/cheese/left-over curry, tomatoes, fruit juice, banana

Lunch:

Roti/potatoes, sugar bean/green bean curry, salad
 Tinned fish/baked beans, bread, tomatoes
 Egg sandwich, chutney, cool drink
 Left-over curry (meat, vegetables, potatoes, oil, masala, salt), tomatoes, water

Supper:

Mutton/dhal curry, rice/roti, salads (tomato and onion), carrots, orange
 Chicken curry/breyani (lentils), green beans

Snacks:

Peanut butter and jam sandwich, tea/coffee; cool drink; nuts; chips; biscuits

MEAL EXAMPLES SUGGESTED BY URBAN FORMAL WHITE FOCUS GROUPS:Breakfast:

Week days – Oats or cereal (cornflakes), toast, margarine, honey, Bovril, milk, sugar, yoghurt, fruit/fruit juice
 Weekends - fried eggs, bacon, toast

Lunch:

Week days – Bread/rolls, cold meat/cheese/tuna/egg, cucumber, lettuce, tomato, gherkins, salad, margarine, mayonnaise, fruit juice, banana
 Weekends – meat, potato salad, green salads, alcohol

Supper:

Rice/pasta/potato, meat, vegetables
 Chicken, roast potato, mixed vegetables, gravy
 Mutton stew, carrots, peas, potatoes, onion
 Spinach and cheese pie, salad, wine, ice cream

Snacks:

Apple; cool drink