AN EVALUATION OF THE PROMOTIONAL FACTORS INFLUENCING GENERAL PRACTITIONERS' PRESCRIBING BEHAVIOUR, PRIMARILY THE PHARMACEUTICAL REPRESENTATIVE

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A research report submitted to the School of Business, University of Natal, Pietermaritzburg, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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DECLARATION

I declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the University of Natal, Pietermaritzburg. It has not been submitted before for any other degree or examination at any other university.

Paresh Kumar V. Patel

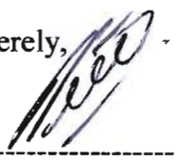
9th September 2003.

CONFIDENTIALITY CLAUSE

To whom it may concern

Due to the sensitive nature and strategic importance of this research, it will be appreciated if the contents of the research remain confidential and not be circulated for a period of 3 years.

Sincerely,



Paresh Kumar V. Patel

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ABSTRACT

Generally the pharmaceutical industry operates in a heavily regulated and controlled environment. In South Africa, the regulations governing *prescription drugs* do not allow the pharmaceutical companies to advertise the prescription drugs directly to the consumers. As a consequence, the greater part of the marketing efforts of the pharmaceutical companies is directed at the medical practitioners, who occupy the crucial decision-making position for the prescription drugs.

The study broadly investigates the relative influence of the various promotional factors that may influence the General Practitioner's choice of prescription drug and more specifically, focuses on the characteristics of the pharmaceutical sales representatives that may influence the prescribing behaviour of the General Practitioners.

An area sample of 67 general practitioners in Pietermaritzburg, South Africa, was carried out. A total of 58 responses were analysed to determine the perceived influence of various factors on the GPs' choice of new and existing prescription drugs. A specific attempt was made to determine the key influential factors with respect to the promotion by the pharmaceutical representatives and GPs' appreciation of basic statistics used in the presentations by the pharmaceutical representatives.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: INTRODUCTION

" The best advertised drugs are the ones that sell, not the best drug"
Clara MacKay (Thomson, 2001).

1.1 BACKGROUND

Today marketing permeates virtually all activities related to the sale of products, might it be physical goods and/or services. Marketing has an influence on almost all, if not all, of the goods and services purchased by us. However, the marketing of pharmaceutical drugs has atypical aspects that differentiate them from the marketing of the usual general goods. The noticeable differences are the extremely regulated and controlled environment of the pharmaceutical industry and the crucial decision-making position of the medical practitioners for the consumers (*the patients*) of the pharmaceutical drugs. The regulations governing prescription drugs do not allow the pharmaceutical companies to advertise the prescription drugs directly to the consumers. Generally they are available to the consumers only from the pharmacists once authorised by a doctor's prescription. Although the patients essentially use and may or may not pay for the prescription pharmaceutical drugs, they have minor, if any influence in the choice of the drug prescribed by the doctor. In many cases a third party, such as healthcare funders (medical aid societies in South Africa), rather than the patients (consumers) themselves that carry out the payment of these prescription drugs.

Pharmaceutical drugs are classified as either *ethical* or *generic*. *Ethical drugs* are drugs produced under patent for a specific purpose by the company who holds the rights to the patent. *Generic drugs* are drugs whose patents have expired and which can be produced by many manufacturers. Both categories of drugs, depending upon their registered "*schedule*" with the relevant governing institution, can also be known as Prescription only Medicines. *Over-the-counter* (OTC) medicines are drugs that are considered safe (by the relevant regulatory bodies) for self-medication by the lay public, i.e. they do not require a prescription from a doctor.

The pharmaceutical drugs can also be classified as *scheduled* or *non-scheduled* drugs. In South Africa, there are now eight schedules (categories) of drugs. Different schedules have varying restrictions attached to them. Generally, drugs that fall into schedule three and higher require a doctor's prescription. The pharmacist, without a prescription, can dispense schedule

two drugs. Schedule one and the non-schedule drugs are available as self-medication. The different schedules also have various advertising restrictions associated with them.

As a consequence of the regulations governing the prescription drugs and the severe restrictions on direct-to-consumer advertising of prescription drugs, the greater part of the marketing efforts of the pharmaceutical companies is directed at the medical practitioners. "Acceptance of a scheduled pharmaceutical product by doctors is a *sine qua non* for its success" (Pitt and Nel, 1988: 8).

IMS Health is an organisation that tracks the actual sales of approximately 90% of all pharmaceutical drugs in more than seventy countries. (IMS Health, paragraph 2). The global audited sale of pharmaceutical drugs, as reported in the IMS Health World Review for 2002, was $400.6 billion (IMS Health, paragraph 1). According to the Pharmaceutical Manufacturers' Association (PMA) Draft Annual Report: May 2002 – March 2003, the South African pharmaceutical industry's gross output for 2001, was R6.23 billion. According to the same report, the pharmaceutical industry's share of South Africa's Gross Domestic Product (GDP), in 2001, was 0.6%. As a comparison, in 2000, the National Association of Pharmaceutical Manufacturers (NAPM) in South Africa approximated the total pharmaceutical revenues of prescription drugs to be R4, 172 billion. The ethical drugs formed 84% (R3, 958bn) of this total value. NAPM estimates the value of the pharmaceutical industry at over R10 billion, with over 80% of revenues coming from the private sector (NAPM- Fast Facts, paragraph 1).

The majority of the pharmaceutical companies operate both, in the private and public health sectors in South Africa. There is a vast difference in the cost of prescription drugs to the private and public health sectors in South Africa. The public health sector (government-managed institutions), work on the basis of submission of tenders by the pharmaceutical companies, for their purchase of pharmaceutical drugs. The various pharmaceutical companies submit tenders to the government health department, and the government generally obtain an extremely low cost price for a significantly large volume of prescription drugs. The benefit to the pharmaceutical companies is an increase in the brand awareness and prescriber experience especially amongst the newly qualified or junior doctors working at the government institutions. Many of these young doctors may enter the private sector in the future and would hopefully continue to prescribe the drugs that they are familiar with. The

greater the number of doctors prescribing a particular prescription drug in the private sector and greater the repeat prescription by the doctors, the greater the return on investment for the relevant pharmaceutical company.

The pharmaceutical companies derive substantial profits from the private sector. Public healthcare, whilst accounting for most of the demand for the pharmaceuticals with minimal contribution to the pharmaceutical sector's value, is largely funded by the means of tax (NAPM-Overview, paragraph 2). Gunning (1988:51) found that "70 percent of medicine went to government but it only accounted for 30 percent of the income of the industry." As a result, it is a commonly held belief amongst the private medical practitioners in South Africa that the private sector makes it possible for the government hospitals to enjoy the supply of prescription drugs at an immense discount.

It is not easy to obtain the exact data of the promotional spending by the pharmaceutical companies due to the confidential nature of such information in the highly competitive industry. According to Maureen Kirkman of PMA (SA), the research and development to bring a pharmaceutical drug onto the market in the US is about R6- billion (Keeton, 2003:5). It is also estimated that the pharmaceutical companies spend about twice as much on promoting and marketing their drugs as on researching them. (Salleh, 2002). The bulk of this promotional spending is on the prescription drugs. This involves both subtle and not so subtle persuasion of health care professionals. The health care professionals are the decision makers for the consumers of the prescription pharmaceutical drugs, i.e. the medical practitioners are the sole decision makers as to which prescription drugs the consumers (patients) receive. According to IMS Health data for 2001, the pharmaceutical companies spent $16.4 billion on promotional activities targeted to reach and influence the medical practitioners (IMS Health, 2002, paragraph 5). Obviously, the promotional efforts of the pharmaceutical companies must be having more than a little influence on the prescribing behaviour of the medical practitioners, in order to justify such a considerable expense.

Some popular promotional tools used by the pharmaceutical companies to influence the prescribing behaviour of the doctors are:

- Pharmaceutical sales representative ('*sales reps*') calling on the medical practitioners (missionary selling);
- Advertising in medical print media such as the medical journals and news letters;

- Sponsorship of medical lectures, seminars, and continuing professional development (CPD)/continuing medical education (CME) activities;
- Sales promotional materials such as drug sampling, product related give-aways/gifts such as pens bearing brand/corporate names;
- Direct mail advertising to health care professionals; and
- Direct-to-consumer advertising.

1.2 REASONS FOR UNDERTAKING THIS SURVEY

The purpose of this study is to expand the existing understanding of the impact of the pharmaceutical companies' promotional activities on general practitioners' (GPs') prescribing behaviour. The study broadly investigates the relative influence of the various factors that may influence the GP's choice of prescription drug and more specifically, focuses on the characteristics of the pharmaceutical sales representatives that may influence the prescribing behaviour of the GPs in Pietermaritzburg.

Compared to other industries, there are very few preceding studies into the impact and effectiveness of pharmaceutical promotional activities. Pitt and Nel (1988) surveyed 210 general practitioners to ascertain their perceptions of the influence of pharmaceutical promotional activities/tools on their prescribing behaviour. They found that, "of promotional tools, sales calls by pharmaceutical firms' sales representatives are perceived to be the most influential" (Pitt and Nel, 1988: 7-14).

The knowledge and understanding of the various factors of this specific promotional activity is very useful to the pharmaceutical companies in planning their promotional undertaking more effectively. Personal selling is generally a far more expensive type of promotional activity compared to the other types. "Because personal selling is often a company's single largest operating expense, it's important to understand the decisions in this area" (McCarthy and Perreault, 1991:302). The information is of vital importance to pharmaceutical companies for their marketing planning, as the sales force budget usually accounts for over 50% of the average pharmaceutical company's promotional budget (Koekemoer, 1987: 468). In addition, as it is too expensive to reach every possible prescriber, it is important to improve the marketing approaches used by the pharmaceutical companies (Corstjens, 1991: 8).

It could also be useful to the medical practitioners to enable them to become more aware of the extent of the influence of the various factors on their prescribing habits. This in turn would help promote rational/appropriate prescribing. Currently in South Africa, the medical practitioners can prescribe and/or dispense medication directly to the patients. Inappropriate prescribing includes practices such as: prescribing medication that has no proven benefit in a particular situation, over or under prescribing of medications, and situations where newer more expensive ethical drug(s) are prescribed instead of the equivalent older or generic drug(s). According to Steve Hulme, cited by MacLean (2001), a literature survey showed that "the more doctors rely on commercial source of information, the less appropriate and less cost-effective are their prescribing decisions."

The research will also determine if there are any significant changes since Pitt and Nel undertook their study in 1988. Furthermore, to my knowledge, there is no preceding similar research in this region of South Africa.

As a medical practitioner with twelve years of experience, the latter eight years as a general practitioner in Pietermaritzburg, the study will also draw upon the researcher's personal experience of the various promotional activities utilised by the pharmaceutical companies.

STATEMENT OF THE PROBLEM

What are the perceived influences of the various pharmaceutical promotional tools on the General Practitioner's choice of prescription drugs and what are the key factors pertaining to the pharmaceutical representatives influencing this choice?

1.3 OBJECTIVES OF THE SURVEY

1. To determine the factors influencing the *General Practitioners*' (GPs') choice of prescription drug.
2. To determine the GPs' perception of the effect of the various promotional activities on their prescribing behaviour.
3. To identify and determine the extent of the impact of various factors of pharmaceutical sales representative promotional activity on GPs' prescribing habits in Pietermaritzburg.

4. To determine the *most important factors* of the pharmaceutical representatives' promotional activity, as perceived by the GPs in Pietermaritzburg.
5. To determine the GPs' awareness of basic statistics in order to assess their ability to understand the use of statistical information by the pharmaceutical representatives in their presentations/personal selling.

1.4 STRUCTURE

The study is structured as follows:
Chapter 1, **INTRODUCTION**, provides brief background information on prescription drugs, reasons for undertaking the study, and the research objectives of the study.

Chapter 2, **THEORY OF PROMOTION**, describes the general marketing theories with respect to promotion. It further looks at the theoretical models of the communication process, models of decision making and consumer buying behaviour. The promotional activity of personal selling is described in detail.

Chapter 3, **THE PHARMACEUTICAL INDUSTRY AND THE MARKETPLACE,** describes the pharmaceutical industry and the marketplace in South Africa and its relationship to the global pharmaceutical industry.

Chapter 4, **PROMOTION OF PHARMACEUTICAL DRUGS,** looks at the promotion of pharmaceutical drugs and the most common promotional tools used by the pharmaceutical companies. The process of prescribing of pharmaceutical drugs by the medical practitioners and the factors influencing this decision process are also discussed. Greater focus is given to the effects of the pharmaceutical representative's promotional activity on the prescribing behaviour of the general (family) medical practitioners.

Chapter 5, **LEGISLATIONS AND ETHICS,** looks at the influence of the policies of various government and regulatory bodies on the promotion of pharmaceutical drugs and briefly examines the ethical issues of pharmaceutical promotion.

Chapter 6, **RESEARCH METHODOLOGY**, gives a detailed description of the research methodology.

Chapter 7, **ANALYSIS OF RESULTS**, presents the results and the analyses of the primary research and compares the results to the literature survey.

Chapter 8, **CONCLUSIONS AND RECOMMENDATIONS**, presents the conclusions of the study as it relates to the literature survey. Recommendations are made based on the findings. Limitations of the study as well as areas for future research are also discussed.

CHAPTER 2: THEORY OF PROMOTION

This chapter describes the general marketing theories with respect to promotion. It further looks at the theoretical models of the communication process, models of decision making, and consumer buying behaviour. The promotional activity of personal selling is described in detail as a background to offer understanding of the pharmaceutical representative's role in pharmaceutical promotion.

2.1 PROMOTION

Promotion is one element of the well described "four Ps" of the marketing mix. The remaining "Ps" being Product, Price and Place (Etzel *et al*, 1997:60; Kotler and Armstrong, 2001: 67; Solomon and Stuart, 1997: 11).

Ludi Koekemoer (1998: 8) defines promotion as:

> *"The collective activities and tools used by a marketer to inform or remind prospective customers about a particular product offering and to attempt to persuade them to purchase or use it".*

According to McCarthy and Perreault (1991: 284), the overall objectives of promotion are: (1) reinforce present attitudes that lead to favourable behaviour or (2) actually change the attitudes and behaviour of the firm's target market. Promotion thus represents the communication efforts of the marketer to influence the beliefs, attitudes and buying behaviour of prospective customers.

In addition, Koekemoer (1998: 28) provides a wider perspective and contends that one or more of the following, are the specific objective(s) of promotion:

- To build primary demand: For example, the pharmaceutical representative strives to convince the doctors to use his/her company product instead of the competitor's product.
- To create brand awareness: For example, the sales representatives endeavour to create secondary demand for their brands in order to increase their market share.

- To provide relevant information (knowledge): For example, the *sales rep* provides information on the particular drug that he/she is 'detailing' (detailing is one of the terms used to describe the activity of personal selling to medical practitioners). He/she focuses on the unique selling points (USPs) in order to differentiate the drug from the competitor's. The medical practitioners require greater information in order to choose between the different brands.
- To influence attitudes and feelings: For example, the use of different positioning strategies by the pharmaceutical companies to develop positive brand impressions to influence the attitudes of the doctors.
- To create desires: For example, the promotional communication attempts to create a positive feeling towards a particular brand.
- To create preferences: For example, a pharmaceutical drug offering more value-added benefits than the competitors such as free patient education for chronic disease such as diabetes and hypertension, and or free periodic newsletters to patients joining the education/supportive programmes.
- To facilitate purchase and trial: For example, the *sales rep* leaving behind a sample for the doctor to give to the relevant patient or offering 'rep discount' if placing an order through the representative in the case of dispensing doctors. The discounted price offered is lower than that offered by the wholesaler.
- To create loyal customers: For example, by encouraging repeat prescriptions/ repeated usage.

2.2 TYPES OF PROMOTIONS:

The major types of promotions are *advertising, sales promotion, publicity, public relations, and personal selling* (Etzel *et al*, 1997: 447). In addition, Koekemoer (1998: 9) also includes *sponsorship* as a separate category of promotion. Moreover, *direct marketing* is also classified as one of the elements of promotion, instead of *publicity* (Koekemoer, 1998: 10; Kotler and Armstrong, 2001: 512).

Definitions of the different promotional tools are provided below:

- **Advertising** is defined as "*any paid form of nonpersonal presentation and promotion of ideas, goods, or services by an identified sponsor*" (Kotler and Armstrong, 2001: 512).
- **Personal selling** is defined as "*the direct presentation of a product to a prospective customer by a representative of an organisation selling it*" (Etzel *et al*, 1997: 440).
- **Sales promotion** is defined as " *any activity that offers incentives for a limited time period to induce a desired response, such as a trial or purchase, from those who are targeted*" (Koekemoer, 1998: 10).
- **Publicity** is defined as " *any unpaid form of nonpersonal presentation if ideas, goods, or services*" (McCarthy and Perrreault, 1991: 282).
- **Public Relations** is defined as " *building good relations with the company's various publics by obtaining favourable publicity, building up a good corporate image, and handling or heading off unfavourable rumours, stories, and events*" (Kotler and Armstrong, 2001: 512).
- **Sponsorship** is defined as "*the marketing communications activity whereby a sponsor contractually provides financial and/or other support to an organisation or individual in return for rights to use the sponsor's name (company, product, brand) and logo in connection with a sponsored event or activity*" (Koekemoer, 1998: 11).
- **Direct marketing** is defined as "*direct communication with carefully targeted individual consumers to obtain an immediate response, and cultivate lasting customer relationships*" (Kotler and Armstrong, 2001: 512).

The marketer will therefore use varying amounts of each type of promotion according to what the marketer perceives to be an ideal promotional mix. Essentially the marketers can choose either a *push* or a *pull* promotion strategy (Kotler and Armstrong, 2001: 531). The promotional mix targeting the middlemen is considered a push strategy and that which targets the end users is called a pull strategy (Etzel *et al*, 1997: 451). The relative extent of the specific promotion tools will vary depending on the strategy selected. Generally, personal selling and sales promotion such as contests for sales staff, predominates a push strategy whilst heavy advertising and sales promotion, such as samples, predominates a pull strategy (Etzel *et al*, 1997: 451). The legislations controlling prescription drugs restrict the pharmaceutical companies to operate predominantly a 'push' promotional strategy, i.e.

promotion to healthcare professionals and not directly to the general public (Reast and Carson, 2000: 397).

Other factors influencing the promotional mix are: the target market, the nature of the product, the stage in the product's life cycle, and the amount of money budgeted for the promotion (Etzel *et al*, 1997: 447). Thus, (i) the characteristics of the target market including their readiness to buy, (ii) the level of value-adding features of the product, (iii) whether the product is in the introductory/growth/ maturity or decline stage of its life-cycle, (iv) the amount of money available for promotion, will also have an effect on the extent to which each element of promotion is utilised (Etzel *et al*, 1997: 447).

2.3 COMMUNICATION

As discussed earlier, promotion represents the communication efforts of the marketer. Effective communication will increase the chances of more successful promotion whilst ineffective communication will result in the failure of promotion. How well a drug is communicated to medical practitioners can mean a difference between its commercial success and failure. An understanding of the communication process is important to ascertain the determinants of an effective communication (Kotler and Armstrong, 2001:518).

Most authors of marketing related books and articles describe the following as the five basic components of the communication process: the sender/the source, the message, the medium/channel, the receiver, and the feedback/receiver's response. The process consists of the sender encoding the message using words, pictures, symbols that are then transmitted via a chosen medium to the intended receiver who in turn decodes it based upon his/her prior experience and personality trait (Koekemoer, 1998: 34; Kotler and Armstrong, 2001: 518; Schiffman and Kanuk, 1994: 284). They further classify the communication as interpersonal or impersonal/mass communication.

Various factors can influence the effectiveness of the communication. The marketer cannot control the target audience's response, however the marketer can exert influence on the source, the message and the channel of intended communication (Koekemoer, 1998: 34).

According to Koekemoer (1998: 45-49) the key variables influencing persuasive communication are:

1. **Source related variables**: *the sender's credibility and attractiveness*. The reputation, expertise and knowledge of the sender are important determinants of the credibility. The spokesperson such as the *sales rep* has a major influence on the credibility of the message, e.g. the spokesperson that engenders confidence and creates an impression of honesty and integrity is more successful in persuading the prospect. Most of the pharmaceutical companies employ and train pharmaceutical sales representatives from medically allied fields such as nursing, medical technology, and health sciences to improve their credibility to the medical practitioners. "If the source is well respected and highly thought of by the intended audience, the message is more likely to be believed" (Schiffman and Kanuk, 1994: 288). The pharmaceutical companies regularly use well-known specialists in various disciplines to give talks at seminars and meetings sponsored by the company.

   Attractiveness includes similarity, familiarity and likeability. According to Koekemoer (1998), the communication is more likely to be persuasive when the receiver finds the source attractive. The pharmaceutical companies use attractive well-groomed sales-persons, especially ladies, to increase the persuasiveness of their message. The repeated visits by the *sales reps* allow them to identify similarities and increase familiarity with the medical practitioners, which can be used to increase the effectiveness of the communication.

2. **Message related variables**: *the type of appeal, message style, inclusions and omissions and the order of presentation.* Pharmaceutical promotion most commonly uses *repetition* type of appeal as it increases the likelihood of the message being remembered. The other types of appeal utilised by the pharmaceutical companies are *rational* and *emotional* appeals. A *Rational appeal* emphasizes the efficacy and quality of the medication whilst an *emotional appeal* is directed at the physicians' ego, prestige and self-esteem. Kotler and Armstrong, (2001: 522) assert that emotional appeals evoke either positive or negative emotions that influence the purchase. *Message style* concerns how the message is presented and the skills of the presenter. *Inclusions and omissions* deal with what is included and what the receiver is left to deduce. Presenting the strongest argument at the beginning of the presentation results

in "*first impression*" effect whilst presenting it at the end results in "*recency effect*" (Schiffman and Kanuk, 1994: 289). "*First impression*" effect is whereby the details presented first are remembered best and the "*recency effect*" results in the details presented last being the most persuasive.

3. **Channel related variables**: *the receiver's direct experience with the product versus the communication about it, communication modality and media effectiveness.* The receiver's own experience with the product is more persuasive than the promotion communication. This was vindicated by Pitt and Nel (1988), who found that the physician's own experience with the medications had the strongest influence on their prescribing when considering all influential variables. Promotion of prescription drugs is generally limited to print and personal selling due to governing regulations. Pharmaceutical companies use personal selling as well as brochures and print advertising (detail-aids) to transmit complex technical information.

   The medical practitioners in Pietermaritzburg generally use one or more of the three languages in their communications with the patients and the pharmaceutical representatives, depending upon their ethnic background. The three commonest languages used are English, isiZulu, and Afrikaans. According to Koekemoer (1998), the sender's command and articulation of the language used by the receiver, has a strong influence on the perception of the message by the receiver.

4. **Receiver related variables**: *the degree of receiver participation, demographic factors and personality characteristics.* "If a receiver is highly involved the message gives rise to a cognitive change leading to a change in attitude and behaviour" (Koekemoer, 1998: 49). The age and gender of the receiver are also believed to influence the extent to which the receiver can be persuaded. The receivers with higher intelligence and self-esteem are more critical in evaluating the message being received. Therefore, the medical practitioners generally tend to be highly involved in the communication process and are also more critical in their evaluation of the message.

Furthermore, communication effectiveness is also influenced by '*noise*' (Schiffman and Kanuk, 1994: 288). McCarthy and Perreault (1991: 286) define "*noise*" as any factor that reduces the effectiveness of the communication. "The best way for a sender to overcome

noise is simply to repeat the message several times" (Schiffman and Kanuk, 1994: 288). Many pharmaceutical companies thus use more than one sales representative and frequent visits to deliver the same message to the target medial practitioners. The frequent visits also help build a relationship with the medical practitioners.

2.4 CONSUMER BEHAVIOUR MODELS OF MAN

The consumer behaviour models of man offer insight as to why different consumers will make differing decisions for the same situation. Schiffman and Kanuk (1994: 555-558) discuss the following theoretical models of man: (1) *economic man*, (2) *passive man*, (3) *cognitive man*, and (4) *emotional man*.

1. ***Economic man***. The model of an *economic man* is based upon the economic marketplace model of perfect competition whereby the consumer will make a rational decision based upon the knowledge of all available alternatives. As consumers live in an imperfect world, they do not 'maximise' their decisions but aim for a 'satisfactory' decision. The model is thus regarded as unrealistic.

2. ***Passive man.*** This model assumes that the consumers will readily submit to the promotional activities of the seller. This model is also regarded as unrealistic since the consumers obtain information on and evaluate the alternative products rather than blindly believe a single marketer's promotional message.

3. ***Cognitive man.*** This model explains the decision-making behaviour of the consumer as a problem-solving process. It focuses on the method by which the consumers gather and assess information. The cognitive model also explains the consumer as using a 'preference formation strategy' whereby the consumers allow another person such as an expert retail salesperson to establish product and/or brand preference for them. The consumer is seen to make an "adequate" decision based upon "sufficient" information on available alternatives. This model is viewed to most realistic compared to other models.

4. ***Emotional man.*** This model theorises that the consumers make certain purchase decisions to satisfy certain emotional need(s) depending upon his/her mood with less emphasis on evaluating the available alternatives. The satisfaction of the emotional need does not necessarily constitute an irrational decision. The consumers' mood is seen to have an important impact on their decision-making.

The model that best fits the medical practitioner is '*cognitive man*' as the medical practitioner follows the problem-solving approach to arrive at a diagnosis, and then recommends treatment from the available alternatives based upon his knowledge. It is difficult to assess whether or not, and to what extent the emotional factors play a role in this decision.

2.5 BUYING DECISION

2.5.1 INDIVIDUAL BUYING-DECISION:

The buying process refers to the stages that the consumer goes through in reaching a decision as to whether to continue/discontinue the use of a product or to initiate a trial use or not (Schiffman and Kanuk, 1994: 541).

The buying-decision process model has been well described in the various marketing books (Etzel et al, 1997: 111; Koekemoer, 1998: 209; Kotler and Armstrong, 2001: 193; Solomon and Stuart, 1997: 210). They describe the buying-decision process to comprise of the following steps:

1. Need recognition. The consumer is moved to action by a need. The medical practitioner is moved by his primary need to improve the patient's health.
2. Identification of alternatives. The consumer identifies and collects information on alternate products and brands. The medical practitioner will identify the different therapeutic alternatives.
3. Evaluation of the alternatives. The pros and cons of each alternative are then evaluated.
4. Decision. One of the alternatives is selected.
5. Post- purchase behaviour. The consumer seeks reassurance that the correct choice was made.

The level of involvement of the consumer has a significant influence on the above model with low-involvement situations including fewer stages whilst high-involvement situations including all five stages of decision-making process (Etzel et al, 1997: 129). The decision-making by a medical practitioner is a high-involvement situation as the therapeutic option (type of therapy) chosen is viewed as providing significant benefit(s) and or potential risk(s) from adverse effects to the patient.

Kotler and Armstrong (2001: 200) define a ***new product*** as "a good, service, or a idea that is ***perceived*** by some potential customer ***as new***". Lidstone and Collier (1987: 93) describe the buying process for a product to consist of the following stages: Unawareness→ Awareness→ Interest→ Evaluation→ Trial→ Usage→ Repeated usage. This is based on the 'Hierarchy of Effects' model, which describes the chain of events that have to happen before a prescription is made (Vaughn, 1980: 27 – 33). The stages, as described by Lidstone and Collier (1987: 93-95) are:

- ***Unawareness to Awareness***: The doctor moves from a stage of ignorance about a product to becoming familiar with the product. The pharmaceutical representative informs the doctor about the existence of the product and creates a therapeutic association between the product and the ailment it is aimed at.

  Generally, the majority of doctors are aware of the most new pharmaceutical products available in the market. The key task of the promotion at this stage is to achieve 'top of mind' awareness and not just passive awareness, i.e. promoted to the extent whereby the specific drug being promoted, is considered foremost ahead of the competitors' drugs (Corstjens, 1991: 221).

- ***Awareness to Interest***: The doctor seeks more information about the medication/product during this stage. The promotional objectives are to get the prescriber's attention, create interest (motivation), and provide information. The *sales rep* arouses the doctor's interest through the *Unique Selling Points* (USPs) of the medication and provides more information.

  The doctor considers very few therapeutic alternatives following diagnosing a specific illness in the patient. In order to become part of this narrow selection of therapeutic

alternatives, the positioning of the drug is very important (Corstjens, 1991: 222). The USPs are thus critical for this stage.

- ***Interest to Evaluation***: The doctor will consider the information received from the *sales rep* and under the influence of personal and non-personal/external factors the doctor will evaluate whether the drug meets patient's needs or not.

- ***Evaluation to trial***: The doctor has decided to try the product/drug when the opportunity arises. The *sales rep* has to identify, all clear indications for the use of the drug and encourage usage when these opportunities occur (Lidstone and Collier, 1987: 94). The *sales rep* generally leaves a sample of the drug with the doctor. The availability of the drug encourages trial.

- ***Trial to Usage***: The sample together with the evidence from the clinical trials – communicated to the doctors via sales reps, medical journals, and medical conferences – are the key marketing instruments to induce prescriber to try the product (Corstjens, 1991: 222). The doctor will prescribe or dispense the sample drug for a patient. The *sales rep* accentuates the USPs in their presentation and offer anecdotal evidence of other doctors experiencing success with the drug (Lidstone and Collier, 1987: 95).

- ***Usage to Repeated Usage***: The objective is to generate repeat prescriptions from the doctor, i.e. to make the drug a habitual choice for the doctor when faced with the same indications. If the initial trial-use is successful in meeting the doctor's need(s), he/she will prescribe the drug for another patient. The sales rep will continue to stress the USPs at each visit and strengthen the relationship with the doctor.

  The prescribing doctors are sensitive to further information to reinforce their beliefs about the product benefits and the satisfied doctors can further contribute to the success of the drug via the 'word of mouth' to their colleagues (Corstjens, 1991: 223).

The pharmaceutical representative thus attempts to guide the medical practitioner through all stages of the promotional process, viz. from unawareness of the product through repeated use. The activities of pharmaceutical representatives will be discussed in detail in chapter 4.

2.5.2 BUSINESS BUYING-DECISION:

The medical practitioners can also be viewed as "businesses" since the patients are the final consumers of the medications (products) and the prescribing doctors are the "middle-men". The patients thus derive the demand for the medication. This demand is relatively price inelastic as the welfare of the patients is the most important consideration instead of the price of the medication. The patients do not automatically use more of the medication because it is cheaper. However, the prescribing/dispensing doctor will take the affordability of the patient or the rules of the healthcare funders into consideration when selecting the medication for the patient.

In a normal business there will be many participants in the buying-decision making process. These participants include: the ***users*** of the product, the ***influencers*** who often provide information for the evaluation, the ***deciders*** who approve the final purchase, the actual ***buyers*** of the product, and the ***gatekeepers*** who control the access of information and/or the sales person to the others (Kotler and Armstrong, 2001:219). In the case of the medical practitioners, they have unique and often multiple roles in the buying-decision of pharmaceutical products (Pitt and Nel, 1988).

The various roles, of a medical practitioner, identified by Pitt and Nel (1988) are: the role of a *user* (e.g. when purchasing syringes and needles for the process of administering injections), the role of an *influencer* (e.g. when advising the patient on over-the-counter /non-prescription medication), the role of a *buyer* (e.g. when purchasing the medication for injection purposes), the role of a *decider* (e.g. when deciding which medication to prescribe or dispense), and the role of a *gatekeeper* (e.g. access to and control of important information). The understanding of these various roles played by the medical practitioner is of paramount importance to the marketers of prescription drugs.

2.6 PERSONAL SELLING

Koekemoer (1998: 196) defines personal selling as "a person-to-person process by which the seller learns about the prospective buyer's wants and seeks to satisfy them by offering suitable goods or services and making a sale". Similarly, Solomon and Stuart (1997: 680) define it as the component of the promotional mix that involves a direct contact between a representative of the company and the customer for the purposes of persuading the customer to make a

purchase. Therefore, it can be deduced from the above stated definitions that persuasive communication is the essence of personal selling.

Personal selling is divided into three tasks: *order getting*, *order taking*, and *supporting* (McCarthy and Perreault, 1991: 304). *Order- getters* use sale-presentations to sell a product or service. Order getters' tasks are to find new customers, provide information on the company's products to the existing and new customers, and persuade the customers of the benefits of using their products (Solomon and Stuart, 1997: 688). Pharmaceutical representatives use detail-aids (sale-presentations) to persuade the medical practitioners that their product (drug and/or service) can better satisfy the practitioners' needs than their competitors can. The order getters also help establish and build relationships with the customers. *Order-takers* generally complete the sales transaction. The dispensing doctor may place an order for prescription drugs with the pharmaceutical representative, who in turn puts the order through the medical wholesalers. This method of ordering results in a cost saving to the doctor through the varying discounts and bonus deals offered only via the representatives. *Supporting* salespersons provide assistance to the sales-force but are not involved in the actual sale. They may provide specialised service(s) and information. The supporting salespersons can be the missionary salespersons, the technical specialists, or the sales team (Solomon and Stuart, 1997: 689).

Missionary salespersons promote the company and stimulate an indirect demand for their products. "In the pharmaceutical industry, missionary salespeople known as *detailers* keep physicians up to date on the latest medicines. By answering questions and providing informational pamphlets and samples, missionary salespeople give valuable assistance to physicians and influence what drugs they will prescribe" (Solomon and Stuart, 1997: 689). The technical specialists, usually scientists and engineers provide technical knowledge of the company's products to assist the order-getters (McCarthy and Perreault, 1991: 309). The sales team consist of the salespersons of differing expertise working together to promote the drug to a specific customer. A variation of this, concerning the pharmaceutical promotion, is the use of more than one *sales rep* by the pharmaceutical companies to emphasize different benefits of a particular prescription drug. The product manager and the sales manager supervise the team effort.

Koekemoer (1998: 196-197) describe the following advantages and disadvantages of personal selling over other forms of promotion:

ADVANTAGES:

1. Obligation. The prospect/customer is likely to feel obliged to pay attention to the message being conveyed in the face-to-face encounter with the salesperson.
2. Tailor message. The salesperson can tailor the message according to the needs of the customer. The pharmaceutical representative can decide on whether to concentrate on the effectiveness, the price, or the convenience of the prescription drug depending upon the doctor that is being detailed.
3. Prompt feedback. Based on the verbal and non-verbal cues of the doctor, the *sales reps* can immediately adjust their presentation.
4. Complex information. The *sales reps* are able to communicate to the doctors a great deal of complex information not feasible via other means such as advertising in medical journals.
5. Demonstrations. The use of detail-aids and product samples allow the *sales reps* to give emphasis to the message.
6. Customer education. The *sales reps* educate and remind the doctors of the benefits and adverse effects of the prescription drug.
7. Closing the sale. At the end of the detailing process, the *sales reps* attempt to obtain commitment from the doctor to use the specific drug being promoted when the opportunity arises.

DISADVANTAGES:

1. Expensive. Because the sales reps can only interact with a small number of doctors per day, a relatively large sales-force is required for the promotional effort. This is comparatively far more costly than other promotional modalities.

Personal selling by means of a highly trained sales force is one of the most important promotional tools of the pharmaceutical companies. "Given the nature of pharmaceutical products, personal communication with prescribers is a key success factor in the industry" (Corstjens, 1991: 218).

The following chapter 3 will look at the pharmaceutical industry and the marketplace to provide information on the enormity and the importance of the pharmaceutical industry.

CHAPTER 3: THE PHARMACEUTICAL INDUSTRY AND THE MARKETPLACE

This chapter describes the pharmaceutical industry and the marketplace in South Africa and its relationship to the global pharmaceutical industry.

3.1 THE PHARMACEUTICAL INDUSTRY

The current South African pharmaceutical industry is valued at above R10 billion, with more than 80% of the revenues generated by the private sector (NAPM-Fast Facts, paragraph 1). The South African pharmaceutical industry's gross output was R6.23 billion in 2001 (PMA, 2003: 9). Between 1994 and 2001, the consumption of medicinal and pharmaceutical preparations rose by 41% in real terms when compared to semi-durable goods at 34% and non-durable goods at 14% (PMA, 2003: 12). The SA pharmaceutical industry is fairly well developed, catering for 60% of local demand and exporting around 20% of its output (NAPM-Overview, paragraph 1).

According to the *South African Statistics 2001* cited in PMA Draft Annual Report (2003: 10), the South African pharmaceutical industry, for the period 1992 – 1999, showed a significant upward trend in all industrial indicators considered, viz. production, exports, imports, employment, salaries and wages, and labour productivity, when compared to the chemical sector in general. Between 1994 and 2001 the South African pharmaceutical exports rose by 342% and the imports rose by 319% (PMA, 2003: 13). South Africa exports predominantly to African countries (mainly Zimbabwe) and to a lesser extent to Australasia, Europe and North America. Importation is mainly from Germany, followed by United Kingdom, France and United States (NAPM-Overview, paragraph 7).

The leading foreign trade partners of South Africa for pharmaceuticals in 1999 and 2000 are depicted in Figure 1. It also shows that the largest importation of pharmaceuticals was from Germany (19.1%), United Kingdom (16.1%), France (12.0%), and USA (9.3%). This is probably due to the fact that the leading pharmaceutical companies are headquartered in one of these countries and is responsible for the majority of research and development of pharmaceuticals (PMA, 2003: 13).

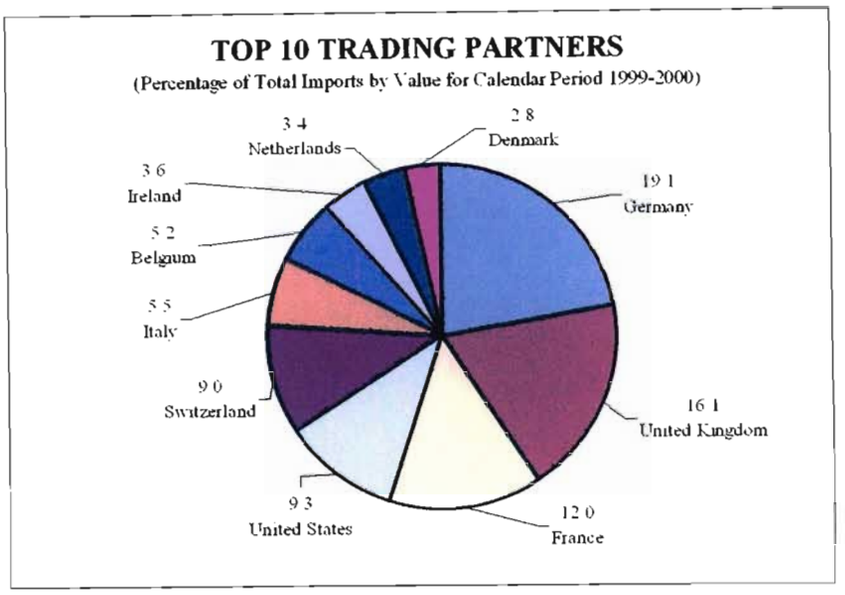

Figure: 1. Source: Department of trade and Industry 2002.

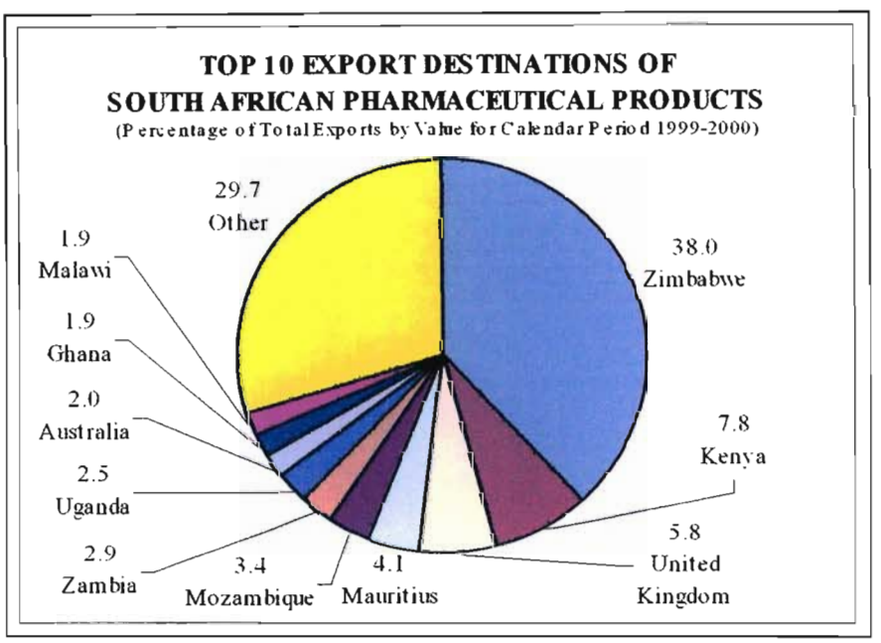

Figure: 2. Source: Department of Trade and Industry 2002.

Figure 2 shows that for the period 1999-2000, 38% of South African pharmaceutical exports were to Zimbabwe with the majority of the top 10 export destinations of South African pharmaceutical products being other African countries.

Globally the pharmaceutical industry is characterised by incredibly expensive research and development costs and extremely long lead-times from the product development phase to the approval of the drug for prescription to patients. In 1988, the American pharmaceutical companies spent more than $5 billion on research and development (Corstjens, 1991: 7). The lead-time can be up to twelve years (Bartlett, 1988-as cited in Gillingham, 1995: 30; Corstjens, 1991: 10). According to Simons (2003: 28) "the cost of ushering in a single drug nearly quintupled to $800 million in the past decade." To develop the pharmaceutical drug *Cialis*®, it cost the pharmaceutical company Lilly, approximately $1-billion and took 10 years (Moodie, 2003:1). It is estimated that only one out of every five to ten thousand compounds that are examined for medicinal use, actually reach the market (Corstjens, 1991: 12). The commercial success of the pharmaceutical company depends upon developing innovative drugs and improving the existing medical drugs to maintain or increase their market share.

3.1.1 THE EXTERNAL ENVIRONMENT

The external environments, similarly to other industries, also influence the pharmaceutical industry. The external factors having a particularly strong influence on the pharmaceutical companies are the governmental, legal, and the technological factors. In many countries the government tends to be the main customer of the pharmaceutical drugs. Changes in the legislations influencing the various facets of the healthcare delivery of the country and regulations controlling the registration of drugs, profits, pricing and promotional methods of the pharmaceutical companies have a tremendous impact on the structure, size and the profitability of the pharmaceutical industry. The innovative/technological breakthrough by the competitors also has a major impact on the company and the industry. The competitiveness and the survival of the research-based multi-national pharmaceutical companies are closely tied to their innovative capacity (Kalake, 1999: 10).

The social factors such as income per capita, education/literacy rate and the level of infrastructure of a country have an important influence on the disease/illness profile of the country and indirectly the pharmaceutical industry. The age distribution of the population, life-styles, and attitudes of the people including the medical practitioners will also influence the demand for the various pharmaceutical products.

In South Africa the managed healthcare (medical aid schemes) exerts a very strong influence on the pharmaceutical industry via their rules. The rules of the medical schemes not only influence but also restrict the medical practitioners, the pharmacists, and the patients as to which pharmaceuticals can be prescribed or dispensed. In instances where the cost of the medication(s) is to be reimbursed by the medical schemes, the prescribing doctor is restricted to prescribing medications that are listed by the medical schemes on their *formulary/essential drug list* (EDL). A formulary/EDL is a continuously revised list of medications that have been approved by the managed healthcare organisations for prescription by the medical practitioners.

If the medical practitioner chooses to ignore the relevant EDL, then the pharmacist is forced to substitute the prescribed drug with the one that will be reimbursed by the medical schemes, unless the patient chooses to pay for the prescribed drug with cash. Some medical scheme administrators such as *'Medscheme'* are offering incentives to the medical practitioners to alter their prescribing to include more generic drugs. The medical practitioner is required to sign a contract with the said administrator that restricts him/her to the use of drugs on the scheme's formulary and allows for therapeutic substitution of ethical pharmaceuticals with generics. The compliance with the contract results in a slightly higher reimbursement for consultation for the contracted doctor than the non-contracted doctor. In this situation, the promotion of prescription drugs that are not on the EDL will have minimal influence on the prescribing behaviour of the contracted medical practitioners.

3.1.2 THE INTERNAL ENVIRONMENT

> *"As a consequence of the essentially uncontrollable nature of both the external environment and the patient population, the activities of the pharmaceutical manufacturer towards changing his internal environment tends to be reactive in nature, paralleling the external, uncontrollable changes"* (Smith, 1975: 11).

Therefore, each pharmaceutical company will develop its marketing mix of product, place, price, and promotion according to what it perceive to be the optimal response in light of the influencing external factors.

3.2 THE MARKETPLACE FOR PHARMACEUTICAL DRUGS:

The pharmaceutical market broadly covers a range of markets. It can be classified according to: ethical versus (vs.) generic drugs, prescription vs. non-prescription drugs, public vs. private sector, distribution channel (dispensing doctors/ retail pharmacies/ wholesalers/ private hospital/ public hospital), and therapeutic product classes (e.g. cardiovascular/ respiratory/ psychotropic/ analgesics) (Corstjens, 1991: 20).

As mentioned previously, the pharmaceutical market differs from other consumer goods markets as a result of the nature of the product itself and the various regulations and restrictions placed on its marketing. The main role players are the pharmaceutical companies, the medical practitioners, the pharmacists, the patients, managed healthcare organisations (medical aid schemes), and the government. The number of prescription drugs and their prices vary from country to country depending upon their success in registering with the relevant bodies and the country's regulations.

The social and cultural differences of the country influence the demand for the pharmaceutical drugs. Mapes (1980: 9) and Reekie and Weber (1979: 28) identified five key indicators that determine the rate and character of the demand for pharmaceuticals in a country:

1. Demography: the size, age distribution and growth of the population.
2. Morbidity patterns: the epidemiology of the diseases and their susceptibility to the available pharmaceuticals.
3. Health care facilities: The availability and the adequacy of the health care infrastructure in the country.
4. Health care expectations: personal and group health care norms and expectations of the population determine the degree of impetus given to the government to provide comprehensive healthcare. As the knowledge of the population with respect to diseases and medications increases, so too do their expectations of the treatment received from the doctor increase.
5. Propensity to purchase: the availability of resources (governmental/insurance/private) to purchase healthcare products.

WORLD MARKET FOR PHARMACEUTICALS AT EX-FACTORY PRICES (USD MILLION)

YEAR	1997	1998	1999	2000	2001
World Market	293838	307000	333312	317200	364200
South Africa	1418	1269	1238	1399	1274
South African Share	0.48%	0.41%	0.37%	0.44%	0.35

Table 1. Source: IMS Health 1996 – 2002, cited in PMA (2003).

The world market for pharmaceutical at ex-factory prices was $364 200million in 2001, whilst the South African share of this was only 0.35% (Table 1). From 1997 to 2001, the South African market share of the world market for pharmaceuticals was less than 0.5% (Table 1). South Africa's medicine costs as a percentage of the total health care bill amounted to 20.0% in 2000 (PMA, 2003: 8).

Generally, the market is defined corporately. The twenty largest multi-national pharmaceutical companies (Table 2) comprise of: eight American, ten European, and two Japanese. It also shows that there is no observable dominant or monopolistic behaviour in the pharmaceutical industry.

The twenty largest pharmaceutical companies in the world in 2001 were:

TOP 20 LEADING PHARMACEUTICAL COMPANIES, 2001

CORPORATION NAME	MARKET SHARE IN 2001 (%)	RANK IN 2001
Pfizer	7.5	1
GSK	7.0	2
Merck & Co.	5.3	3
AstraZeneca	4.6	4
Johnson & Johnson	4.4	5
Bristol-Myers Squibb	4.3	6
Novartis	4.0	7
Aventis	3.5	8
Pharmacia	3.4	9
Abbott	3.1	10
American Home Products	3.1	11
Eli Lilly	2.9	12
Roche	2.8	13
Schering-Plough	2.4	14
Takeda	1.8	15
Bayer	1.8	16
Boehringer-Ingelheim	1.4	17
Sanofi-Synthelabo	1.1	18
Amgen	1.1	19
Eisai	0.9	20
TOTAL	66.1	

Table 2. Source: IMS Health 2002, cited in PMA (2003)

Pfizer is the leading pharmaceutical manufacturer of prescription medicines with over 11% of the global market in 2002 (Ryan, 2003:15). Pfizer's global pharmaceutical revenue was $45-billion in 2002, of which, the South African operation represented 0.3% (R1.1-billion) (Ryan, 2003:15). The critical success factor for Pfizer is its armoury of ten brands, each worth $1-billion, and only one of these leading ten brands' patent expires in 2005 (Ryan, 2003:15).

The majority of multi-national pharmaceutical companies are operational in South Africa (SA). The multi-nationals operate in SA through establishing local subsidiaries or by having a licensing agreement with local companies. This is induced by the incapacity of the limited domestic markets alone to support, through sales, the high research and development cost of medicines (Reekie, 1975, as cited in Kalake, 1999: 10).

Most of the pharmaceutical companies operate both in the private and public health sectors in South Africa. As discussed in chapter 1, there is a vast difference in the cost of the pharmaceutical drugs to the public and private sectors. The pharmaceutical companies derive majority of their profits from the private sector.

SA MARKET SHARES BY NATIONALITY OF CORPORATE OWNERSHIP (Values – Percent)

PRIVATE PHARMACY MARKET	2002 SHARE	PUBLIC SECTOR	2002 SHARE
RSA	27.74	RSA	24.40
USA	27.69	USA	17.70
UK	10.45	SWITZERLAND	13.90
SWITZERLAND	10.35	GERMANY	13.70
GERMANY	10.03	FRANCE	13.20
FRANCE	9.07	UK	7.00
DENMARK	2.08	DENMARK	6.40
BELGIUM	0.93	INDIA	2.90
INDIA	1.26	NETHERLANDS	0.20
OTHER	0.40	OTHER	0.60
Total	100.0	Total	100.0
Number of firms in 2002	220	Number of firms in 2002	86

Table 3. Source: IMS health 2002, cited in PMA (2003)

There were 220 firms operating in the private sector and 86 firms operating in the public sector (Table 3). From the above table, it can also be seen that the South African pharmaceutical companies have roughly a quarter of the market share in both the private and public sectors with the remaining shared by the multi-national companies.

South Africa's spending on pharmaceuticals as a percentage of total healthcare spending for the last decade, as compared to most first world countries, is shown in figure 3. Over the last decade, this increased from 17.7% in 1990 to 20.0% in 2000. From the comparative graph, it can be seen that only Germany, of all countries considered, managed to decrease its pharmaceutical spending as a percentage of its total healthcare spending (from 14.3% to 13.6%).

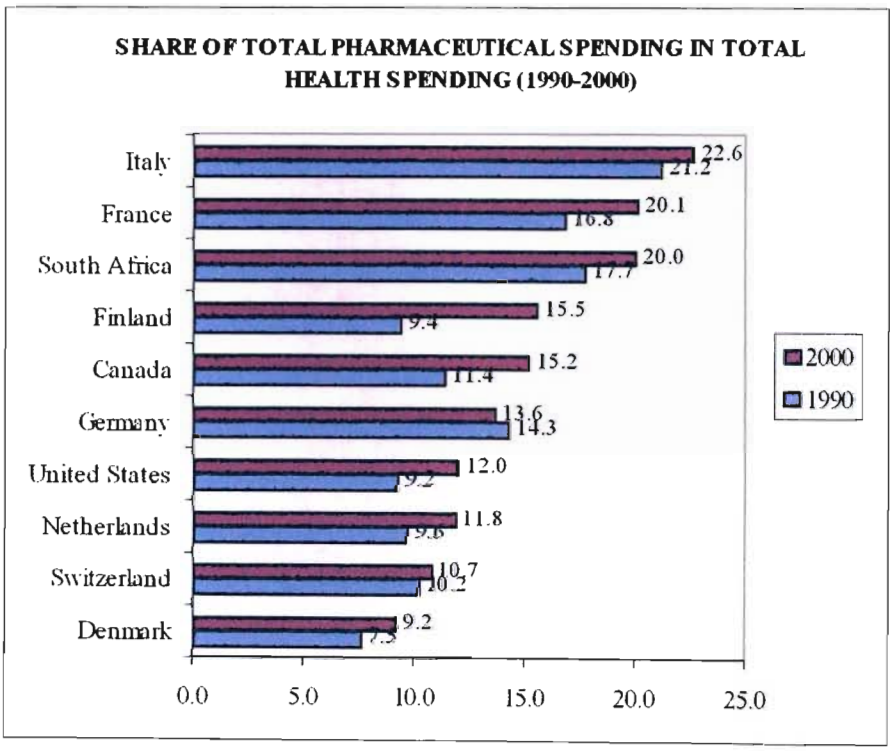

Figure. 3 Source: OECD Health Data 2002; Registrars of Medical Schemes Annual Reports 1990- 2001; IMS Health 2002, cited in PMA (2003).

Notes: (1) OECD figures represent gross expenditures (including all distribution costs).
(2) Figures are estimated by weighting the actual medical schemes spending (including private hospitals) and the estimated State spending by market size. The assumptions were made that private hospitals and dispensing doctors dispensed with zero mark-up and that dispensing, bulk breaking and other State pharmacy activities came to 15% of State expenditure at factory gate level. In calculating the figure for 1990, it was assumed that reimbursement of medicines dispensed through private hospitals came to 4.5% (as observed for the period 1997-2000) of all benefits paid by medical schemes/insurers.

TOTAL MARKET ESTIMATES AT MANUFACTURER SELLING LEVEL

SECTOR	TOTAL (Mil)	PHARMACY RETAIL		PUBLIC	DISPENSING DOCTOR	PRIVATE HOSPITALS
Year	Rands	Ethical	Proprietary			
2000	9 703.69	4 457.83	226.57	2267	1 408.62	1 343.67
%	100.00	45.94	2.33	23.37	14.52	13.85
2001	10 957.26	5126.5	260.55	2448.62	1 549.5	1572.09
%	100.00	46.79	2.38	22.34	14.14	14.35
2002	12 328.77	5 890	291.82	2618.90	1 704.43	1 823.62
%	100.00	47.77	2.37	21.24	13.82	14.79

Table 4: Source: IMS Health 2002, cited in PMA (2003).

The estimated sales of pharmaceutical products at manufacturer selling level for year 2000 to 2002, as divided through various channels, are shown in Table 4. From these estimates, it can be seen that the retail pharmacies were responsible for approximately 50% of the total sale with ethical pharmaceuticals having an approximately 94% share of this. The public sector accounted for about 25%, the dispensing doctors about 14%, and the private hospitals about 15% of the total industry sales of the pharmaceuticals at the manufacturer level.

ETHICAL AND GENERIC PHARMACEUTICALS AS SHARES OF THE TOTAL PRESCRIPTION MARKET

Year	Share of total prescription market by *volume* (%)		Share of total prescription market by *value* (%)	
	Ethical	Generic	Ethical	Generic
1998	52	48	79	21
1999	54	46	81	19
2000	49	51	79	21
2001	55	45	65	35

Table 5: Source: IMS Health 2001-2003, cited in PMA (2003)

Note: The prescription market covers medicines issued on prescription. It comprises of patented products (i.e. referred to as ethical in the table) and multi-source medicines (referred to as generic in the table). Multi-source medicines may be marketed under their generic names or as branded generics.

The share of generics has gradually increased at the expense of ethical pharmaceuticals (Table 5). This is because of forced change in prescribing behaviour of the medical practitioners via the EDLs of state institutions in the public sector and the managed healthcare organisations in the case of the private sector.

Currently, the pharmaceutical industry is facing challenging times with many companies consolidating and adapting to the global economic slowdown and increasing difficulty in achieving product differentiation (Ryan, 2003:15). In South Africa, the industry faces its toughest challenge from the new legislation (Act 59 of 2003) that was promulgated on May 2, 2003. The relevant sections of this legislation will be discussed in chapter 5.

Having discussed the magnitude and the importance of the pharmaceutical industry and the marketplace, the following chapter 4 will specifically focus on the promotion of pharmaceutical drugs.

CHAPTER 4: PROMOTION OF PHARMACEUTICAL DRUGS

> *"The key feature influencing the demand for any individual product is the extent to which the product gains doctor acceptance. This will depend on a large number of factors including the product's therapeutic value (i.e. product quality), the state of art in medicine, and sales promotion undertaken by the manufacturer"*
> (Slatter, 1977: 23).

This chapter looks at the promotion of pharmaceutical drugs and the most common promotional tools used by the pharmaceutical companies. The process of prescribing of pharmaceutical drugs by the medical practitioners and the factors influencing this decision process are also discussed. Greater focus is given to the effects of the pharmaceutical representative's promotional activity on the prescribing behaviour of the general (family) medical practitioners.

The various legislations, regulations, pharmaceutical and advertising industries' own rules and guidelines, World Health Organisation (WHO) guidelines for the ethical promotion of pharmaceutical drugs, and other ethical issues will be discussed in chapter 5.

The fundamental marketing concepts and principles are also applicable to the pharmaceutical industry. The marketing of the over-the-counter (OTC) drugs is similar to the marketing of consumer goods and the marketing of prescription medication shares some common characteristics with the industrial goods and consumer good (Corstjens, 1991: 10). The similarity with consumer goods is due to the fact that the pharmaceutical drugs are often aimed at a large population of consumers and the multiple roles played by the doctor, as a business-buying centre, is similar to industrial goods (Corstjens, 1991: 10). The physician is like an industrial purchasing agent, i.e. the decision on drug therapy is not what to buy, but instead, what to prescribe (Smith, 1975: 63). For the purposes of this study, the focus will be on the promotion rather than on the entire marketing of pharmaceutical drugs.

World Health Organisation's Ethical Criteria for Medicinal Drug Promotion (1988:6) defines pharmaceutical promotion as:

"All informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs."

The pharmaceutical promotion of prescription drugs is designed to influence and create a favourable attitude towards a particular drug. The most important objective being to bring about a behavioural change in the doctor to prescribe the particular drug being promoted. Successful promotion, defined as brand preference or insistence, is as a result of an educational or learning experience that brings about a change in prescribing habit (Koekemoer, 1987: 483).

PHARMACEUTICAL PROMOTIONAL EXPENDITURE

Pharmaceutical promotional expenditure in South Africa, as a percentage of total pharmaceutical sales for the period 1976 – 1980, was 22% (Koekemoer, 1987: 467). According to Corstjens (1991: 224), the promotional expenditure for a typically large pharmaceutical company can be up to 15% to 20% of sales. On average, pharmaceutical companies spend 20% or more of their total sales on promotion (Mansfield, 1997:590).

Before the discussion on the different promotional tools used in pharmaceutical promotion, a brief overview of the prescribing process itself and the motivating factors is presented.

4.1 PRESCRIBING PROCESS

" All people are the same. It's only their habits that are different"
Confucius.

To paraphrase Confucius, all doctors are the same; it's only their prescribing habits that are different.

Mapes (1980: 9) discusses the following models of pharmaceutical drug prescribing process:

1. The Medical model: This is the model most commonly held by the medically trained people. According to such a model, the ill patient consults the doctor, who prescribes

medication(s) following questioning, examination, and making the diagnosis of the illness. The patient then takes the medication(s) in the prescribed manner.

2. The Perceptual model: This model is based upon perception of the doctor, by the patient, as an expert who prescribes in response to an informed diagnosis.

Mapes (1980) argues that there are other diverse factors, which are not related to the models described above that influence the prescribing process. These are, in addition to the medical criteria, factors such as promotional practices of the pharmaceutical companies, colleagues, personality of the prescribing doctor, and the pressures exerted by the patients and society that influence the prescribing behaviour. " The process of prescribing is very much influenced by social systems and structure in which these operates" (Mapes, 1980: 9). That is, the demand pattern for prescription drugs will vary in different countries depending upon the social and cultural differences, and the type of healthcare infrastructures.

Prescribing of medication(s) usually ends the consultation process. When a patient consults a doctor, he/she expects the doctor to do something about his/her problem (in most cases this involves the prescribing of medication). The patients therefore expect some tangible benefits from the doctor's service. At the end of the consultation, the doctor is required to fulfil the patient's expectations of taking the necessary steps to alleviate the patient's symptoms. Generally, the public is becoming more knowledgeable about pharmaceutical drugs and diseases, which in turn have increased their expectations of the treatment by their doctors (Reekie and Weber, 1979: 42).

Commonly the patient starts the consultation process by communicating the troublesome symptoms. The doctor typically uses a problem solving approach to arrive at a diagnosis. The doctor than decides on the appropriate therapeutic alternatives. The doctor decides whether to prescribe or not. If the choice is yes, then a further decision is made concerning the selection of the pharmaceutical drug. The factors considered with respect to the selection of the pharmaceutical drug are: the efficacy of the drug, safety of the drug (therapeutic risk), cost of the drug versus (vs.) the affordability of the patient, ethical vs. generic drug, and the doctor's personal experience with the considered alternatives. The various personal factors such as the mental state of the doctor at that time and the marketing of the pharmaceutical drug further influence this typical selection process.

The efficacy, safety, and cost of the available alternative pharmaceutical drugs will depend upon the doctor's personal knowledge about them. The doctor's sources of pharmaceutical information will be discussed later. The effectiveness and the safety of the selected drug are also reliant upon the adherence of the patient to take the medication in the prescribed manner. The practitioner is concerned about his choice of therapeutic drug, as failure of therapy to alleviate the patient's symptoms may result in the patient's loss of confidence in the doctor's capabilities and may well hurt the doctor's reputation. As a consequence of failure, the doctor may not only lose that particular patient from the private practice, but may also potentially lose other patients through the 'word-of mouth' from that patient.

"The reasons for selecting a specific drug or a specific brand are even more complex and less understood" (Mapes, 1980: 21). The medical practitioners' decisions are often the result of a mixture of rational and emotional motivations (Smith, 1975: 66).

The doctor's motivating factors for prescribing are generally a mixture of models of economic man, cognitive man and emotional man discussed in chapter 2, i.e. in terms of rational, problem-solving approach and emotional factors. The problem solving approach consists of history taking, examination, investigation (where necessary), diagnosis and choice of therapy (including whether to prescribe or not to prescribe). This is same as the *Medical model* discussed above. This is influenced by the doctor's own emotions and the emotional appeals of pharmaceutical promotion (Mapes, 1980: 23). The behaviour of the decision-maker can also be classified into rational and emotional (Smith, 1975: 63). The rational decision-maker evaluates all alternatives with respect to his/ her ability to fulfil the therapeutic needs, whilst an emotional decision-maker is swayed by the product attributes or promotion of the product that have nothing to do with the actual need-satisfying property of the product (Smith, 1975: 63). Corstjens' (1991: 220) views support Mapes and Smith in stating, "for some product categories the prescription decision is based upon rational arguments, whereas for some other product categories less rational approaches (e.g. company and product loyalty, impact of the product on the patient's self image, habit) are prevalent." Thus, although the doctor's decision-making is largely rational (based on objective assessment of presenting symptoms and signs), there are factors that let a measure of emotion to influence his/her decision.

4.2 SOURCES OF INFORMATION:

> *"It is naive to think that all doctors will be continually up to date from other sources of information; most will admit to a pile of unread journals. It is also naive to think that good drugs will automatically sell themselves; they need promoting"* Stephen (1999).

The medical practitioners require both objective information on the particular drug itself and comparative information on the alternatives in order to make the final prescribing decision. However in reality it is difficult, if not nearly impossible, for the doctors to have comprehensive information on all available drugs.

In South Africa, the medical practitioners have recourse to textbooks such as South African Medical Formulary and MIMS for product specific information. These textbooks contain information on the indications, pharmacokinetics, dosage and direction for use, adverse effects, warnings, special precautions, contraindications, and drug interactions of the various drugs and are broadly classified under therapeutic classes. These books however are updated annually and do not provide comparative information.

It is the pharmaceutical companies, and not the doctors, that have complete information on their drugs. Thus, the educational activities carried out by the pharmaceutical representatives, as a component of promotional practices of the pharmaceutical companies, are major sources of information of various drugs for the medical practitioners. This is especially important in the case of the new drugs. Initially, only the manufacturing companies have clinical studies on the efficacy, safety, and adverse effects and so forth concerning the new drug. The pharmaceutical representatives play a critical role in conveying these finding to the medical practitioners. Traditionally, the pharmaceutical reps are viewed as the most important source of information about a new drug (MacLean, 2001; Reekie and Weber, 1979: 120).

The medical practitioners possess the initial pharmaceutical information from their medical training, which is thereafter supplemented by other sources. The supplementary sources of drug information are textbooks, medical journals, lectures and medical meetings sponsored by the drug companies, educational updates carried out by professional institutions such as medical schools, specialists, and the pharmaceutical representatives.

Wilson *et al* (1963) looked at "Influence of different sources of therapeutic information on prescribing by general practitioners." Their study revealed the following sources of drug information: 32 percent of the information from the doctors' medical training; 28 percent of the information from the pharmaceutical companies; and the remaining 40 percent from the miscellaneous sources of textbooks, journals and specialists. The study also showed that the more recently qualified general practitioners were less dependent upon the pharmaceutical companies for their information. Jones, *et al* (2001) found that there was a difference in the reasons for introducing new drugs in the disease management armamentarium by the general practitioners and the specialists. The specialist relied more on the scientific evidence and the critical appraisal of the literature, whilst the general practitioners were more influenced by the pharmaceutical promotion and the specialists.

4.3 FACTORS INFLUENCING THE CHOICE OF PRESCRIPTION DRUG

> *"When a young physician starts, he knows twenty drugs for one disease. An experienced physician knows one drug for twenty diseases"* Unknown.

The following are some of the factors that may influence the medical practitioner's choice of prescription drug. These factors have been identified based upon the researcher's personal experience as a general practitioner and from the researcher's discussions with the colleagues. The discussion and explanations of each factor are also based upon the latter. The factors are:

- The efficacy of the drug,
- The safety profile of the drug (i.e. potential adverse effects versus benefit),
- The ease of administration (i.e. directions for use and its appeal to both prescribing doctor and the patient,
- The price of the drug and the affordability of the patient,
- Ethical versus generic drug,
- Presence/absence of restrictions from a third party such as medical aid scheme (managed health care organisations),
- Whether or not the patient demands a particular brand of drug based on the patient's knowledge and previous experience with the drug,
- The prescriber's knowledge and previous experience with the drug,

- The prescriber's personal judgment of the manufacturer and the degree of faith in the manufacturer,
- Whether the drug is recommended by the specialist consultant for management of similar conditions,
- Discussions with colleagues, and
- Promotional practices of the pharmaceutical companies.

The factors relating to the efficacy, safety, and dosage convenience of the drug are the most important considerations. The prescribing doctor is more likely to choose the drug whose efficacy and safety profile is superior to the alternatives under deliberation. The doctor is also more likely to select the dosage regime that will result in greater compliance with the directions for use, rather than risk non-compliance.

The price of the drug is also an important consideration in the choice of prescription drug. The cost of the prescription drug and the patient's affordability are self-explanatory from the patient's viewpoint. The issues of ethical versus generic drugs, the inclusion or exclusion of the prescription drugs from the managed health care organisation's EDL, and the new legislation are also closely linked to the price factor. Generic drugs are cheaper than the ethical drugs as the company manufacturing the generic drug did not incur any research and development costs. The managed health care organisations are increasingly insisting on only paying for generic drugs, where available. If the patient insists on the ethical drug when a cheaper generic is available, then he/she is expected to pay the difference in cost not covered by the managed health care organisation. The mandatory generic substitution stipulated by the new legislation will be discussed in chapter 5.

The patients may also view their medical practitioners more favourably, if they display added awareness and empathy in considering the patient's financial situation and the rules of their managed healthcare organisations when choosing among prescription drugs of similar efficacy for their ailments (Gonul *et al*, 2001: 80). The patient can interpret this consideration of their price-sensitivity as a tangible indicator of the care rendered by the doctor and can further enhance the doctor-patient relationship (Gonul *et al*, 2001: 80).

The advances in telecommunication and increased coverage of health related matters in general mass media have raised the awareness and the knowledge of the members of the

public with respect to diseases and their therapy. Kotler and Clarke (1987) comment that the fundamental doctor-patient relationship has changed with consumerism entering the health care field. As a result, many patients today request a specific prescription drug instead of allowing the doctor to choose from the available alternatives. The medical practitioner is more likely to choose a particular drug when he/she has greater knowledge of the drug compared to the alternatives and has experienced better responses to the drug in patients when compared to the alternatives. The drug chosen by the specialist consultant (opinion leader), to whom the patient was referred by the general practitioner, is more likely to be chosen by the general practitioner when encountering a similar illness in other patients.

A study by Bauer (1964), cited in Mapes (1980: 21), showed that there is a strong relationship between the doctor's preference for a company and the preference for a drug manufactured by that company and that such a preference may even predispose the doctor to an early trial of a new drug introduced by the said company. The study also found that as the therapeutic risk of adverse events increased, the doctors preferred professional sources of drug information rather than the pharmaceutical company. Corstjens (1991: 73) found that "the *'halo'* effect can severely bias product perceptions. For example, the perception of Pfizer drug is strongly influenced by the overall image of Pfizer in addition to the technical profile of the product itself."

In addition, according to Bauer's study, when it came to the adoption of a new drug, medical practitioners who interact through professional discussions and advice networks appeared to influence each other (Smith, 1975: 70).

Wysong (1998) carried out a study of resident physicians in family practice and general internal medicine at West Virginia University (Chicago), to determine the effect of the amount of time spent with the drug representatives, what the doctors believed their prescribing practices were, and what they actually prescribed. Wysong's research showed that "the more time the doctors spend with the drug representatives, the more likely they are to prescribe the newer, more expensive drugs. Yet the doctors seem to believe their prescribing habits are not influenced by drug company representatives."

Gonul *et al* (2001: 79-90) investigated whether and how pricing and promotional activities influence prescribing behaviour of 157 physicians in USA for the period of four years from January 1991 to December 1994. Their findings were that:

- Physicians tended to favour certain brands differently in the absence of external factors such as price and promotion. However, the authors were unable to determine the factors responsible for the dissimilar brand preferences.
- Physicians appeared to be less price-sensitive for health maintenance organisations (HMOs) patients than for private insurance patients. The authors believe this surprising finding was as a result of: (i) physicians being restricted by HMO's drug formularies, (ii) HMO patients paid nothing or little towards the cost of the drug, and (iii) the existence of great variability in private insurance plans' extent of drug coverage. The physicians' price-sensitivity came second to considerations about drug efficacy and the gravity of patient's illness.
- Detailing and samples have a mostly informative effect on the physicians. Excessive detailing and samples can result in adverse outcome for the pharmaceutical company. They attributed the adverse outcome to "frustration caused by waste of time, fatigue with promotion, or perception that the drug manufacturer is too desperate or too aggressive."

Srivastava's (2003) research of reasons for better acceptance of pharmaceutical drugs by the doctors, found the following top four factors in 2002, listed according to their ranking:

1. Better Efficacy,
2. Regular reminder by medical representatives,
3. Economical, and
4. Tolerability.

In addition, Srivastava's (2003) research also revealed that brand recall is improved by the following activities (listed according to their ranking):

1. Repeat visits by medical reps
2. Gift, samples etc.
3. Clinical meetings
4. Post marketing trials
5. Direct mailings

4.4 PHARMACEUTICAL PROMOTIONAL TOOLS

As discussed earlier, the promotion of pharmaceutical prescription drugs is different from other industries in that the product is not promoted directly to the public but to the medical practitioners. The following list shows the various promotional tools used by the pharmaceutical companies for this purpose. It is also important to bear in mind that the various forms of promotion support and complement each other.

1. Personal selling: Pharmaceutical representatives who visit medical practitioners.
2. Advertising:
   2.1. Advertising in medical journals and medical chronicles (newspapers).
   2.2. Direct mail advertising to targeted medical practitioners.
   2.3. Direct-to-consumer advertising. Corporate advertising in national periodicals and television.
   2.4. Product advertising objects such as pens, writing pads, and other non-medical objects bearing the product name.
   2.5. Advertising handouts left with the doctor at the end of the personal presentations.
   2.6. Product advertising banners and posters at CME meetings and medical conferences.
3. Sales promotion: provision of drug samples, competitions for doctors, and gifts for doctors.
4. Publicity: Media articles on certain innovative drugs such as Viagra (anti-Impotence drug).
5. Public relations: includes sponsorships of CME meeting, company sponsored workshops and seminars, and professional services.

The promotional activity of personal selling will be described and discussed in detail whilst the remaining promotional activities will be discussed briefly.

4.4.1 PERSONAL SELLING: PHARMACEUTICAL REPRESENTATIVE

The pharmaceutical sales representatives are also known as *detailers, detail men, drug reps, and sales reps.* According to Koekmoer (1987) the basic objectives of the sales reps are to change the prescribing doctor's attitude to the pharmaceutical drug being promoted or to reinforce the existing favourable attitude. "The medical representative is to the ethical product what television and radio are to the consumer product" (Koekemoer, 1987: 467). " Given the nature of pharmaceutical products, personal communication with prescribers is a key success factor in the industry" (Corstjens, 1991: 218). Corstjens (1991) further states that together with the quality of the pharmaceutical drugs, the strength of the pharmaceutical company's sales force is the most critical factor for successful product penetration and profitability. Personal selling allows the pharmaceutical representative to vary the content of the message to different doctors as compared to the preset message conveyed by other promotional tools.

GENERAL DESCRIPTION OF THE PERSONAL SELLING (DETAILING) PROCESS BY THE PHARMACEUTICAL REPRESENTATIVE

The following description is based upon the researcher's personal encounters with the pharmaceutical representatives from 1995 to date of this research report. The personal selling activity consists of the pharmaceutical representatives (sales reps) visiting the doctors either by appointment or as a walk-in basis without an appointment. In some instances, the doctor's receptionist acts as a 'gate-keeper' controlling the access of the pharmaceutical reps to the doctor.

The actual process itself generally begins with the sales rep introducing him/her self and the company that they represent. This is followed by requesting for permission to 'detail' the medical practitioner. Most commonly, the scientific information (existing and/or new) and/or the doctor's own experiences with the drug are discussed. The sales rep would often try to establish the level of doctor's interest in a particular disease or the number of patients with the particular disease consulting the doctor (for which the sales rep's drug is a therapeutic alternative) and the current therapeutic agents favoured by the practitioner. Next, the sales rep may try to establish the reasons behind the practitioner's choice of a therapeutic drug. If the drug of choice mentioned represents the sales rep's drug, then the remainder of the time is spent on reinforcing the benefits of using the drug and closing by requesting the practitioner's commitment to continue the usage of the drug. However, if the drug being promoted is not the

practitioner's drug of choice, then the sales rep will try to establish the reason(s) thereof. The sales rep presenting 'evidence' as to why his/her drug should be the first choice for a particular disease generally follows this.

Many sales reps do not attempt to find out the doctor's preferences, but rather get on directly with the presentation with the hope of persuading the doctor to use their drugs when an opportunity arises. The process would end by the sales rep trying to get commitment from the practitioner to prescribe the drug being promoted. Most sales reps require the doctor to sign a register confirming the sale rep's visit to the doctor. Recently some pharmaceutical companies have provided their sales force with hand-held computers (palmtops) that capture electronic signature from the doctor. Finally, the medical practitioner and the practice receptionist are thanked for their time.

During the detailing process, the sales reps use various detail-aids showing the superior benefits, and or greater efficacy, and or improved cost effectiveness, and or better safety of their drug as compared to the competitors' products, i.e. the sales reps emphasize the USPs. This is done via quoting data from either independent studies or company-sponsored clinical trials. The pertinent clinical data is presented in large graphical formats (usually bar charts). There is strong emphasis on visual differences (in percentages) of the particular aspects under discussion concerning the drug being promoted and the industry leader or the competitor. The detail-aids themselves can vary from a simple pamphlet to sophisticated presentation on Digital Video Disc (DVD) player. Some reps may even casually remark to the practitioner that their drug is the preferred drug of choice by the local specialist or a regionally/nationally known specialist in the field.

At the conclusion of the process, some sales reps may leave behind with the practitioner written material such as a journal article or a small product-advertising gift (e.g. a ball-point pen inscribed with the product name) or an advertising pamphlet/leaflet. Prior to the recent change in regulation governing promotion of pharmaceutical drugs in South Africa, it was a common practice to leave behind a sample of the drug (sampling) with the practitioner. The sales rep may also use this time to invite the doctor to other drug promotion events or sponsored medical symposia.

Based upon the researcher's experience in a general medical practice, where the sales reps visit on walk-in basis, and from the researcher's interviews of the sales reps, on average the sales reps take approximately five to ten minutes for the detailing process. The duration of the process varies depending upon the number of patients still waiting to be seen by the practitioner, the degree of involvement in the process by the practitioner, and the established level of relationship between the rep and the practitioner.

The researcher's personal interviews with the sales reps and their sales managers revealed that most sales reps classify the family medical practitioners into three categories based on the estimated numbers of patients seen by the doctors on a daily basis. The estimations are based on the information from the doctors' receptionists where available, through the sales reps' personal observations whilst waiting to see the doctor, and through discussions with other sales reps calling on the same doctors. Doctors in category 'A' see forty or more patients per day, category 'B' doctors see between twenty five to forty patients per day, and category 'C' doctors see less than twenty five patients per day. The sales reps generally target about forty doctors, in his/her given territory, to *'detail'* on average once every six weeks. Each sales rep is given the freedom to determine his/her own target segment of doctors. The list of targeted doctors is reviewed on quarterly basis together with the sales manager.

The sales reps objectives are to target both the high/frequent and low/infrequent prescribers in the particular product category. High/frequent prescribers are those doctors who prescribe greater number of pharmaceutical drugs per day than their colleagues in the area. The sales reps' task at hand is to support and reassure the frequent prescribers of their drug choice and try and covert the infrequent prescribers into frequent prescribers.

Some of the other methods of segmenting doctors for targeting are: according to their price-sensitivity, loyal versus non-loyal prescribers, use occasions or situations, and in terms of the benefits sought by the doctor populations (Corstjens, 1991: 53).

According to a UK market research company, Taylor-Nelson, six types of doctors can be distinguished based on life-style criteria (Costjens, 1991:54-55). They are:

1. *Disillusioned*: Doctors that pursued medical profession for idealistic reasons, but have now become disillusioned. They tend to disapprove of existing drugs and look upon new drugs as contributing towards the patient's health.
2. *Overstretched*: These doctors are more demotivated than the *disillusioned* group due to being overworked. They do not have the time to absorb detailed scientific information, instead preferring concise presentations. They tend to be above average prescribers of existing drugs.
3. *Postgraduates*: They prefer formal sources of education such as medical journals and postgraduate courses. They do not readily adopt new drugs and prefer generics.
4. *Experimentalists*: They consider pharmaceutical industry as a source of information and are confident in trying new drugs.
5. *Progressive*: These are broad-minded doctors who prefer clinical-trials as a source of drug information.
6. *Self-satisfied*: These are successful doctors who have become complacent and do not see the need for further education. They are self-satisfied and do not readily see pharmaceutical reps.

A telephonic interview with Mr Baron Tanner (2003) of Innovex, a company specializing in training of pharmaceutical reps and outsourcing of the sales reps to pharmaceutical companies, revealed another segmentation approach used by the pharmaceutical reps. The sales reps are taught to profile the doctors based upon the qualitative personal assessment of the doctors' consulting rooms and staff, types of patients seen by the doctors, and the mannerism and conversation style of the doctors. Based upon this profile, the doctors are classified into four personality types. They are (1) Driver, (2) Analytic, (3) Expressive, and (4) Amiable. The *'driver'* and the *'analytic'* types generally require scientific and clinical data as proof of the drug's alleged superiority to the competitors. The *'expressive'* and the *'amiable'* types are more friendly and people orientated, and value personal relationships as, if not more, important as the scientific data. It was also felt that from the sales rep's point of view, the *'amiable'* type was often the worst doctor to call on, as he was least likely to prescribe your drug often enough, although appearing amiable during the detailing process. The sales reps are also taught to analyse their own personality type and adapt to the personality type of the doctor during their detailing process.

During the sales reps' training, most are taught to follow the "IDEALS" principle in their detailing of doctors (Tanner, 2003). "IDEALS" stands for:

- Identify the disease area.
- Discover the doctor's needs.
- Explain how the product suits the doctor's needs.
- Ask for commitment to use the product.
- Leave behind – for example free sample and product reminders.
- Setting up next meeting.

The sales rep's effectiveness is most commonly evaluated based on the sale of the company's drug in the sale territory serviced by the sales rep. The pharmaceutical companies purchase this information from various organisations such as IMS Health (SA) and Territory Management Systems (TMS). These organisations in turn compile the sales information based upon the information from the pharmaceutical wholesalers, prescription data from the pharmacies and medical aid schemes, and from the electronic data interchange (EDI) service providers for doctors utilising electronic claim submissions to healthcare funders. The IMS report (appendix II) shows the total sales of a particular class of prescription drugs in each region, the market shares of the company's drug and its competitors in the region, and the comparative sales figure for month to date and year to date. The report from TMS (appendix II) provides the "Monthly Call and Penetration Analysis". This report is compiled from the call-registers signed by the doctors at the end of the presentation by the pharmaceutical representatives. The TMS report provides a measure of the sales rep's 'productivity rate' and 'doctor call rate' according to the different categories (A, B, and C) of the doctors as discussed previously. These reports allows the sales team to assess the relative growth or decline of the company's product per region and take appropriate action based on the information.

Other propriety reports purchased by the pharmaceutical companies include *GP Monitor®* from Battaerd Mansley (SA) Pty Company (Hallow, 2003). The company supplies propriety diaries to approximately 200 general practitioners (GPs) in South Africa. The participating GPs, based on their experience, complete the assessment forms following an encounter with a pharmaceutical rep. The diaries are returned to Battaerd Mansley, on a monthly basis, in the self-addressed envelopes provided. The *GP Monitor®* evaluates the pharmaceutical representative's presentation and provides (amongst other) information on the doctors'

perception of the usefulness of the sales rep's presentation, sales rep's expertise, communication styles, time spent with the doctor, the specific issues discussed in the presentations, and if and how the presentation influenced the doctor's prescribing of the particular drug discussed during the detailing process.

Lidstone and Colliers (1987: 107-108) describe four types of visits made by the pharmaceutical reps:

1. *Product introduction visit*. The sales rep generally makes use of a structured presentation to make the doctor aware of a new drug (product) during this visit.
2. *Persuasion visit*. On this visit, the sales rep's objective is to overcome the resistance to prescribe the company's drug by a doctor who is aware of the drug but has low motivation to prescribe it.
3. *Support visit*. The purpose of this visit is to reinforce and encourage more use of the company's drug by using positive motivating factors.
4. *Cultivation visit*. The doctor is a regular prescriber of the company's drug by now and the sales rep's objective is to exploit new references by discussing new clinical trials with the drug.

Based on their findings, Gonul *et al* (2001) recommend that the scope of personal selling be more carefully scheduled in terms of frequency of sales calls on physicians and the length of the detailing visits.

MacLean (2001: 1) comments, "no single source of prescribing information exceeds the rep's influence on the prescribing of GPs."

4.4.2 ADVERTISING OF PHARMACEUTICAL DRUGS

As discussed previously, the atypical nature of marketing of pharmaceutical drugs restricts the manner and the channels chosen to advertise. The various regulations and restrictions, be discussed in chapter 5, disallow direct communication with the consumers. Therefore, common mass advertising mediums such as television, radio, magazines and newspapers (local and national); with the exception of corporate advertising; cannot be used for branded product advertising.

The advertising channels most commonly used are: medical journals and newspapers, direct mail, medical conferences and sponsored meetings, non-medical promotional objects (objects such as pens and note pads bearing product name), and wall posters and leaflets or brochures left with the doctors. The amount of information that can be provided via these channels is limited compared to personal selling. Most advertisements are thus intended to create brand awareness and convey the key properties/unique selling point(s) of the drug.

Advertising in medical journals and newspapers is used to establish and enhance the reputation of the pharmaceutical company and its products (Slatter, 1977: 34). Although it can reach many doctors rapidly and at a relatively low cost, its effectiveness is questionable (Slatter, 1977: 34). According to Tunmer (1989) there are about 30 local medical publication carrying pharmaceutical adverts.

Surveys of advertisement (ad) recall and awareness, as advertising campaign evaluations, consistently produced the following results: 40% of readers *notice* the ad, 35% of readers *remember* the ad, 10% *read part* of the ad, and 5% *read all* of the ad (Lidstone and Collier, 1987: 105).

Lidstone and Collier (1987: 96) further contend that advertising campaigns can not increase the sale of the pharmaceutical drugs since "in the health-care market the effects of advertising stops at the point where the target audience is receptive but requires the personal interface to be tempted to trial." According to them the advertising campaigns can create a favourable climate for the pharmaceutical reps and can help maintain usage of the drug where the doctor requires reassurance.

The survey carried out by Pitt and Nel (1988) found the advertisements in medical journals, objects bearing product name, and direct mail advertising to have less influence on the doctors' prescribing decisions than visits by pharmaceutical representatives and seminars/conferences/lectures arranged by the pharmaceutical companies.

Professor Henry, in an editorial of September 2002 issue of The Medical Journal of Australia comments that "doctors are 'powerfully' influenced by advertisements, even to the point of prescribing a new drug that offers no advantage over existing treatments" (Salleh, 2002).

Recently in South Africa, some of the pharmaceutical companies have started using direct-to-consumer corporate advertising. This is because currently the advertising of prescription only medication directly to the public is prohibited by regulations. Generally, this advert is of an informative nature. It focuses on a particular disease (e.g. obesity, erectile dysfunction) and informs the public that there is new/improved treatment available, and that the public should enquire about this new treatment from their doctor. The actual brand of the drug is not mentioned in the advert, however the advert generally bears the manufacturing pharmaceutical company's logo and name. This type of corporate advertising increases public awareness about a particular disease and informs the public that a treatment is available. The mass media of television, radio, magazines, and the national newspapers have been used.

Although the main emphasis in pharmaceutical promotion is on the product (brand) positioning, corporate positioning also plays an important role (Corstjens, 1991:70). The favourable company image created by corporate advertising develops credibility and trust, and helps to reduce risks associated with prescribing pharmaceutical drugs (Corstjens, 1991:70). Thomson (2001) reports that in 1999, $1.8-billion was spent on direct-to-consumer advertising in USA and that many of the big pharmaceutical companies were increasingly allocating greater amount of their promotion budget to advertising direct-to-consumers rather than professional promotion. Petroshius *et al* (1995), in their research of USA physicians' attitudes to direct-to-consumer advertising of prescription drugs, found the USA physicians to generally support direct-to-consumer advertising.

The regulations prohibiting direct advertising to consumers is difficult and impractical to apply to the Internet. US legislation allows direct-to-consumer advertising of branded prescription drugs and access to US prescription drug websites and the ability to purchase on-line, is available from anywhere in the world, including countries where direct-to-consumer advertising is illegal (Reast and Carson, 2000: 398).

Currently there are no studies into the effect of corporate advertising on the medical practitioner's prescribing behaviour in South Africa.

4.4.3 SALES PROMOTION OF PHARMACEUTICAL DRUGS

The sales promotion includes activities such as provision of drug sample, competitions for doctors and gifts for doctors.

Lidstone and Collier (1987: 109) advocate the use of sales promotion for a pharmaceutical drug in the following situations where there is:

- Poor usage by doctors.
- Poor repeat usage.
- Inability of the field force to sell in.
- Short-term switching and not sustained brand loyalty.
- Higher expenditure by the competitor.

Smith (1975: 329) states that the use of prescription drug samples for pharmaceutical promotion has been highly controversial. The issues of concern are the inadequate control of the sample distribution, fraudulent sale of the sample by the doctor and the pharmacist to the patient, and the possibility of the doctors feeling the need to reciprocate this gesture from the pharmaceutical companies in the form of excessive or inappropriate prescribing.

Sampling (activity of leaving with the GP a small quantity of the drug to initiate a trial use) is also associated with increased awareness, preference and rapid prescribing of a new drug, in addition to promoting a positive attitude towards the pharmaceutical rep (MacLean, 2001:3). "Drug sampling continues to play a significant role in physicians' prescribing decisions, more than advertising or other promotional techniques" (IMS Health, 2002, paragraph 4). The recent changes in the South African legislations (to be discussed in chapter 5) that came into effect on 2nd May 2003 now prohibit drug sampling.

According to USA studies quoted in MacLean (2001:3), as many as 70 % of the physicians' prescribing could be compromised by accepting gifts and that receiving gifts of high relevance to the practice resulted in positive attitude towards the promoted drug.

4.4.4 PUBLICITY

More commonly, publicity (i.e. not paid for by the pharmaceutical company) in mass media such as television, newspaper, and magazines is associated with certain innovative drugs that happen to be the first such drug in its class (e.g. *Viagra*™ for treatment of impotence). Other occasions when a drug may receive, publicity is if it is mentioned in health related topics in various mass media. Discussions, advice and the promotion of health related topics are increasingly becoming regular features in mass media. The publicity can be favourable or unfavourable towards the drug and the pharmaceutical company has no control over it except by means of a reaction following the occurrence of the publicity event.

4.4.5 PUBLIC RELATIONS

Public relations includes sponsorships of Continuing Medical Education (CME) meetings, company sponsored workshops and seminars, and professional services. Since 1999, it is compulsory for the medical practitioners to participate in CME and Continuing Professional Development (CPD) activities for their continued registration with the Health Professions Council of South Africa (HPCSA). The CME/CPD activities includes for example, answering and submitting questionnaires in medical journals, attending CME/CPD lectures, conferences, workshops, and attending clinical rounds at a hospital. Each accredited activity has certain CPD-points associated with it. The medical practitioner has to earn a minimum of fifty CPD points per year. Maximums of seventy-five CPD points are allowed to be credited to the practitioner per year.

A significant number of CME/CPD lectures/conferences/workshops/symposia are arranged and or sponsored by the pharmaceutical companies. This sponsorship generally includes hospitality at the venue such as meals and beverages for the doctors. The vast majority of the sponsored meetings tend to be 100 percent covered by the pharmaceutical companies, i.e. the attending doctors do not pay any fees towards the cost of the meeting and the associated hospitality. The sponsorship may also allow the sponsoring pharmaceutical company to influence the choice of speaker(s), the topic(s) for discussion, and in certain cases the content of the topic(s). The pharmaceutical companies will obviously choose the speaker, and/or the topic, and/or the content that conveys a favourable viewpoint/position of their drugs. The

sponsorship of such events is designed to promote goodwill amongst the attending doctors towards the company and by extension its products.

From the researcher's personal experiences, it has been noted that in most situations, where the pharmaceutical company is the sponsor, the speaker highlights the company's product by its brand name or explicitly mentions that the sponsoring company manufactures the drug to treat the ailment under discussion. Many speakers also report favourable use/experience of that particular product (drug). Although it is against the governing regulations to mention any drug by its brand name during the lecture/talk by the speaker, several speakers tend to overlook this regulation. Since the speaker is invariably a well-known and or locally practising specialist consultant ("opinion leader"), the positive reference to the drug during the talk tends to come across as a recommendation to the attending general medical practitioners to begin or increase the use of the drug.

Many pharmaceutical companies also provide professional services such as counselling of patients, use of certain diagnostic equipment such as ambulatory blood pressure monitoring device, and patient education/support programmes.

These activities allow the pharmaceutical representatives to further build/strengthen their working relationships with the attending doctors as well as seek to evoke the feeling of obligation in the attending doctors.

4.5 EFFECTIVENESS OF PHARMACEUTICAL PROMOTION

This section looks at the results of various local research studies into the effectiveness of the various pharmaceutical promotional factors and their relative influence on the doctors' prescribing habits.

SOUTH AFRICA: COMMUNICATION ACTIVITIES IN DESCENDING ORDER OF IMPORTANCE AS THEY AFFECT THE DOCTOR IN HIS PRACTICE

	COMMUNICATION ACTIVITIES	MEAN SCORE OUT OF 15
1	Medical journals	11.06
2	Continuing medical education lectures	10,71
3	Medical association organised congresses	9.65
4	Reference works	9.20
5	Company organised seminars	9.19
6	Medical representatives	9.19
7	Medical newspapers	7.99
8	Samples	7.71
9	Company organised social functions	7.22
10	Detailing aids	6.79
11	Product advertising pieces	6.68
12	Medical exhibition	6.56
13	Pharmaceutical company home journals	6.18
14	Product related give-aways	6.18
15	Direct mail	5.76

Table 6. Source: Marplan Pharmaceutical Communication Study, March 1981, as cited in Koekemoer (1987: 466)

The Marplan Pharmaceutical Communication Study (Koekemoer, 1987:466) researched the relative importance of the various communication activities on the medical practitioner's practice. Its findings of the relative influence of the various pharmaceutical communication activities on the prescribing behaviour of the doctors are shown in Table 6 above.

Pitt and Nel (1988), in their research study of 210 general practitioners in South Africa, found the following as the factors, according to their perceived influence on the doctors' product prescription decisions (in descending order of importance according to their mean scores), as per Table 7 below:

FACTORS INFLUENCING PRODUCT PRESCRIPTION DECISIONS

Rank	Factors
1	Personal experience with the drug.
2	Recommendations made by colleagues in informal discussions.
3	Sales calls made by pharmaceutical representatives.
4	Seminars, conferences, lectures organised by pharmaceutical companies.
5	Advertisements in journals and magazines.
6	Sales promotional material received from pharmaceutical companies, such as small samples, calendars, diaries, and note pads.
7	Direct mail advertising.

Table 7 Source: Pitt and Nel (1988)

Pitt and Nel (1988), based upon their findings, were unable to comment "with any statistical certainty that advertisements in medical journals and magazines are more influential than sales promotional materials received from pharmaceutical companies." Based on their findings they concluded that the leading two factors that exerted the most influence were not directly controllable by the pharmaceutical companies' marketing strategies. When they considered the promotional tools used by the pharmaceutical companies, they found the pharmaceutical representatives to have the most influence on the general practitioners' prescribing habits, followed by the lectures arranged by the pharmaceutical companies.

Friedman (1991) researched "Factors influencing general practitioners in their choice of prescription drugs." Friedman had based his findings on a random sample of 28 dispensing and 29 non-dispensing general practitioners in Northern Johannesburg area. The study included a section on assessment of the knowledge and use of the drug *Diazepam* (best known by its original brand name of *Valium*®). He found that the most important influence on the general practitioner's choice of prescription drug was their preference for a brand name with which they were familiar. The second most important influence was specialist's advice followed by information gained at medical meetings/symposia in third place. Visit (detailing) by the pharmaceutical rep, advertisements in medical journals, and publicity were found to be a distant 10^{th}, 11^{th} and 12^{th} respectively as sources of influence, according to the mean rating of the various influential factors (Friedman, 1991:73).

Gillingham (1995) researched the "Prescriber evaluation of prescription pharmaceuticals and associated services". She also used a random sample of 60 private medical practitioners in Northern Johannesburg area of South Africa.

Gillingham (1995:62) demonstrated that positive experience with the drug increased the confidence of the doctor in prescribing the drug again and that personal endorsement by opinion leaders had greater credibility than advertising. The study also identified that the pharmaceutical marketers had a definite role to play in continued medical education activities, and the general practitioners rated the products of research based companies (ethical drugs) more satisfactory than generic drugs.

From the preceding discussion in this chapter, it is evident that there are many factors influencing the doctor's prescribing behaviour. The promotional tools used by the pharmaceutical companies to influence this prescribing behaviour were discussed in detail. Finally, the perceived effectiveness of the promotional tools was discussed. The primary research carried out will evaluate the perceived influence of the promotional factors discussed as well as theoretical attributes of personal selling discussed in chapter 2. The following chapter 5, looks at the important regulations and ethical issues giving the promotion of prescription drugs its unique character.

CHAPTER 5: LEGISLATIONS AND ETHICS

This chapter looks at the influence of the policies of various government and regulatory bodies on the promotion of pharmaceutical drugs and briefly examines the ethical issues of pharmaceutical promotion.

5.1 LEGISLATIONS INFLUENCING PHARMACEUTICAL PROMOTION

"In nearly every country throughout the world, governments have legislated to curb and control pharmaceutical companies' profits, prices and promotional activities" (Lidstone and Collier, 1987: xiii). Reekie and Weber (1979: 63) comment that the main focus of legislations in the developing world is directed towards (1) raising the standards of drug safety and efficacy, and (2) reducing prices.

Due to the potential health and ethical risks associated with pharmaceutical drugs, the pharmaceutical industry is one of the most heavily regulated and controlled industries. These regulations vary from country to country, are frequently being revised, and reviewed depending upon the governing political parties and public opinions in the country.

In South Africa, the Medicine Control Council (MCC) controls market entry of new pharmaceutical drugs. All medicines sold in South Africa must be registered by or listed with the MCC. Only the drugs that have achieved the required registration with the MCC can be prescribed or be available to the consumers for use. The MCC looks at the efficacy, safety, and the quality of the drug amongst many other issues, in deciding whether to approve registration of a drug or not.

CODE OF PRACTICE RELATING TO THE MARKETING OF MEDICINES IN SOUTH AFRICA

The Pharmaceutical Manufacturers Association (PMA) has published the Code of Practice for the Marketing of Medicines in South Africa (the Code). The Code incorporates guidelines from the World Health Organisation (WHO) and the Advertising Standards Authority (ASA) (Meakings, 1999). The objective of the Code as stated in the introduction, is to ensure that the marketing of medicines to healthcare professionals and the general public is carried out in a responsible, ethical and professional manner. It also endeavours to ensure that marketing

activities encourage the rational use of medicines by healthcare professionals and the general public.

The Code is administered by an industry self-regulatory body, the Authority for the Code of Practice for the Marketing of Medicines in South Africa (the Authority). The Authority is responsible for the provision of advice, guidance and training on the Code as well as for handling complaints and the complaints procedure. It is also responsible for scrutinising journal advertising and Internet or electronic advertising on a regular basis.

The legal basis for the code is found in the Section 18C of Medicines and Related Substances Control Act (Act 101 of 1965 as amended) that is also known as the Medicines Act, which reads as follows:

> *"The Minister shall, after consultation with the pharmaceutical industry and other stakeholders, prescribe a code of practice relating to the marketing of medicines."*

All marketers and suppliers of medicines in South Africa are subject to this Code. The Code is in line with the principles of Section 7.7 of the National Drug Policy (NDP) (January 1996), which relates to advertising and marketing of medicines.

> *"The objective is to ensure that advertising and marketing of drugs shall be in keeping with National Drug Policy and in compliance with national regulations as well as with voluntary industry standards. All promotion-making claims shall be reliable, accurate, truthful, informative, balanced, up-to-date, capable of substantiation and in good taste. They shall not contain misleading or unverified statements or omissions likely to induce medically unjustifiable drug use or to give rise to undue risks. Promotional material shall not be designed to disguise its real nature. Promotion in the form of financial or material benefits shall not be offered to or sought by health care practitioners to influence them in the prescribing of drugs. Scientific and educational activities shall not be deliberately used for promotional purposes".*

Part 1A of the Code relates to the marketing and promotion of medicines to healthcare professionals. This includes the marketing and promotion of self-medication (OTC) products to healthcare professionals when such promotion is aimed at generating prescriptions or recommendations to patients.

As stated in the Part 1A (7) of the Code the term 'promotion' means

"Any activity undertaken by or on behalf of any company or person, which promotes the prescribing, supply, sale or use of its medicines. It includes:

- *Media advertising*
- *Direct mail advertising*
- *The activities of medical representatives, including detail aids and other printed material used by representatives*
- *The provision of hospitality for promotional purposes*
- *The sponsorship of continuing professional development scientific meetings, including payment of travelling and accommodation expenses in connection therewith*
- *·The provision of information to the general public, either directly or indirectly, and all other sales promotion in whatever form, such as participation in exhibitions, the use of audio-cassettes, films, records, tapes, video recordings, radio, television, the Internet, cell phone (SMS), electronic media, interactive data systems and the like*
- *The provision of inducements to prescribe, supply, administer, recommend or buy medicines by the gift, offer or promise of any benefit or bonus, whether in money or in kind, is not allowed under the Medicines Act.*
- *The supply of samples to healthcare professionals is not permitted under the Medicines Act."*

The code also provides guidelines for the pharmaceutical representatives as follows:

" Representatives' Training

Procedures must ensure that:

- *Representatives are adequately trained in relation to every product that they are to promote (Clause 15.1)*

- *Representatives are not employed as medical representatives unless they have passed the relevant examination as provided for in Clauses 16.2 and 16.3 of the Code, or have the benefit of an exemption, or have been in such employment (whether with their current employer or not) for less than two years. Contract representatives are only used if they comply with the requirements of Clauses 16.2 and 16.3 as regards examination status.*

Representatives should be provided with written instructions on the application of the Code to their work even if they are also provided with an actual copy of it. Their instructions should cover such matters as the company's policies on meetings and hospitality, and the associated allowable expenditure, and the specific requirements for representatives in Clause 15 of the Code. It should be made clear how reporting to the 'scientific service' of the company is to be carried out in relation to information about the medicines that they promote which comes to their notice, particularly reports of side-effects (Clause 15.6).

It should be made clear to representatives as to whether, and in what circumstances, they can themselves write letters (or prepare other written materials), which mention particular products and are thus almost certain to be considered promotional material. Such items must be certified, either in advance by way of pro-forma letters or by certifying each individual letter or other item, and must bear prescribing information in accordance with Clause 4.1."

The introduction of a prescribed course and an examination for the pharmaceutical reps is a step towards making the personal selling by the pharmaceutical representatives more professional and ethical. It will also give the pharmaceutical reps more credibility and bestow greater status to the pharmaceutical reps than currently enjoyed by them.

Meakings (1999) argues that although the Code has been widely distributed by PMA in South Africa, it "*remains a publication, only effective if read and its principles implemented.*"

THE MEDICINES AND RELATED SUBSTANCES AMENDMENT ACT (Act59 of 2003)

The Medicines and Related Substances Amendment Act (Act 59 of 2003) that replaced Act 90 of 1997, which had amended the principle Medicines Act (Act 101 of 1965) and includes the General Regulations, came into effect on 2nd May 2003 (Sunday Times, 2003). Some elements of the Act such as those dealing with drug pricing policies are to be held back until May 2, 2004 and the Act will only become binding on the State on July 1, 2005 (Gray, 2003: 4).

Aspects of the new legislation having direct impact on the current pharmaceutical promotional practices are: banning of drug sampling with immediate effect and the compulsory offer of generic substitution (i.e. substitute a branded drug with a lower-priced generic equivalent where available) by pharmacists (Ducasse, 2003: 10; Gray, 2003: 4; Keeton, 2003: 5; Sunday Times, 2003). The Act 59 also seeks to prohibit a manufacturer's volume discounts and rebates, which the government considers perverse incentives (Sunday Times, 2003). The sections dealing with perverse incentives such as bonusing of drugs, rebates on drug purchase and other forms of incentive schemes is currently awaiting recommendation from the Pricing Committee and will come into effect on May 2, 2004 (Gray, 2003). The other critical issues are: the issue of pricing of pharmaceutical drugs (a single exit price is proposed) and the issue of parallel importation of pharmaceutical drugs (Medical Chronicle, 2002). These issues are also awaiting the Pricing Committee's decision (Gray, 2003: 4).

The government's position on the issues of generic substitution and parallel importation of medicines is likely to cause controversy amongst all role players in the health care industry. The developing countries such as South Africa are in a catch 22 situation in that they cannot afford to alienate the pharmaceutical multinationals from their markets and at the same time they cannot afford many of the branded medication. The case in point being the raging current national debate on provision of anti-retroviral drugs by the government for the treatment of Human Immuno-deficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) in South Africa.

There are also changes to the requirements for prescription writing, such as addition of the age and gender of the patient, diagnosis (with patient's permission), and stipulations

concerning the legibility of the prescription (Gray, 2003: 6). The amendments to drug Schedules include designating Schedule 0 for the previously unscheduled drugs, combination of previous Schedules 6 and 7 into new Schedule 6, assigning Schedule 7 to "banned" substances, and Schedule 8 for "exceptions" (Gray, 2003). A major change is that the pharmacist, without a prescription, can sell (maximum 30 day's supply) Schedules 2 and 4 drugs to patients for whom they were previously (within preceding six months) prescribed by an authorised prescriber. The implication for the pharmaceutical companies will be to increase their promotional efforts directed at the pharmacists.

In terms of the legislation, from May 2, 2004, those medical practitioners that dispense medicines will be required to be in possession of a dispensing license in order to continue to dispense (Ducasse, 2003). More importantly, the medical practitioners in urban locations may not be able to dispense medication, even if they are in possession of the relevant dispensing license.

5.2 ETHICAL ISSUES OF PHARMACEUTICAL PROMOTION

The World Health Organization, to prevent the occurrences of inappropriate pharmaceutical promotion, has developed the ethical criteria for drug promotion.

WORLD HEALTH ORGANISATION'S (WHO) ETHICAL CRITERIA FOR MEDICAL DRUG PROMOTION

The stated objective "is to support and encourage the improvement of healthcare through the rational use of medicinal drugs" (WHO, 1985:1).

Clause 4 of the WHO ethical criteria for medical drug promotion (1985:1) reads as follows:

> *"4. These criteria constitute general principles for ethical standards which could be adapted by governments to national circumstances as appropriate to their political, economic, cultural, social, educational, scientific and technical situation, laws and regulations, disease profile, therapeutic traditions and the level of development of their health system. They apply to prescription and non-prescription medicinal drugs ("over-the-counter drugs"). They also apply*

generally to traditional medicines as appropriate, and to any other product promoted as a medicine.

The criteria could be used by people in all walks of life; by governments; the pharmaceutical industry (manufacturers and distributors); the promotion industry (advertising agencies, market research organizations and the like); health personnel involved in the prescription, dispensing, supply and distribution of drugs; universities and other teaching institutions; professional associations; patients' and consumer groups; and the professional and general media (including publishers and editors of medical journals and related publications)."

It provides guidelines for the promotional activities of: advertising, medical representatives, use of free samples of prescription drugs for promotional purposes, symposia and other scientific meetings, post-marketing surveillance, packaging and labelling, and package inserts and booklets. It is important to note that these criteria are not legally binding and are merely guidelines, which may or may not be adopted/incorporated by the country's legislature or self-governing bodies.

The Code of Practice for the Marketing of Medicines in South Africa and the Code of Practices for Pharmaceutical Marketing developed by the International Federation of Pharmaceutical Manufacturers Association (IFPMA) incorporate the criteria put forward by WHO.

5.2.1 INDEPENDENT VIEWS ON ETHICAL ISSUES

" Relationships involving medical practitioners and the pharmaceutical industry raise serious concerns and controversy within both the medical profession and the broader community" Komesaroff and Kerridge (2002:1).

"Controversy exists over the fact that physicians have regular contact with the pharmaceutical industry and its sales representatives, who spend a large sum of money each year promoting to them by way of gifts, free meals, travel subsidies, sponsored teachings, and symposia" Wazana (2000:1).

Komesaroff and Kerridge (2002:2) identify three main ethical concerns resulting from the relationships between the doctors and the pharmaceutical industry:

1. The possibility of compromising the doctor's primary ethical obligation to patients, dividing loyalties of doctors and undermining the basic trust on which the clinical relationships depends. This may occur as a consequence of the relationship serving the commercial objectives of the pharmaceutical industry and covetous interests of the doctors;
2. The risk of drug promotion inappropriately influencing a doctor's decision; and
3. The risk of distortions in scientific evidence and prevention of independent assessment of data from the industry's involvement in research.

Waud (1992) found that, with respect to the relationship between medical practitioners and the pharmaceutical companies, medical practitioners' opinions differed starkly, from belief that there is minimal ethical risk to the fervent standpoint that all such contacts lead to some compromise on the part of the practitioners and thus should be avoided.

Wazana (2000) conducted a meta-analysis of 29 studies from a sample of 538 studies, to identify the extent of and attitudes toward the relationship between physicians and the pharmaceutical industry and its representatives and its impact on the knowledge, attitudes, and behaviour of physicians. He concluded that the physician-industry interactions appear to affect prescribing and professional behaviour by leading to inappropriate prescribing. This was based on his finding of changes in prescribing practice resulting from physicians' meetings with pharmaceutical representatives and increased prescription rates of the sponsor's medication from attending sponsored CME by pharmaceutical representative speakers.

Choudhry *et al* (2002) studied the potential financial conflicts of interest for 100 authors of 44 clinical practice guidelines (CPGs) since CPGs are designed to influence the practice of a large number of physicians. They studied the extent and nature of interaction between the authors of CPGs and the pharmaceutical industry. Their findings were that 87% of authors had some form of interaction with the pharmaceutical industry, of whom 58% percent had received financial support to perform research and 38% had served as employees or consultants for a pharmaceutical company. However, in published versions of the CPGs, only 2 authors had made specific declarations regarding the personal financial relationships with the pharmaceutical industry. Their study highlighted the need for appropriate disclosure of

financial conflicts of interest for authors of CPGs and a formal process for discussing these conflicts prior to CPG development.

Schüklenk (2001) looked at ethical issues in continuing professional development (CPD) activities organised or sponsored by pharmaceutical companies. He argues that the pharmaceutical companies have conflict of interest that effectively rules them out as organisers of CPD events. Schüklenk identified the following unethical practices:

- Academics presenting pharmaceutical company-authored material (designed to promote the company's drug) as their own work.
- Pharmaceutical companies getting CPD accreditation for presentations with minimal/no information on the speaker or the content of the topic.
- Doctors getting the speakers requested by them in return for doctors' participation in marketing events for certain drugs.
- Lack of controls to ensure that the accredited presentation was actually provided as accredited.
- Some commercially sponsored events not taken seriously by both the company and the participating doctors.

Schüklenk's research of other studies (Chren and Landefeld, 1994; Rothman, 2000) established that sponsorship of CPD events affects the prescribing habits of doctors and that the doctors' prescription habits are influenced by the latest CPD-accredited marketing exercises arranged by the pharmaceutical companies. Schüklenk offers some possible solutions to the ethical dilemmas, however they are beyond the scope of this study.

Gonul *et al* (2001: 79-90), in their study described earlier, found that there was no evidence of any ethically objectionable influence, from detailing and free samples, on the physicians. At a plenary session of the Health Professions Council of South Africa (HPCSA) workshop, it was commented, "clinical and ethical independence of health practitioners should always supersede corporate and business considerations" Batteman (2003: 477).

The regulations and ethical issues discussed offer insight into the challenges faced by the pharmaceutical companies. A further debate on these issues is beyond the scope of this study.

CHAPTER 6: RESEARCH METHODOLOGY

6.1 METHODOLOGY

A survey was conducted among the general medical practitioners in private medical practice in Pietermaritzburg, South Africa. A self-administered questionnaire (survey instrument) was hand-delivered to all general practitioners (GPs) in the selected two suburbs of Pietermaritzburg, where the majority of medical practices are located, viz. Central Town and Raisethorpe. A total of 67 questionnaires together with a covering letter (Appendix I) were distributed and each general practitioner was asked to spare 10 to 15 minutes of their valuable time to record their responses. A maximum period of three weeks was allowed to complete the questionnaire. The researcher personally collected each questionnaire.

6.2 THE QUESTIONNAIRE

The survey instrument, a self-administered questionnaire (Appendix I), was designed by the researcher to accommodate all research objectives. This particular type of survey methodology was chosen for the cost and time benefits it offered compared to the other forms of surveys. A covering letter was attached to each questionnaire explaining the purpose of the research and reassuring the respondents of confidentiality and anonymity.

The questionnaire consists of structured questions of the following types: dichotomous questions, multiple-choice questions, closed-ended questions, open-ended questions, and scaled-response questions (Nominal scale, Rank-order scale and Likert scale). The respondents were requested to either cross (X) the relevant answer or apply ranking or select a ranked answer where applicable. This helped to remove the interviewer and coder bias (McDaniel and Gates, 1998: 174). It also simplified the coding and data-entry processes. Scaled-response questions were developed to measure the perceived importance of various characteristics of pharmaceutical representatives, the preferred frequency and duration of sales calls by pharmaceutical representatives, and the perceived influence of various factors on the choice of a prescription drug by the responding medical practitioners. Open-ended questions were included in certain instances to determine if there were any other variables besides the ones being included in the questionnaire.

The questions were stated in as simple and as clear a form as possible, bearing in mind to avoid words, which may introduce respondent bias and avoidance of questions that the respondents may be unwilling to answer (McDaniel and Gates, 1998: 279). The key words were in bold and some were also in capital letters to facilitate quick focus and understanding of the question and or instruction. The questionnaire was pilot tested with two medical colleagues (who were not part of the selected sample) to test for any ambiguities, misunderstandings, and inclusion of any questions that may be perceived to be of a personal nature. The questionnaire was further verified with the dissertation supervisor and two of his colleagues before the final version was distributed.

6.3 MEASUREMENT SCALES

Nominal scales were used for questions 1 and 2, which looked at the demographics variables of the respondents/type of medical practices. A nominal scale partitions the data into categories that were deemed to be mutually exclusive (McDaniel and Gates, 1998: 228). Rank-order scales were used for questions 12 and 13 that investigated the three commonest sources of medical drug information and the three commonest influences on commencing the use/prescribing of a new drug. The dichotomous-questions were used to evaluate the respondents understanding of basic statistics and their brief opinion on ethics of pharmaceutical marketing. Likert scales were used to evaluate the importance of various characteristics of the pharmaceutical reps and to evaluate the perceived relative influence of various factors on the respondent's prescribing behaviour.

6.4 SAMPLING

The population of interest was general medical practitioners in Pietermaritzburg. All specialist medical practitioners were excluded. Two suburbs of Pietermaritzburg, Central Town and Raisethorpe, were selected as the majority of general practitioners have their practices in these areas. The sampling frame consisted of all general medical practitioners practicing in the selected suburbs.

The local telephone directory was unsuitable as a source of list of names of the GPs, as the names of many GPs' were absent from the list of medical practitioners in the directory. Similarly, the medical directory of all doctors including specialist (published in 2001), was

also found to have an incomplete list. Thereafter the local private pathology laboratories were requested to provide a list of all doctors and their practice addresses, as it was assumed that they would have a complete list since their services are utilised by all medical doctors. Unfortunately, the list provided contained names of many that had either relocated or emigrated, and lacked the names of some that had entered private practice in the preceding three to four years.

It was thus decided to go the route of *area sampling,* specifically a one-stage cluster sample where data is collected from all the elements (census) in the cluster (McDaniel and Gates, 1998: 318). All general medical practices in the two selected suburbs were identified (through the researcher's knowledge of the two suburbs, by driving through the two suburbs, and asking colleagues about the other GPs in the area). A total of 67 GPs were identified and were included in the research. By restricting the research to the selected geographical area, travel time and expenses were also reduced. Area sampling overcomes the problems of high sampling cost and the unavailability of a practical sampling frame for individual elements (Cooper and Schindler, 2001: 187). When using the area-sampling method, it is assumed that the elements in an area are just as heterogeneous as the total population (McDaniel and Gates, 1998: 318). However, overrepresentation of one ethnic group (Asian) was identified. Forty-one of the 67 GPs identified, were Asian. As regards to the suburbs selected, the preponderance of Asian GPs in the sample is representative of the general population in these areas, which is a legacy of the previous Group Areas Act under apartheid. To my knowledge, there are no previous studies showing any relationship between ethnicity and the manner in which the medical practitioner carries out his/her professional duties. Therefore, identification of ethnic origin as a demographic variable was not included in the questionnaire.

6.5 DATA COLLECTION

Each questionnaire with a covering letter was hand delivered to the GP's medical practice and given to the receptionist or to the doctor where possible. Over the following three weeks, completed questionnaires were personally collected from the respondent/respondent's receptionist. Where the completed questionnaire was not ready subsequent to the distribution, follow-up phone calls were made 2 to 3 days later to determine if they were ready for collection. These phone calls served as reminders to the practice staff to request the doctors to respond to the questionnaire. *Callbacks* are the most reliable solution to nonresponse

problems (Cooper and Schindler, 2001: 306). Some respondents necessitated up to five such phone calls to their practices.

A cut-off date for final collection was set at three weeks after the initial distribution. Finally, 59 responses were collected. Two respondents refused to take part in the survey. One of the latter commented that the questions were too personal and the other did not provide a reason. Four questionnaires were misplaced/lost either by the respondent or by the respondent's administration staff. Two of the respondents failed to answer by the cut-off date. Out of the 59 responses collected, one was found to be incompletely answered and was thus excluded from the research.

The data in the questionnaire was validated for adherence to the instructions and completeness (McDaniel and Gates, 1998: 351). Validity in this context refers to determining that all questionnaires were properly completed (McDaniel and Gates, 1998: 351). It was also edited to exclude mistakes and to note the respondents who answered the open-ended questions. The editing process includes determining if the respondent failed to answer any question, ensure that skip patterns are followed, and to check responses to open-ended questions (McDaniel and Gates, 1998: 352). The data was numerically coded. Coding involves assigning numeric values to the various responses to facilitate grouping of responses into limited categories (Cooper and Schindler, 2001: 423; McDaniel and Gates, 1998: 356). The respondents were also numerically coded from 1 to 58.

6.6 DATA ANALYSIS

The coded responses were entered into Microsoft Excel® and SPSS (Statistical Package for the Social Sciences) version 11, for data analysis. The data was checked for error in SPSS with the use of a marginal report. A marginal report is " a computer generated table of the frequencies of the responses to each question to monitor entry of valid codes and correct use of the skip pattern" (McDaniel and Gates, 1998: 361). Thereafter, descriptive analysis was conducted. A data output was generated in SPSS (appendix III). One-way frequency tables were generated in both Microsoft Excel and SPSS to determine the total number of responses to each question and the total number of respondents (58) was used as a base for the calculation of percentages. The responses were cross-tabulated against corresponding variables. Cross-tabulation examines the responses to one question relative to responses to

one or more other questions (McDaniel and Gates, 1998: 365). In addition, significance testing was conducted for certain cross-tabulations using the non-parametric tests (in SPSS) owing to the nonmetric (nominal and ordinal) nature of the data (Cooper and Schindler, 2001: 495). The data analyses are shown in appendix III.

The data that was entered in Microsoft Excel®, was imported into Microsoft Access 2000® (a database). The database was used to summarise questions with ranking and weightings (Likert Scales) using the *SQL (Structured Query Language) Query* function. Furthermore, cross-tabulations were carried out using the *Crosstab Query Wizard.* Microsoft Excel® was then used to generate bar charts to graphically represent the results of these cross-tabulations.

6.7 RELIABILITY AND VALIDITY OF THE QUESTIONNAIRE

Reliability is assessment of the degree to which the measures are free from random or unstable error, and therefore providing consistent data at different times under different conditions (Cooper and Schindler, 2001: 215; McDaniel and Gates, 1998: 231). The internal consistency of the measurements was tested with *Cronbach's-Alpha.* This procedure calculates the mean reliability coefficients estimates for all possible ways of splitting a set of items in half (McDaniel and Gates, 1998: 233).A lack of correlation of an item with other items in the scale indicates that the item does not belong in the scale and should be omitted (McDaniel and Gates, 1998: 233). *Cronbach's-Alpha* was consistently less than 0.7 except for questions 12.4, 12.7, and 13.8. (Appendix III) therefore if the questions 12.4, 12.7, and 13.8 were to be removed from the questionnaire, it would improve the reliability.

Validity is the extent to which the differences found with the measuring tool reflect the true differences among the respondents tested (Cooper and Schindler, 2001: 211). The questionnaire is accepted to have internal content validity since the questions were based on the literature survey (McDaniel and Gates, 1998: 234).

CHAPTER 7: ANALYSIS OF RESULTS

There were 58 completed questionnaires out of 67 handed out. This gave a response rate of 87%. This is improvement on the 42% response rate to mailed-questionnaires by Pitt and Nel (1988) and 73% response rate to hand-delivered questionnaires by Gillingham (1995), but lower than the 95% response rate, to hand-delivered questionnaires, achieved by Friedman (1991).

Demographic Data

The demographic information collected was: the gender, type of general practice based on criteria as listed in question 2 of the questionnaire, the number of years in private practice, and years since qualification. The frequency of the pharmaceutical reps' visits and the duration of the reps' visits were also determined.

Question 1.Gender

Of the 58 respondents, 51(87.9%) were male and 7 (12.1%) were females.

Question 2.Type of General Practice

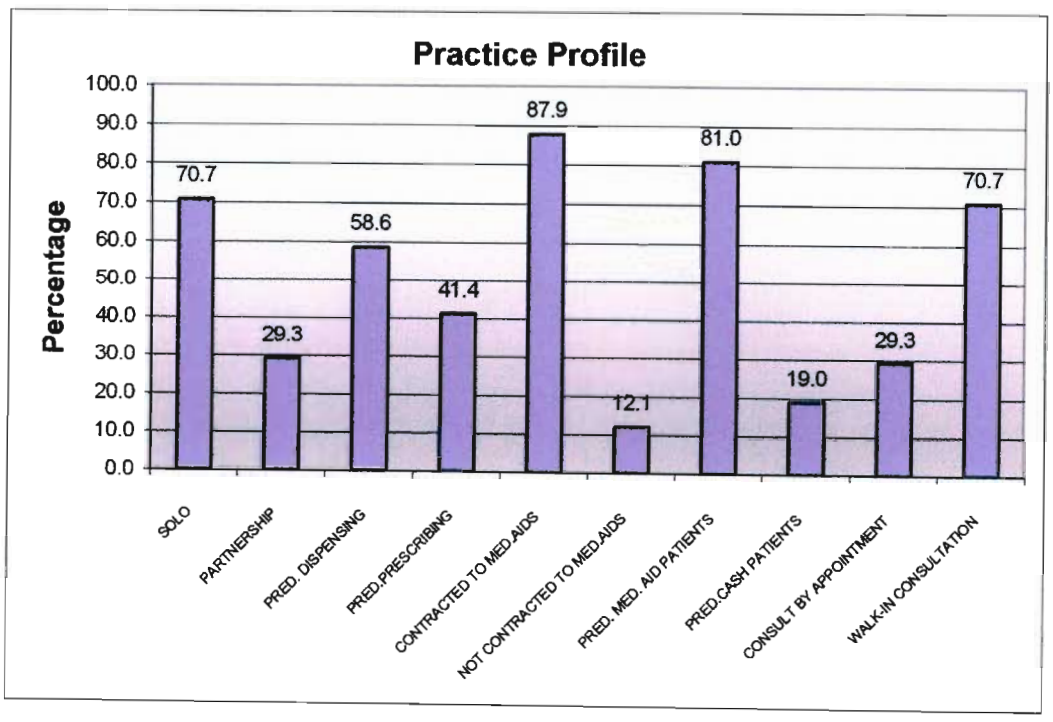

Figure: 4

The majority (70.7%) of the respondents were in solo medical practices with 29.3% in partnership. 58.6% were predominantly dispensing practices and 41.1% were predominantly prescribing practices. The vast majority (87.9%) of the practitioners were contracted to the medical aid schemes and only 12.1% were not contracted. In terms of the patient profile, 81% of the practices' predominant patients were on medical aids with only 19% of the practices having predominantly cash paying patients. 70.7% of the practitioners consulted without appointments (on walk-in basis) and the remaining 29.3% consulted mainly by appointments only.

Question 3 & 4: Duration in Private Practice and Period since Qualification:

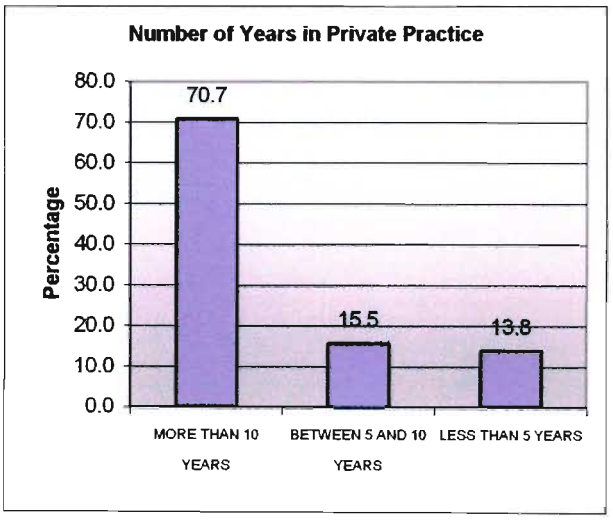

Figure: 5

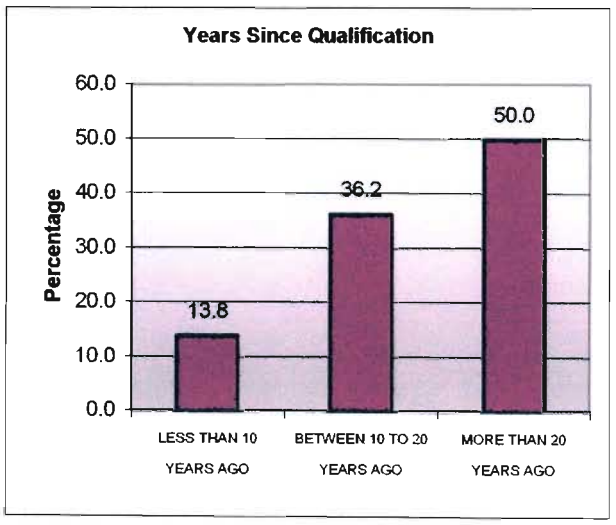

Figure: 6

The majority (70.7%) of the responding GPs were practicing for more than 10 years, 15.5% GPs for between 5 to 10 years, and 13.8% GPs for less than five years. 50% of GPs had qualified more than 20 years ago, 36.2% had qualified between 10 to 20 years ago, and only 13.8% had qualified less than 10 years ago.

Question 5.Frequency of the Pharmaceutical Representatives' Visits:

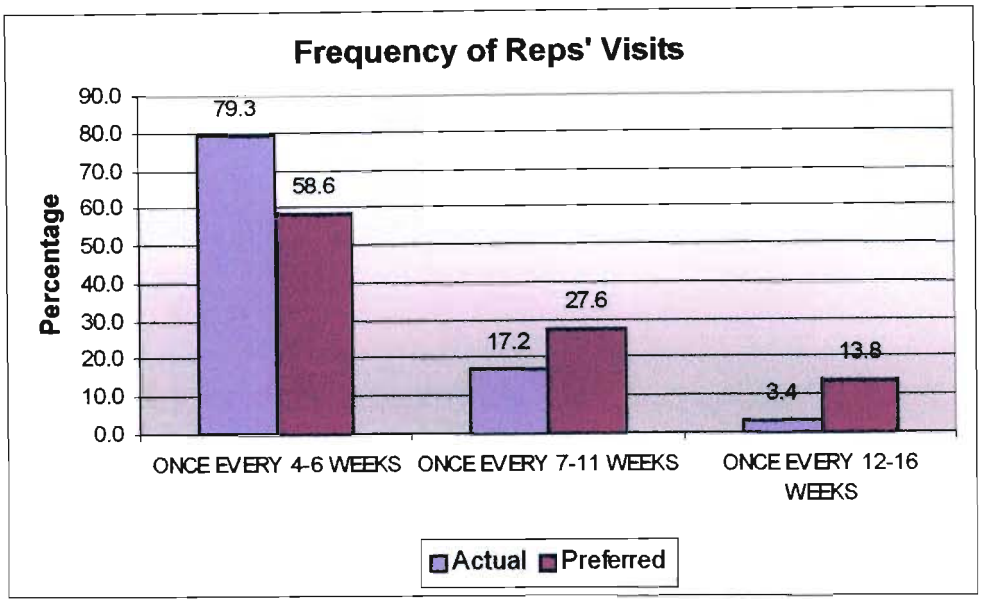

Figure: 7

The pharmaceutical reps called on 57 (98.3) of the respondents and the majority of the GPs (72.4%) saw the pharmaceutical reps on walk-in basis without prior appointments. The GPs were asked about the average frequency of visits by the pharmaceutical reps and what their actual preference was.

From the Figure 7, it is evident that there are noticeable differences between the GPs' preferences and the existing frequencies of sales calls by the pharmaceutical reps. Although the majority (58.6%) still prefer the reps to visit every 4 to 6 weeks, it is significantly lower than the actual 79.3% of the GPs receiving 4 to 6 weekly visits by the reps. Also there is just over 10% further increases in the GPs' preferred frequencies of reps' call rates as opposed to the actual findings for sales calls once every 7 – 11 weeks and once every 12 –16 weeks respectively. These differences were statistically significant and were confirmed with the *Wilcoxon Signed Ranks Test* (Appendix III). *Wilcoxon Signed Ranks Test* detects differences in the distribution of two related variables (SPSS *Results Coach*). Small significance values (< 0.5) indicates that the two variables differ in distribution (SPSS *Results Coach*).

Question 6 & 7: Duration of Visits by the Pharmaceutical Representatives:

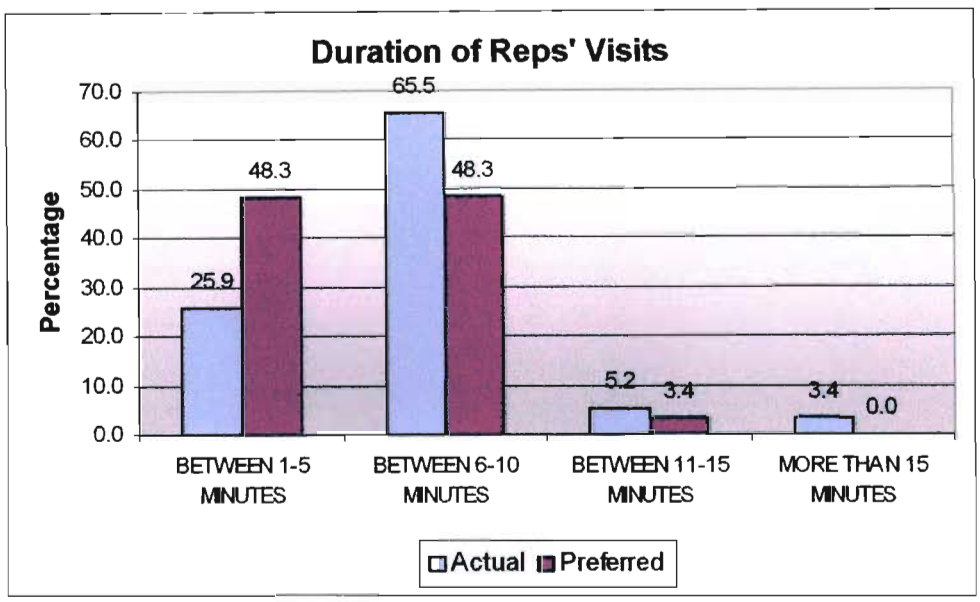

Figure: 8

Again, there were significant differences between the actual and the preferred duration of the time spent by the pharmaceutical representatives. On average, 65.5% of the promotional visits by the reps lasted between 6-10 minutes when only 48.3% of the GPs preferred the visits to last this duration. In addition, 48.3% of the GPs actually preferred the reps' visits to be between 1-5 minutes compared to the current 25.9% receiving visits for the duration of 1-5 minutes. The preferences were also lower for the sales calls lasting between 11-15 minutes and more than 15 minutes respectively, with no one preferring it to last more than 15 minutes. These differences were also confirmed to be statistically significant with *Wilcoxon Signed Ranks Test* (Appendix III).

Factors Relating to the Pharmaceutical Representative

Based upon the literature survey, twelve factors relating to the pharmaceutical representative were established. Question 8 examined the relative importance of nine of the twelve factors to the responding GPs. The respondents had to rank the relative importance based upon the designed Likert Scale (from 1 = not important to 5 = absolute must). The remaining three factors (Questions 9, 10, and 11) were presented as statements and the respondents had to offer their opinion based upon Likert Scale (from No Opinion to Strongly Agree).

Question 8. Relative Importance of Factors Relating to the Pharmaceutical Representatives:

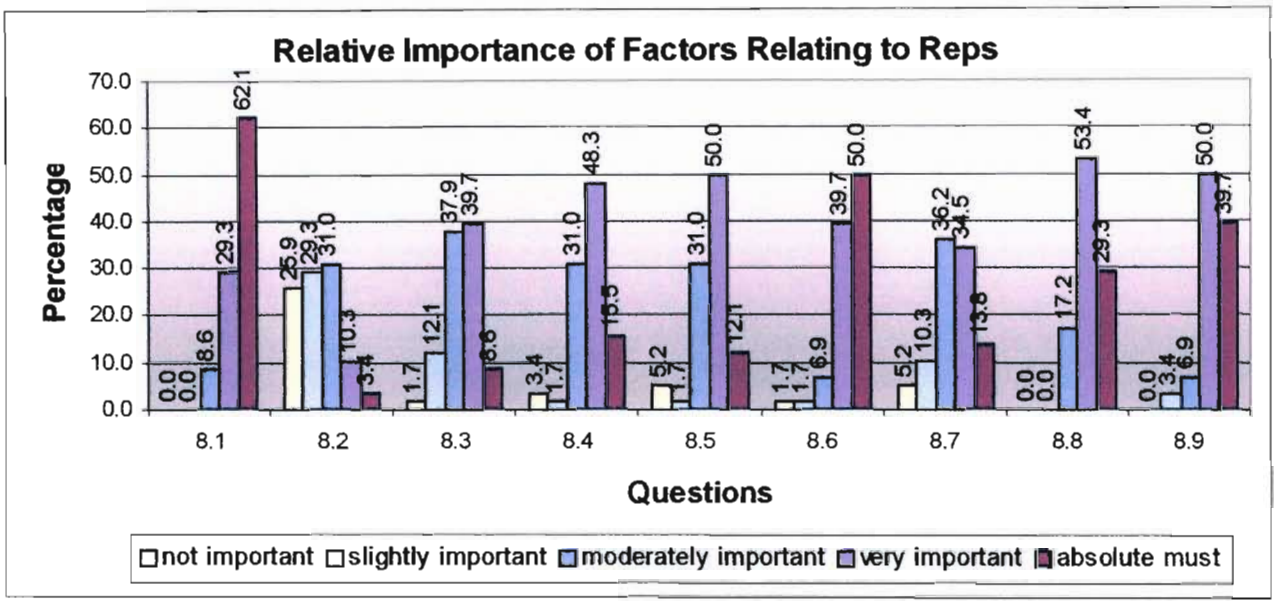

Figure: 9

8.1: The rep's expertise and knowledge of the drug and the medical condition for which it is intended.

The majority of the GPs rated it an *absolute must* (62.1%) and *very important* (29.3%). The remaining 8.6% rated it *moderately important.*

8.2: The rep's physical attractiveness.

25.9% of the GPs considered it as *not important*. It was *slightly important* to 29.3% and *moderately important* to 31% of the GPs. Only 10.3% considered rep's physical attractiveness *very important* and remaining 3.4% regarded it, as an *absolute must* factor.

8.3:The rep's personal grooming and personal attire.

The majority of the GPs considered this to be *moderately* to *very important* factor, 37.9% and 39.7% respectively. It was *slightly important* to 12.1% of the GPs and *absolute must* to 8.6% of the GPs. Only 1.7% of the GPs did not considered it to have any importance.

8.4: The rep's command of the language and articulation.

The majority of the GPs (48.3%) considered this to be *very important* with further 15.5% rating it as an *absolute must*. 31% of the GPs considered it *moderately important*, 1.7% as *slightly important* and 3.4% said it was *not important*.

8.5: The rep's educational background and qualification.

The majority (50%) of the GPs regard it as *very important*, 12.1% as an *absolute must,* and 31% as *moderately important*. 5.2% said it was *not important* and 1.7% said it was *slightly important.*

8.6: The apparent honesty and integrity of the rep.

The majority (50%) of the GPs considered this to be an *absolute must* as a factor. Further 39.7% rated it as *very important*. 6.9% said it was *moderately important* and equal number (1.7%) rated it as *not important* and *slightly important*.

8.7: The use of detail-aids in their presentations.

The majority of the GPs rated it as *moderately* (36.2%) and *very important* (34.5%). 13.8% of the GPs rated it as an *absolute must*, 10.3% as *slightly important* and 5.2% as *not important*.

8.8: The personality and the friendliness of the rep.

53.4% of the GPs rated this as *very important* and further 29.3% rated it as an *absolute must*. The remaining 17.2% rated it as *moderately important*.

8.9: The professionalism of the presentation.

50% of the GPs considered it as *very important* and 39.7% considered it to be an *absolute must* factor. 6.9% of the GPs rated it as *moderately important* and the remaining 3.4% rated it as *slightly important*.

8.10: Others specify.

The following comments were made.

- "*Not to slate/degrade competitors*", rated as an *absolute must*.
- "*Long standing experience*", rated as *very important*.
- "*Avoidance of repetitive detailing, i.e. know your doctor*", rated as *very important.*

Mean Rating of the Factors Relating to the Pharmaceutical Representatives

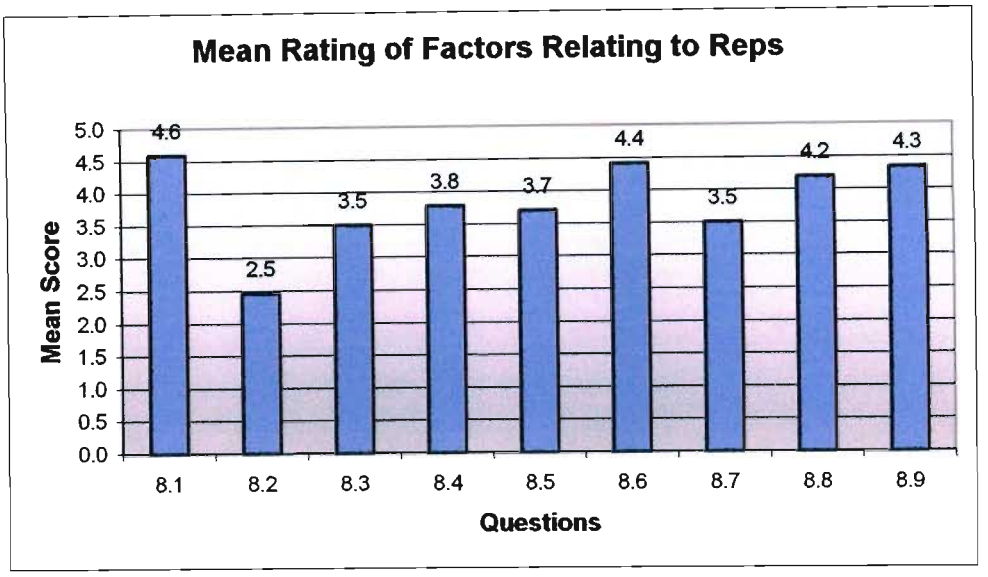

Figure: 10

Figure 10 shows the mean rating of the 'relative importance of the factors relating to the pharmaceutical representatives', which are ranked in descending order according to their mean scores in Table 8.

Rank	Factors Relating to the Pharmaceutical Representatives	Mean Score
1	8.1: The rep's expertise and knowledge of the drug	4.6
2	8.6: The apparent honesty and integrity of the rep	4.4
3	8.9:The professionalism of the presentation	4.3
4	8.8: The personality and the friendliness of the rep	4.2
5	8.4:The rep's command of the language and articulation	3.8
6	8.5:The rep's educational qualification	3.7
7	8.3: The rep's personal grooming and neatness in attire	3.5
7	8.7: The use of detail-aids in their presentations	3.5
9	8.2: The rep's physical attractiveness	2.5

Table: 8

The pharmaceutical rep's expertise and knowledge of the drug and the condition for which it is intended, was found to be the most important factor. This confirms the importance of the credibility of the source in communication, as discussed in chapter 2. The next three

important factors (ranked 2, 3, and 4 in the Table 8) were very close in their respective mean scores. *The professionalism of the presentation* and *the apparent honesty and the integrity of the rep* are also important factors contributing to the credibility of the source. *The personality and the friendliness of the rep* contribute to the "attractiveness" in terms of familiarity and likeability of the sender of the message as discussed by Koekemoer (1998). *The rep's command of the language* used by the doctor was found to be the 5th most important factor ahead of *the rep's educational background* (6th). *The rep's personal grooming and attire* and *the use of the detail-aids*, were found to be joint 7th according to their mean score rating. Despite the pharmaceutical companies' use of attractive well-groomed sales-persons, especially ladies, to increase the persuasiveness of their message, *the rep's physical attractiveness* was found to be the least important factor.

A Paired Samples Tests (t-tests) (appendix III) were done on above ranked successive factors based on their mean scores. A result showing a low significance value (< 0.05) implies that there is a significant difference between the two variables. (SPSS *Result Coach*) Based upon the results, there was statistically significant difference between factors 8.8 (*the personality and the friendliness of the rep*) and 8.4 (*the rep's command of your language and articulation*). There was also statistically significant difference between factors 8.7 (*the use of detail-aids in their presentations*) and 8.2 (*the rep's physical attractiveness*). The remaining Paired Samples Test did not show statistically significant differences between the ranked factors.

Question 9. The Reps from Scientific/Medical Background is More Persuasive.

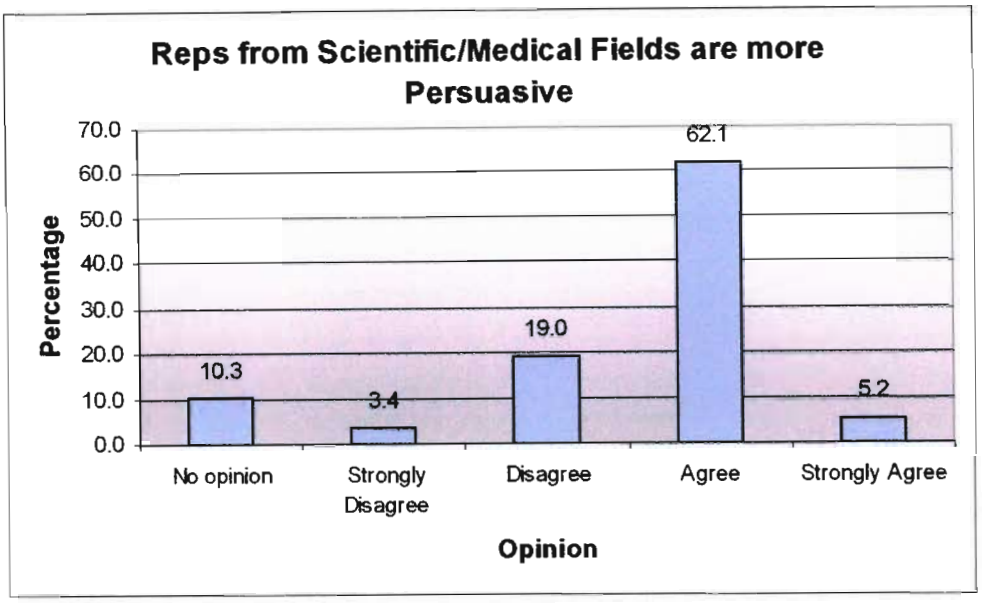

Figure: 11

The vast majority (62.1%) of the respondents *agreed* and 5.2% *strongly agreed* with the statement. 19% *disagreed,* 3.4% *strongly disagreed* and 10.3% had no opinion. This confirms the previous discussion in chapter 2, that the reps from medical or scientific fields are perceived to have greater credibility.

Question 10. Generally, Female Reps are More Persuasive than the Male Reps.

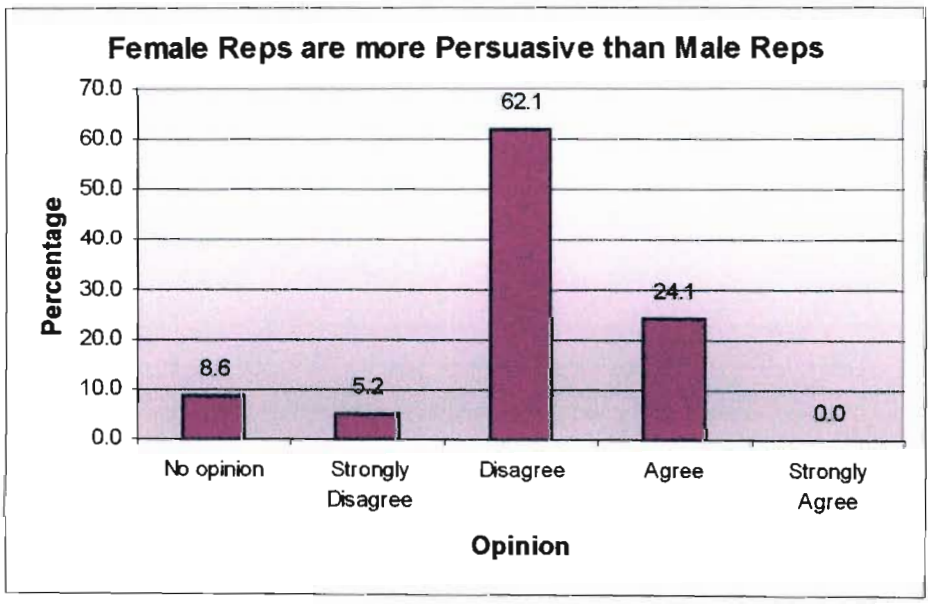

Figure: 12

24.1% of the responding GPs *agreed* that the female reps were generally more persuasive than the male reps, but the majority (62.1%) of the responding GPs *disagreed* with the statement.

5.2% *strongly disagreed* and 8.6% had *no opinion*. The responses were cross-tabulated with the gender of the respondents. The result showed no correlation, i.e. the majority of male and female respondents disagreed with the statement.

Question 11. Pharmaceutical Reps from Similar Cultural Background to the GP are More Persuasive.

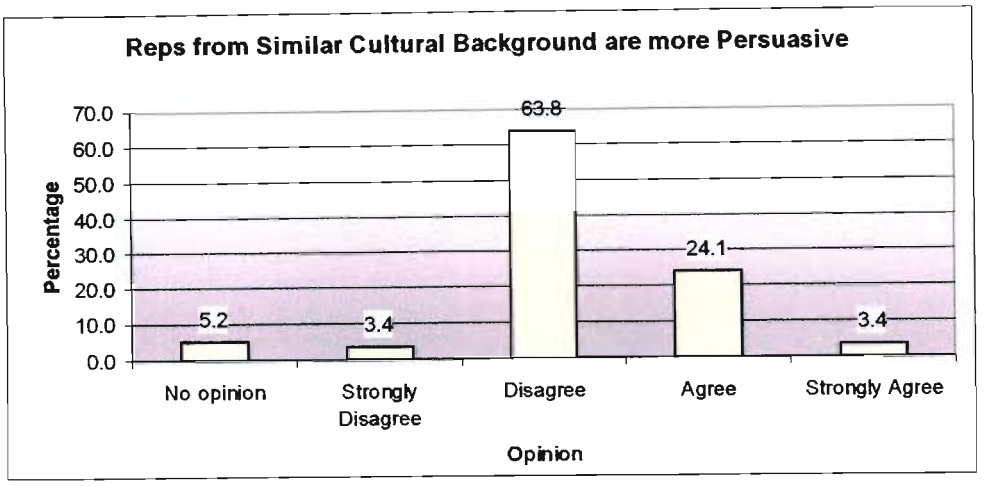

Figure: 13

Only 24.1% agreed and 3.4% strongly agreed that the reps from cultural background similar to the GP are more persuasive in their presentations. The majority (63.8%) of the responding GPs disagreed with the statement. 3.4% of the respondents strongly disagreed and 5.2% had no opinion. Cross-tabulations with various demographic variables showed no statistical significant relationships with any of the demographic variables.

Questions 12 & 13: Sources of New Drug Information and Sources of Influence to Induce Trial

Based upon the literature survey, seven sources/factors were established to assess their relative importance as sources of new drug information and as sources of influence to induce trial use of a new drug. An additional factor of 'sampling' was included in the assessment of sources of influence to induce trial of a new drug. Question 12 examines the leading sources of new drug information as ranked (from 1 = most common source to 3 = 3rd most common source). Question 13 examines the leading sources of influence to induce trial of a new drug (from 1 = most common influence to 3 = 3rd most common influence). After individual analysis of Question 12 and 13, the two are compared to determine the presence or absence of any correlation between the two questions.

Question 12. The Leading Three Sources of Information for a New Drug

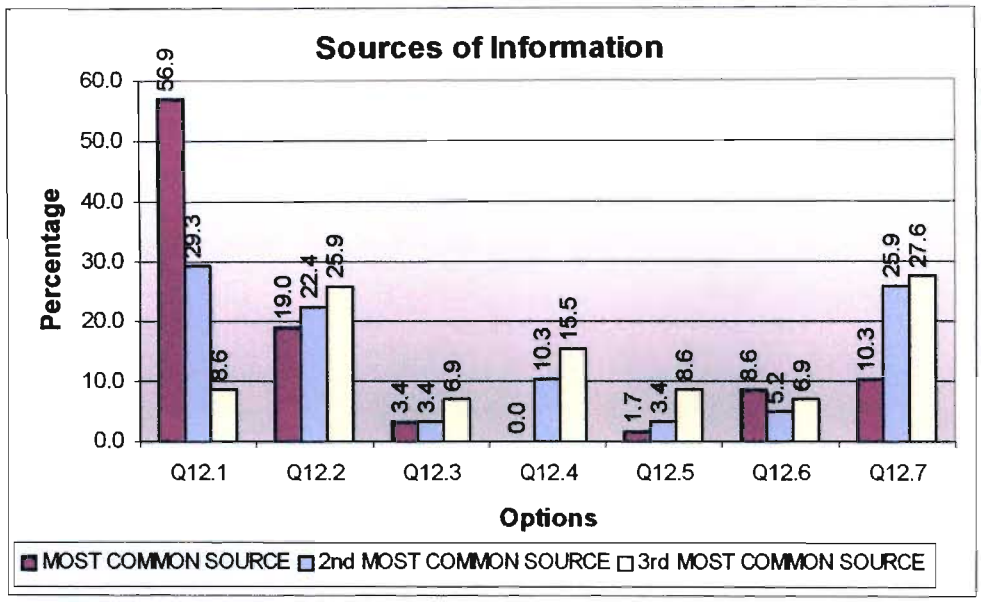

Figure: 14

12.1: The pharmaceutical rep.

56.6% of the responding GPs rated the pharmaceutical rep as the *most common source* of information for a new drug. 29.3% rated the rep as 2^{nd} *most common* and 8.6% rated the rep as 3^{rd} *most common* sources of information.

12.2: The advertisement in the medical journal.

This was the *most common* source for 19%, 2^{nd} *most common* source for 22.4%, and 3^{rd} *most common* source for 25.6%, of information for a new drug for the responding GPs.

12.3: Research article in a medical journal.

This was the *most common* source for 3.4%, 2^{nd} *most common* source for also another 3.4%, and 3^{rd} *most common* source for 6.9% of the respondents.

12.4: The specialist consultant in the field.

No one rated the specialist as the *most common* source. 10.3% of the respondents rated them as 2^{nd} *most common* source and 15.5%of the respondents rated them as 3^{rd} *most common* source.

12.5: Other medical practitioners.

1.7% of the respondents rated it as the *most common* source. 3.4% of the respondents rated it as 2^{nd} *most common* source and was rated as 3^{rd} *most common* source by 8.6% of the respondents.

12.6: Direct mail from the drug company.

It was rated as the *most common* source by 8.6%, 2^{nd} *most common* source for 5.2%, and 3^{rd} *most common* source for 6.9% of the respondents.

12.7: Lecture sponsored by the drug company.

It was rated as the *most common* source by 10.3%, 2^{nd} *most common* source by 25.9%, and 3^{rd} *most common* source by 27.6% of the respondents.

12.8: Other. Specify.

There were no respondents to this option.

Leading Three Sources of Information for a New Drug

Option		Total Not Selecting	Most Common Source	2nd Most Common Source	3rd Most Common Source	Total Percentage Selecting
Q12.1	Respndents	3.0	33.0	17.0	5.0	
	Percentage	5.2%	**56.9%**	**29.3%**	8.6%	94.8%
Q12.2	Respndents	19.0	11.0	13.0	15.0	
	Percentage	32.8%	19.0%	22.4%	**25.9%**	67.3%
Q12.3	Respndents	50.0	2.0	2.0	4.0	
	Percentage	86.2%	3.4%	3.4%	6.9%	13.7%
Q12.4	Respndents	43	0.0	6	9	
	Percentage	74.1%	0.0%	10.3%	15.5%	25.80%
Q12.5	Respndents	50	1	2	5	
	Percentage	86.2%	1.7%	3.4%	8.6%	13.70%
Q12.6	Respndents	46	5	3	4	
	Percentage	79.3%	8.6%	5.2%	6.9%	20.70%
Q12.7	Respndents	21	6	15	16	
	Percentage	36.2%	10.3%	**25.9%**	27.6%	63.80%

Table: 9

From Table 9 above, it can be seen that overall, the option 12.1 (*the pharmaceutical rep*) had the best overall individual response rate (56.9%), with only 3 respondents not choosing it as one of the leading three sources of information for a new drug, i.e. *the pharmaceutical rep* had the highest individual response for the *most common source* (56.9%). The

pharmaceutical rep also had the highest individual response rate for the category *2nd most common source* at 29.3%. This confirms the views of MacLean (2001) and Reekie and Weber (1979: 120), that the pharmaceutical reps are the most important source of information about a new drug. The findings also support the conclusion of Gillingham (1995) that the pharmaceutical reps had an important role to play in continuing medical education of doctors.

Overall, the options 12.7 (*lecture sponsored by the drug company*) and 12.2 (*the advertisement in the medical journal*) are rated joint third individual responses, based upon their individual response rates of 25.9% each. However, option 12.7 (*lectured sponsored by the drug company*) was ranked as *2nd most common source* of information, as opposed to option 12.2 (*the advertisement in medical journal*), which had the highest individual response rate for the category of *3rd most common source* of information.

When considering the total response rate (Table 9), i.e.selecting the option for any of the three ranking alternatives for the common sources of drug information for a new drug, then the following four options had the best cumulative responses (in descending order according to the percentage):

1. (12.1) The pharmaceutical rep. (Total response rate= 94.8%)
2. (12.2) The advertisement in the medical journal. (Total response rate = 67.3%)
3. (12.7) Lecture sponsored by the drug company. (Total response rate = 63.8%)
4. (12.4) The specialist consultant in the field. (Total response rate = 25.8%)

From the above discussion, it is reasonable to conlude that the latter four options (12.1;12.2;12.7 and 12.4) are, on average, the leading four sources of drug information for the respondents according to their ranking as shown above.

Question 13. Leading Three Factors Influencing the Use of a New Drug for the First Time

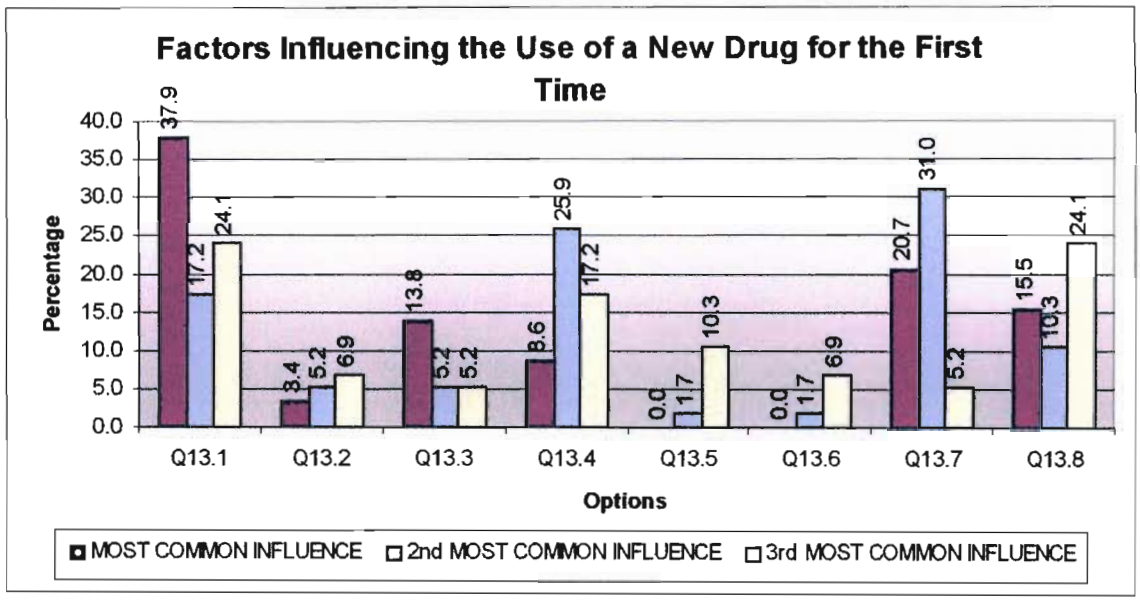

Figure: 15

13.1: The pharmaceutical rep.

37.9% of the respondents rated it as the *most common* influence, 17.2% as the *2nd most common* influence, and 24.1% as the *3rd most common* influence in encouraging the respondent to use (trial) a new drug for the first time.

13.2: The advertisement in the medical journal.

3.4% of the respondents rated it as the *most common* influence, 5.2% as the *2nd most common* influence, and 6.9% as the *3rd most common* influence.

13.3:Research article in a medical journal.

13.8% of the respondents rated it as the *most common* influence, 5.2% as the *2nd most common* influence, and 5.2% as the *3rd most common* influence.

13.4:The specialist consultant in the field.

8.6% of the respondents rated it as the *most common* influence, 25.9% as the *2nd most common* influence, and 17.2% as the *3rd most common* influence.

13.5: Other medical practitioners.

No respondents chose it as the *most common* influence. 1.7% rated it as *2nd most common* influence, and 10.3% rated it as the *3rd most common* influence.

13.6: Direct mail from the drug company.

No respondents chose it as the *most common* influence. 1.7% rated it as the *2nd most common* influence, and 6.9% rated it as the *3rd most common* influence.

13.7: The sample given by the rep.

20.7% of the respondents rated it as the *most common* influence. Further 31% of the respondents rated it as the *2nd most common* influence and 5.2% rated it as the *3rd most common* influence.

13.8: Lecture sponsored by the drug company.

15.5% of the respondents rated it as the *most common* influence, 10.3% as the *2nd most common* influence, and 24.1% rated it as the *3rd most common* influence.

13.9: Other. Specify.

There were no respondents to this option.

Leading Three Factors Influencing the Use of a New Drug for the First Time

Option		Option Not Selected	Most Common Influence	2nd Most Common Influence	3rd Most Common Influence	Total Selecting
Q13.1	Respondents	12	22	10	14	
	Percentage	20.7%	**37.9%**	17.2%	**24.1%**	79.2%
Q13.2	Respondents	49	2	3	4	
	Percentage	84.5%	3.4%	5.2%	6.9%	15.5%
Q13.3	Respondents	44	8	3	3	
	Percentage	75.9%	13.8%	5.2%	5.2%	24.2%
Q13.4	Respondents	28	5	15	10	
	Percentage	48.3%	8.6%	**25.9%**	17.2%	51.7%
Q13.5	Respondents	51	0	1	6	
	Percentage	87.9%	0.0%	1.7%	10.3%	12.0%
Q13.6	Respondents	53	0	1	4	
	Percentage	91.4%	0.0%	1.7%	6.9%	8.6%
Q13.7	Respondents	25	12	18	3	
	Percentage	43.1%	20.7%	**31.0%**	5.2%	56.9%
Q13.8	Respondents	29	9	6	14	
	Percentage	50.0%	15.5%	10.3%	**24.1%**	49.9%

Table: 10

From Table 10 above, based upon the percentage of the respondents, option 13.1 (*the pharmaceutical rep*) has the highest overall individual response rate which is also the highest response rate for the *most common influence* at 37.9%. Option 13.7(*The sample given by the rep*) had the second highest overall individual response rate at 31% and it also had the highest

response rate for the *2nd most common influence*. Option 13.4 (*the specialist consultant in the field*) had the third highest individual response rate at 25.9% and it was also the second highest individual response rate for the ranking of *2nd most common influence*. Options 13.1 (*the pharmaceutical rep*) and 13.8 (*lecture sponsored by the drug company*) had the next (fourth) highest individual response rates at 24.1% each. The latter two were also the joint first in the category of *3rd most common influence.*

When considering the total response rate (Table 10), i.e.selecting the option for any of the three ranking alternatives for the sources of influence to encourage trial of a new drug, then the following four options had the best cumulative responses (in descending order according to the percentage):

1. (13.1) The pharmaceutical rep. (Total response rate = 79.2%)
2. (13.7) The sample given by the rep. (Total response rate = 56.9%)
3. (13.4) The specialist consultant in the field. (Total response rate = 51.7%)
4. (13.8) Lecture sponsored by the drug company. (Total response rate = 49.9%)

The leading source of drug information and the leading influence encouraging trial use of a new drug, are identical, i.e. *the pharmaceutical rep.* The research supports the finding by Wysong (1998) that the pharmaceutical reps are more likely to influence the doctors to prescribe newer, more expensive drugs. The second most influential factor to induce a new drug trial, '*The sample given by the rep'* is inextricably linked to '*the pharmaceutical* rep', as there can be no free sample without the rep to give it to the doctor. The findings of this research contradict the findings of Gonul et al (2001) that detailing and sampling mostly have an informative effect, but the findings are confirm that of IMS Health (2002, paragraph 4) that drug sampling "continues to play a significant role in physicians' prescribing decisions, more than advertising".

Although '*the advertisement in a medical journal'* was found to be the second most common source of drug information for a new drug, it was a distant 6th factor for encouraging the trial use of a new drug (based upon their cumulative response rates). Similar to the findings for the sources of drug information, *'the specialist consultant in the field'* and the '*lecture sponsored by a drug company'* are also important influencers for encouraging the trial use of a new drug,

with *'the specialist consultant in the field'* having a slightly greater influence than the *'lecture sponsored by a drug company'*.

Questions 14 & 15: Evaluation of Factors Influencing the prescribing Decisions

Questions 14 and 15 evaluate the relative influences of established factors on the GPs' prescribing decisions for an existing and a new drug respectively. Identical factors were evaluated for the both categories of drugs, with the inclusion of doctor's *'previous experience with the drug'* under Question 14 only, as for an obvious reason the latter cannot be applicable for a new drug.

Question 14. The Relative Influence of Various Factors on the Prescribing Decision for an Existing Drug

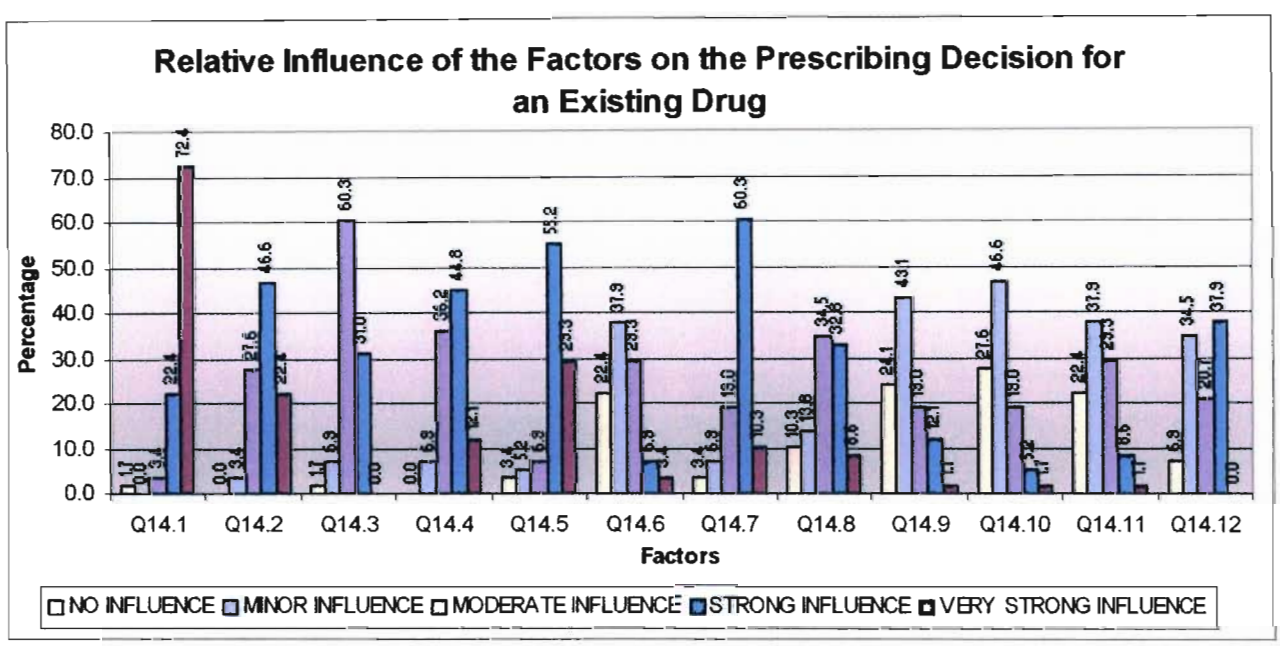

Figure: 16

14.1: Your previous experience with the drug.

The majority of the respondents (72.4%) considered it to have a *very strong influence.* A further 22.4% of the responding GPs considered it a *strong influence*. 3.4% rated it as a *moderate influence* and the remaining 1.7% rated it to have *no influence*.

14.2: Recommendations by the specialist consultant.

22.4% of the respondents rated it to have a *very strong influence*, 46.6% rated it as a *strong influence*, 27.6% rated it as *moderate influence*, and the remaining 3.4% rated it as a *minor influence*.

14.3: Information from the pharmaceutical rep.

60.3% of the respondents rated it as a *moderate influence*, 31% rated it as a *strong influence*, 6.9% rated it as a *minor influence*, and the remaining 1.7% rated it to have *no influence.*

14.4: Information from the medical journals.

44.8% of the respondents rated it as a *strong influence*, 12.1% rated it as a *very strong influence*, 36.2% rated it as a *moderate influence*, and the remaining 6.9% rated it as a *minor influence.*

14.5: Information from the CME/CPD meetings.

The majority (55.2%) of the respondents rated it as a *strong influence*, with further 29.3% rating it as a *very strong influence*. The percentage of respondents for *no influence, minor influence*, and *moderate influence* were 3.4%, 5.2%, and 6.9% respectively.

14.6: Request from the patient.

The majority (37.9%) of the respondents rated it to have a *minor influence* and further 29.3% rated it to have a *moderate influence*. 22.4% of the respondents said it had *no influence*, with 6.9% and 3.4% of the respondents saying it had *strong influence* and *very strong influence* respectively.

14.7: The retail prices of the drug.

The majority (60.3%) of the respondents rated it to be a *strong influence*, with another 10.3% stating it to be a *very strong influence*. The percentage of the respondents rating it *no influence*, *minor influence*, and *moderate influence* were 3.4%, 6.9%, and 19% respectively.

14.8: Whether the drug is on the Medical Scheme's EDL.

The majority of the respondents rated it to have moderate to strong influence with 34.5% rating it as *moderate influence* and 32.8% rating it as a *strong influence*. Only 8.6% rated it to be a *very strong influence*. 10.3% of the respondents felt it had *no influence* and the remaining 13.8% rated it to have a *minor influence*.

14.9: Product reminders, e.g. pens/note pads.

The majority of the respondents rated it to have minor to no influence with 24.1% stating *no influence* and 43.1% stating it to have a *minor influence*. The percentage rating it *moderate, strong*, and *very strong influence* were 19%, 12.1%, and 1.7% respectively.

14.10: An appeal from the rep for your support.

The majority (46.6%) rated it to have a *minor influence* and 27.6% stated it to have *no influence.* The percentage of the respondents rating it to have *moderate, strong*, and *very strong influences* were 19%, 5,2%, and 1.7% respectively.

14.11: How well you get along with the rep for that drug.

The majority (37.9%) of the respondents rated it to have a *minor influence* with another 29.3% rating it to have a *moderate influence*. 22.4% felt it had *no influence*. 8.6% rated it to have a *strong influence* and 1.7% rating it to have a *very strong influence.*

14.12: The reputation/image of the drug company.

37.9% of the respondents felt it had a *strong influence*. 34.5% stated it to have a *minor influence* and 20.7% stated it to have a *moderate influence*. The remaining 6.9% felt it had *no influence*.

14.13. Other. Please specify.

The following additional factors/comments were mentioned.

- "Side effects (adverse reaction)"

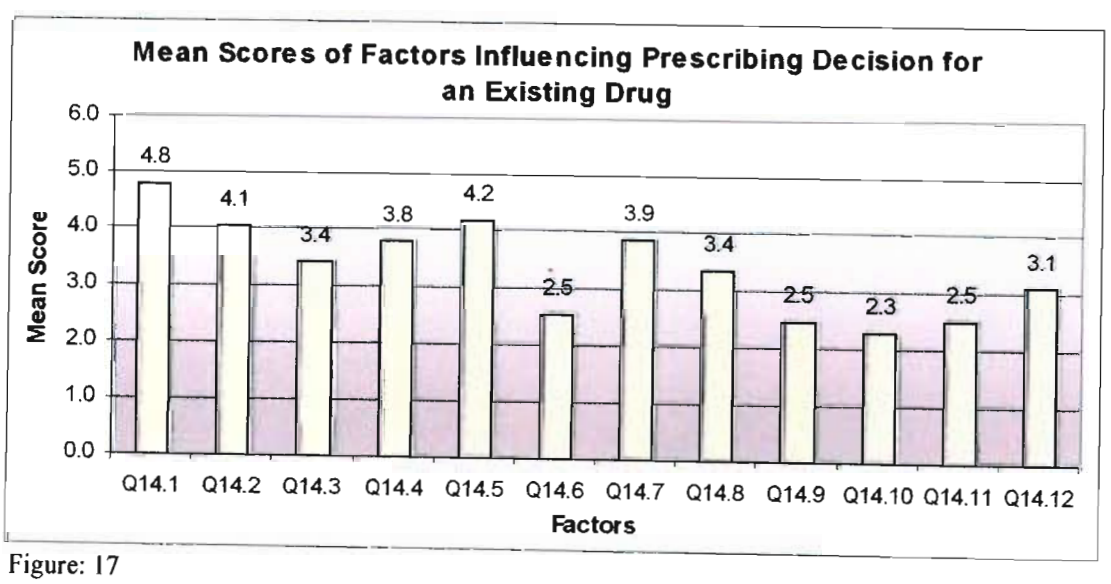

Figure: 17

Figure 17 shows the mean influential scores for the factors influencing the prescribing decisions for an existing drug. These factors are listed in table 11: (Ranked in descending order based on their mean scores)

Factors influencing the Prescribing Decision for an Existing Drug

Rank	Factor	Mean Score
1	(14.1) Doctor's previous experience with the drug	4.8
2	(14.5) Information from the CME/CPD meetings	4.2
3	(14.2) Recommendation by the specialist consultant	4.1
4	(14.7) The retail price of the drug	3.9
5	(14.4) Information from the medical journals	3.8
6	(14.3) Information from the pharmaceutical rep.	3.4
6	(14.8) Whether the drug is on Medical Scheme's EDL	3.4
8	(14.12) The reputation/image of the company	3.1
9	(14.6) Request from the patient	2.5
9	(14.9) Product reminders, e.g. pens/note pads.	2.5
9	(14.11) How well the doctor gets along with the rep	2.5
12	(14.10) An appeal from the rep for the doctor's support	2.3

Table: 11

From Table 11 above, factor 14.1 (*doctor's previous experience with the drug*) was the highest rated factor. The findings of this research show a reversal of ranking compared to the findings of Friedman (1991) who ranked the specialist consultant as 2nd and CME meetings as 3rd according to their mean influential scores. This is possibly due to the increased importance of CME/CPD meetings to the GPs to obtain CPD points for continued registration with the regulatory body, Health Professional Council of South Africa (HPCSA). Factors 14.3 and 14.8 had identical mean influential scores and are therefore ranked joint 6th. Similarly, factors 14.6, 14.9, and 14.11 also had identical mean influential scores and are thus ranked joint 9th.

Paired Samples Tests (appendix III) demonstrated statistically significant difference between factors 14.1 (ranked 1st) and 14.5 (ranked 2nd) at 95% confidence level. Thereafter Paired Samples Tests were done pairing factors 14.5, 14.2, 14.7, and 14.4 with factor 14.3. The

results show all of them to be statistically different from factor 14.3, i.e. there were statistically significant differences when *information from CME/CPD meetings, recommendation by the specialist consultant, the retail price of the drug,* and *information from the medical journals* where paired with *information from the pharmaceutical rep.*

Question 15. The Relative Influence of Various Factors on the Prescribing Decision for a New Drug

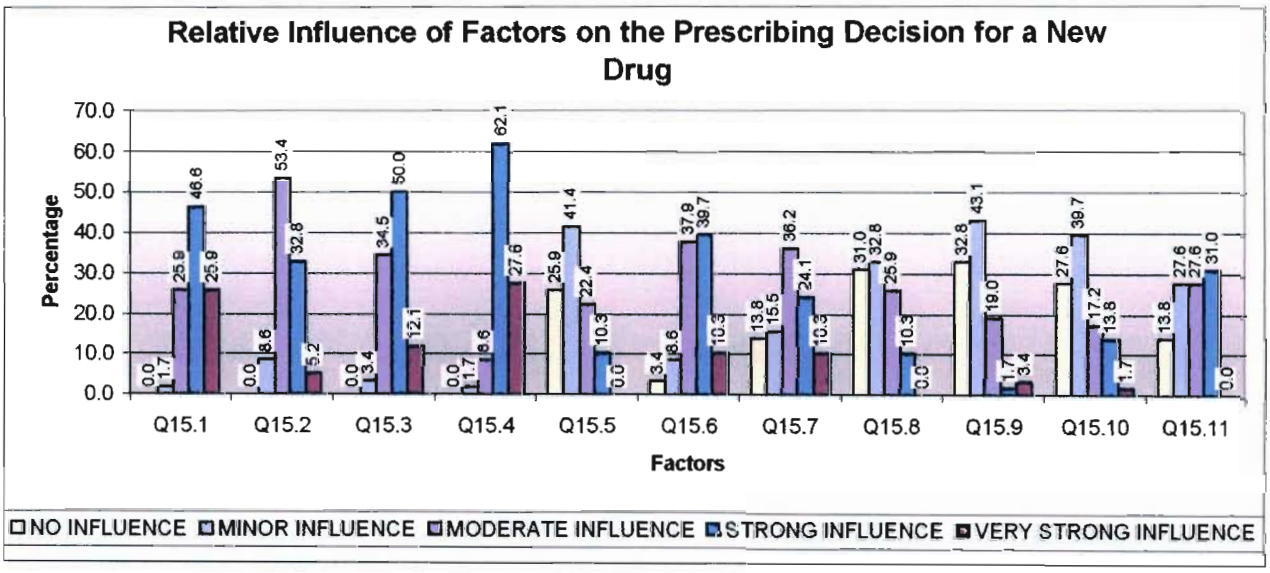

Figure: 18

15.1: Recommendation by the specialist consultant.

The majority (46.6%) of the respondents rated it as a *strong influence*, with further 25.9% rating it as a *very strong influence*. 25.9% considered it a *moderate influence* and the remaining 1.7% rated it as a *minor influence*.

This factor was cross-tabulated with factor 12.4 (the *specialist consultant in the field* as the source of new drug information). The result is shown in Figure 19.

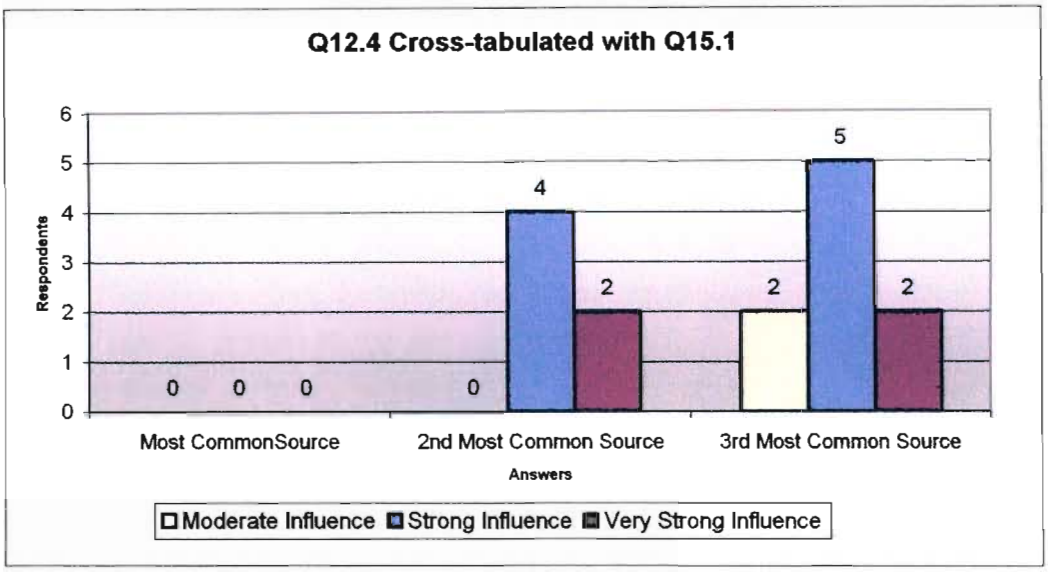

Figure: 19

The cross-tabulation (Figure 19) showed that, from the respondents who ranked the Specialist consultant as the *2nd most common* source of new drug information, 4 rated it to have a *strong influence*, and 2 rated it as a *very strong influence*. Those respondents who ranked the Specialist consultant as the *3rd most common* source, 2 rated it as *moderate influence,* 5 rated it as *strong influence,* and 2 rated it as a *very strong influence*.

15.2: Information from the pharmaceutical rep.

The majority (53.4%) of the respondents considered it a *moderate influence*, 32.8% a *strong influence* and 5.2% a *very strong influence*. The remaining 8.6% considered it a *minor influence.*

This factor was cross-tabulated with factor 12.1 (*the pharmaceutical rep* as the source of new drug information). The result is shown in Figure 20.

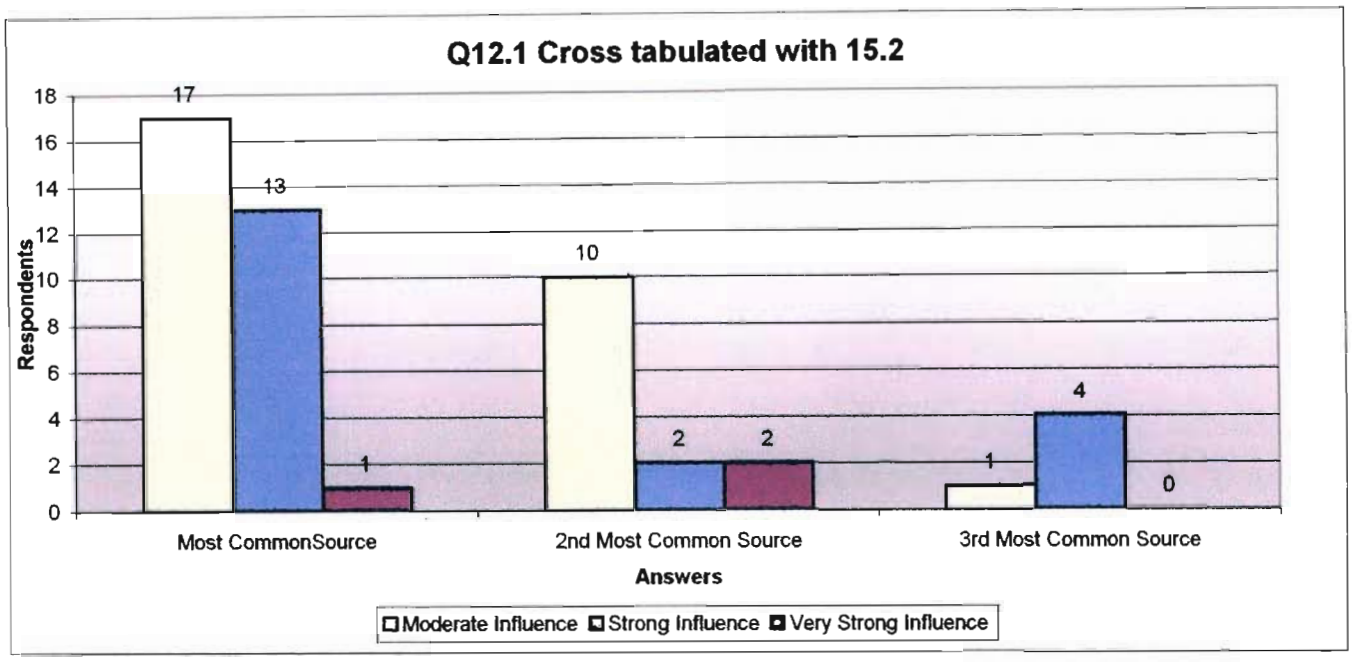

Figure: 20

From the respondents who ranked the pharmaceutical rep as the *most common source*, 17 respondents rated the information from the rep to have a *moderate influence,* 13 respondents rated it to have a *strong influence*, and 1 respondent rated it to have a *very strong influence*. From the respondents who ranked the rep as the *2nd most common* source of new drug information, 10 also rated it to have a *moderate influence*, 2 rated it as a *strong influence*, and 2 rated it as a *very strong influence*. Those respondents who ranked the pharmaceutical rep as *3rd most common* source, 1 rated it as *moderate influence* and 4 rated it as a *strong influence.*

Factors 15.2 and 12.1 were further cross-tabulated with the factor 13.1 (*the pharmaceutical rep as the influence to induce trial use of the drug*). The result (Figure: 21) revealed that from the respondents who ranked the pharmaceutical rep as the *most common source* of new drug information and the *most common influence* to induce trial use, 8 rated it as *moderate influence*, 8 rated it as *strong influence*, and 1 rated it as a *very strong influence*. Also those that rated the reps as the *most common source* but rated them as the *2nd most common influence*, 1 rated it as *moderate influence* and 1 rated it as a *strong influence*.

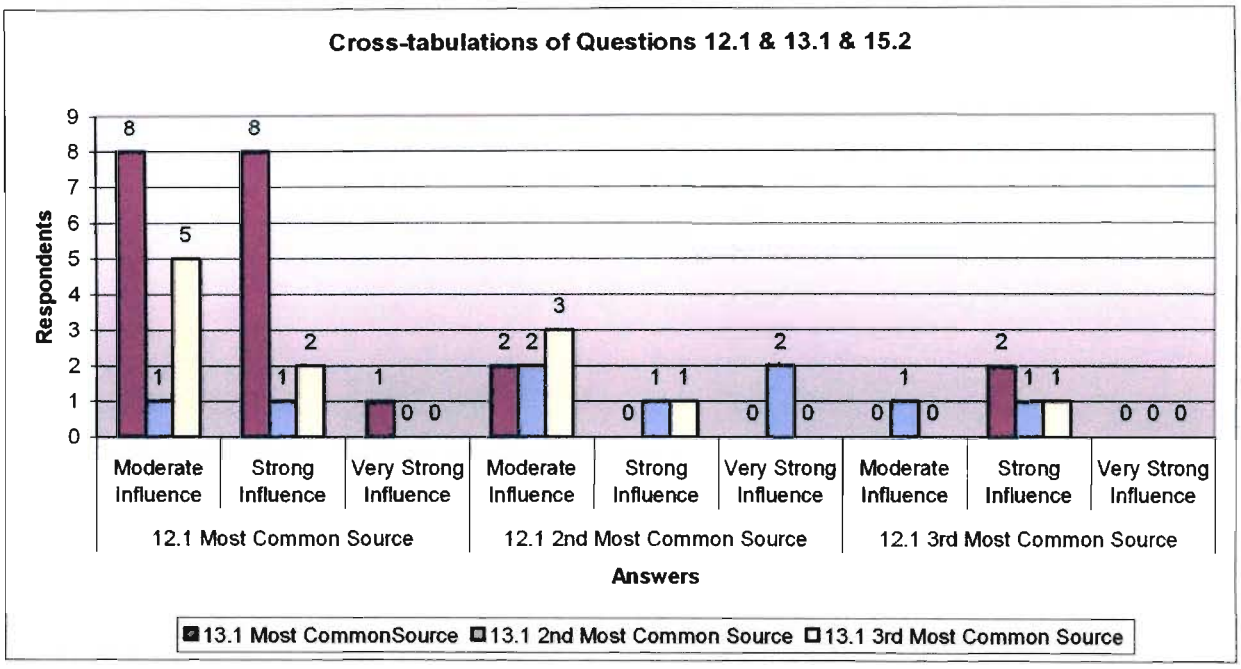

Figure: 21

15.3: Information from the medical journal.

The majority (50%) rated it as a *strong influence*, 34.5% as a *moderate influence* and 12.1% as a *very strong influence*. The remaining 3.4% rated it as a *minor influence*.

This factor was cross-tabulated with factor 12.2 (*the advertisement in the medical journals* as the source of new drug information). The result is shown in Figure 22.

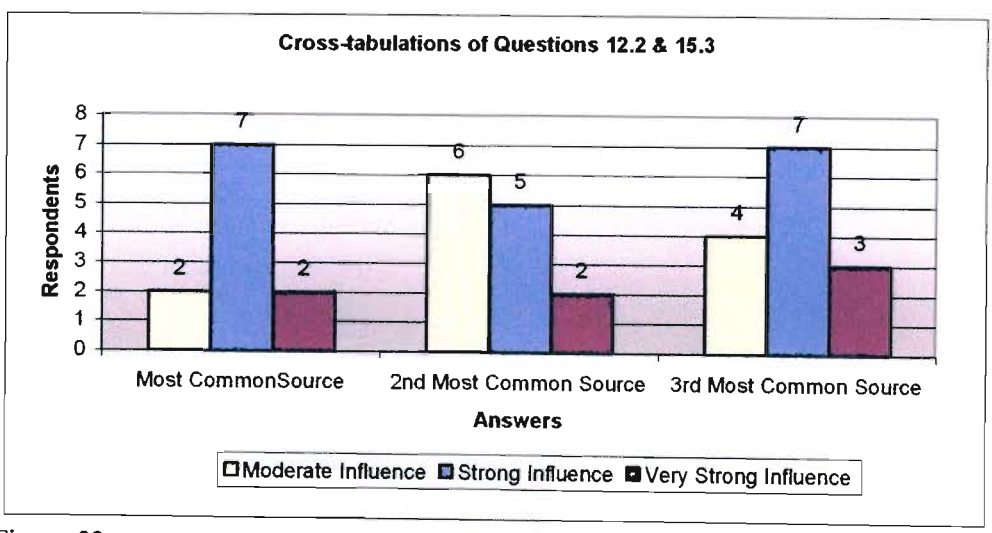

Figure: 22

From the respondents who ranked the advertisement in the medical journals as the *most common source*, 2 respondents rated the information from the journals to have a *moderate*

influence, 7 respondents rated it to have a *strong influence*, and 2 respondents rated it to have a *very strong influence*. From the respondents who ranked the journals as the *2nd most common* source of new drug information, 6 also rated it to have a *moderate influence*, 5 rated it as *strong influence*, and 2 rated it as a *very strong influence*. Those respondents who ranked the medical journals as *3rd most common* source, 4 rated it as *moderate influence,* 7 rated it as *strong influence,* and 3 rated it as a *very strong influence*.

15.4: Information from the CME/CPD meetings.

The majority (62.1%) rated it as a *strong influence* with further 27.6% rating it as a *very strong influence.* 8.6% rated it as a *moderate influence* and the remaining 1.7% rated it as a *minor influence*.

This factor was cross-tabulated with factor 12.7, *lectures sponsored by the drug company,* (Figure 23).

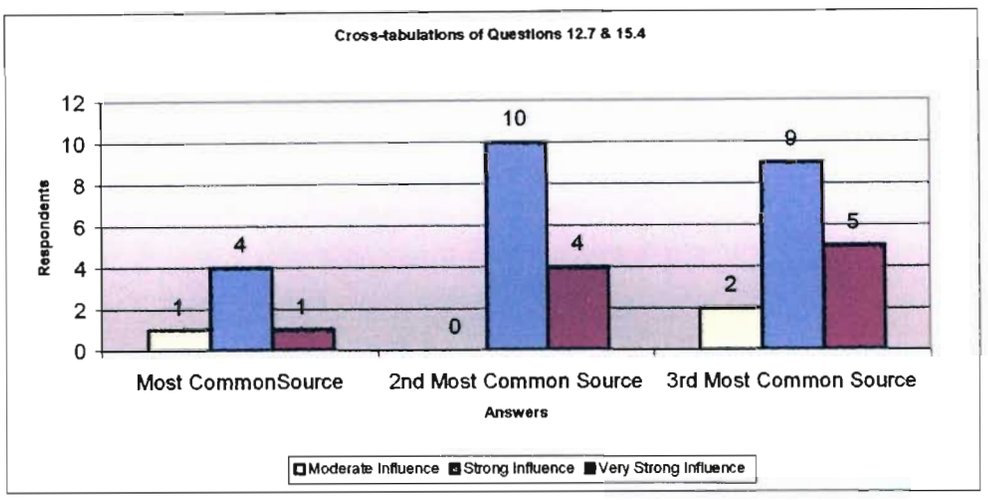

Figure: 23

From the respondents who ranked the sponsored lectures as the *most common source*, 1 respondents rated the information from the CME/CPD meetings to have a *moderate influence,* 4 respondents rated it to have a *strong influence*, and 1 respondent rated it to have a *very strong influence*. From the respondents who ranked the sponsored lectures as the *2nd most common* source of new drug information, 10 rated it as *strong influence*, and 4 rated it as a *very strong influence*. Those respondents who ranked the sponsored lectures as the *3rd most common* source, 2 rated it as *moderate influence,* 9 rated it as *strong influence,* and 5 rated it as a *very strong influence*.

15.5: Request from the patient.

The majority (41.4%) rated it as a *minor influence*, 22.4% as a *moderate influence* and 10.3% as a *strong influence*. The remaining 25.9% said that it had *no influence*.

15.6: The retail price of the drug.

The majority (39.7%) rated it as a *strong influence*, followed by 37.9% rating it as a *moderate influence*. 10.3% rated it as a *very strong influence*. 8.6% rated it as a *minor influence* and the remaining 3.4% rated it as *no influence*.

15.7: Whether the drug is on the Medical Scheme's EDL.

36.2% rated it as a *moderate influence*, followed by 24.1% who rated it as a *strong influence*. 10.3% rated it to have a *very strong influence*. 15.5% rated it as a *minor influence* and the remaining 13.8% said it had *no influence*.

15.8: Product reminders, e.g. pens/note pads.

32.8% rated it to have a *minor influence*, followed by 31% rating it have *no influence*. 25.9% rated it to have a *moderate influence* and the remaining 10.3% rating it to have a *very strong influence*.

15.9: An appeal from the rep for your support.

The majority (43.1%) rated it to have a *minor influence*, followed by 32.8% rating it to have *no influence*. 19% rated it as a *moderate influence*, 1.7% as a *strong influence* and the remaining 3.4% as a *very strong influence*.

15.10: How well you get along with the rep for that drug.

The majority (39.7%) rated it to have a *minor influence*, followed by 27.6% rating it to have *no influence*. 17.2% rated it as a *moderate influence*, 13,8% rated it as a *strong influence* and the remaining 1.7% as a *very strong influence*.

15.11: The reputation/image of the drug company.

31.1% rated it to have a *strong influence*. Equal number (27.6%) rated it to have *moderate* and *minor influence*. The remaining 13.8% rated it to have *no influence*.

5.12: Other. Specify.

The following were mentioned.

- *"Adverse reactions."*

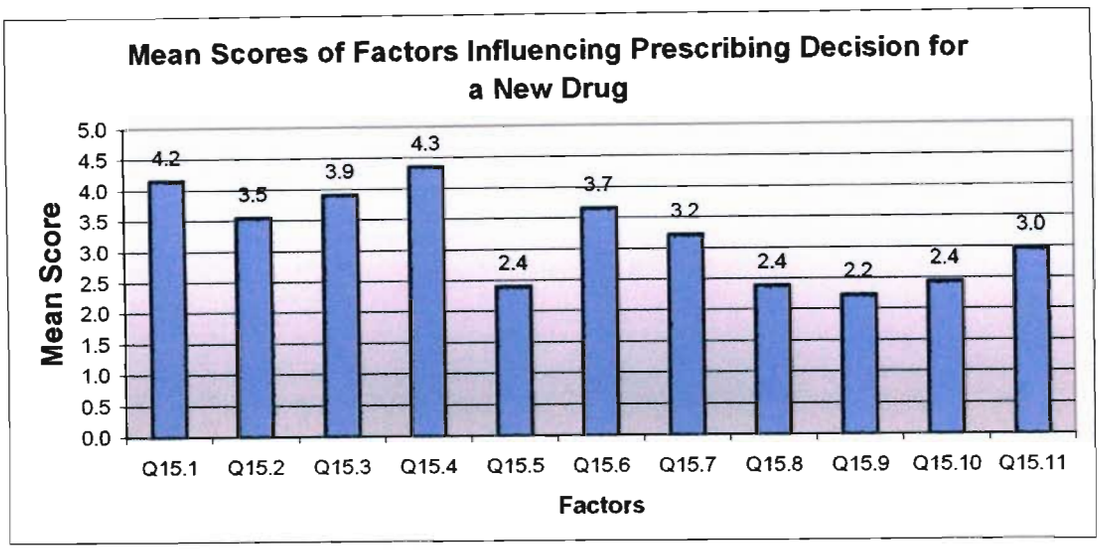

Figure: 24

Figure 24 depicts the mean influential scores for the prescribing decision for a new drug. These factors are ranked in descending order, based on their mean scores, and listed in Table 12.

Factors influencing the Prescribing Decision for a New Drug

Rank	Factor	Mean score
1	(15.4) Information from the CME/CPD meetings	4.3
2	(15.1) Recommendation by the specialist consultant	4.2
3	(15.3) Information from the medical journals	3.9
4	(15.6) The retail price of the drug	3.7
5	(15.2) Information from the pharmaceutical rep	3.5
6	(15.7) Whether the drug is on the Medical scheme's EDL	3.2
7	(15.11) The reputation/image of the drug company	3.0
8	(15.5) Request from the patient	2.4
8	(15.8) Product reminders, e.g. pens, note pads.	2.4
8	(15.10) How well you get along with the rep for that drug	2.4
11	(15.9) An appeal from the rep for your support	2.2

Table: 12

The additional factor of doctor's previous experience with the drug (as an influential factor for an existing drug, in Question 14) was the highest rated influential factor for the prescribing decision for an *existing drug* (mean score = 4.8). As this factor cannot be applicable for a prescribing decision of *new drug*, the factors rated subsequently in the Table 11 will be compared with the findings in Table 12.

The highest rated influential factor for a new drug (*information from the CME/CPD meetings*) is also the highest rated (after ignoring factor 14.1) for an existing drug with similar mean score ratings (4.3 for an existing vs. 4.2 for a new drug). *The recommendation by the specialist consultant* is the following factor in both categories, i.e. existing vs. new drug. The latter factor also has similar mean scores for both existing and new drugs. Again, there was reversal of ranking compared to the findings of Friedman (1991), as discussed under Question 14.

Information from the medical journal is slightly more important influential factor for a new drug compared to *the retail price of the drug,* which has a slightly more importance than the *Information from the medical journal* in the case of an existing drug. The high ranking for *the retail price of the drug* (price-sensitivity), supports the finding by Gonul *et al* (2001) that the physicians were more price-sensitive for private insurance patients (similar to the medical aid schemes in South Africa). The *information from the pharmaceutical rep* as an influential factor follows all above factors in both categories, i.e. it is ranked 6th for an existing drug and ranked 5th for a new drug. The research findings also support the Marplan Study (1981) where the medical journals and CME meetings were found to be more influential than the pharmaceutical reps. Factors 15.5, 15.8, and 15.10 have identical mean influential scores and are thus ranked joint 8th.

Paired Samples Tests (appendix III) were done comparing the mean influential scores. The difference between factors 15.4 and 15.1 was not statistically significant at 95% confidence level. However, the differences between factors 15.1 and 15.3 individually paired with factor 15.2 showed them to be statistically significant. The difference between factors 15.6 and 15.2 was not statistically significant. Therefore the mean influential scores for *recommendation by the specialist consultant* and *information from the medical journals* were significantly different from the mean influential score for *information from the pharmaceutical rep.*

Question 16. Evaluation of basic statistical knowledge of the GPs.

Three questions were designed to evaluate the respondents' appreciation of basic statistics since majority of the reps use 'statistical' data to demonstrate the supposed superiority of their drug.

16.1: Do you generally check if the study quoted in the rep's detail-aids is an independent or a company sponsored study?

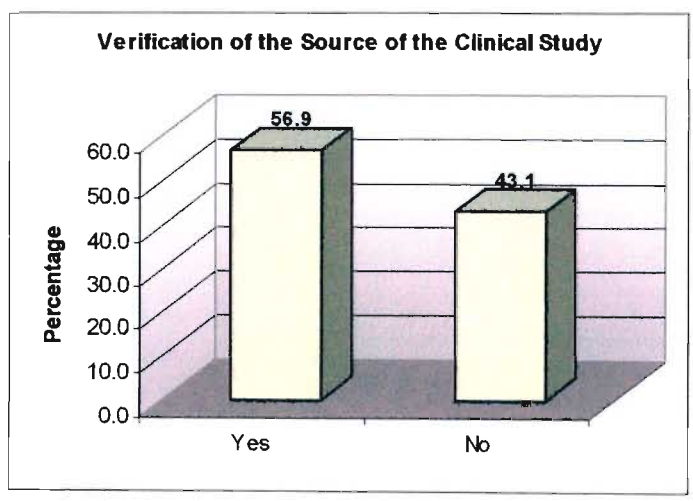

Figure: 25

56.9% of the respondents stated YES and 43.1% stated NO.

16.2: Do you check if the statistical information is misquoted or misleading?

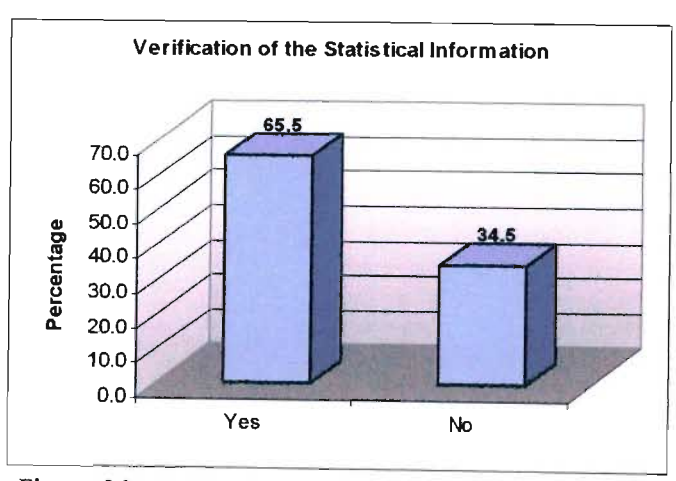

Figure: 26

65.5% of the respondents stated YES and 34.5% stated NO.

16.3:Are you reasonably able to critically evaluate the statistical elements of the information presented to you? For example, the 'p' value.

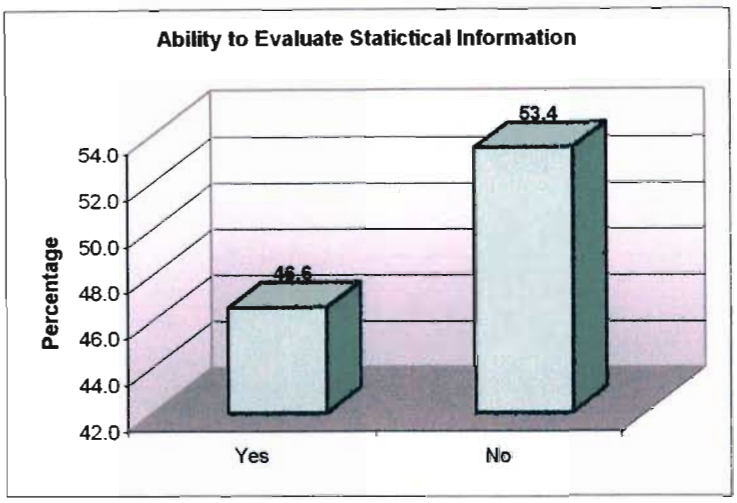

Figure: 27

53.4% of the respondents stated NO and 46.6% stated YES. 10 respondents answered YES to all 3 questions. From the Respondents who said YES to 16.1 and 16.2, 17 respondents went on to say NO to 16.3.

Question 17. Evaluates the Respondents' Opinion on Promotion of Pharmaceutical Drugs.

17.1: In your opinion, do you feel that the free non-medically related give-aways ('Gifts') by the pharmaceutical companies are unethical promotional practices?

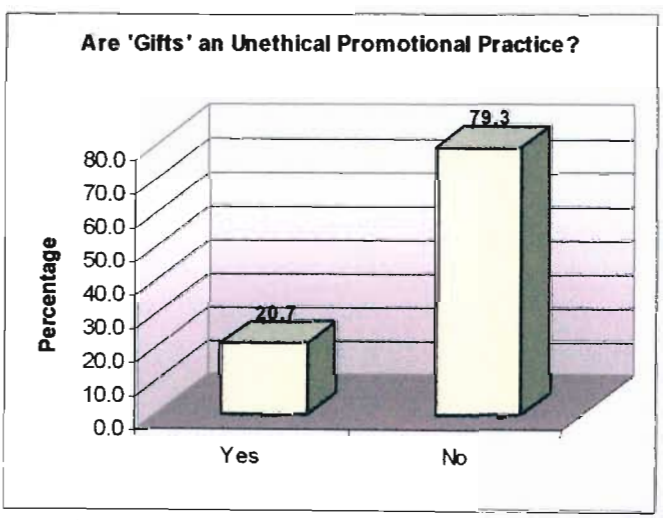

Figure: 28

The majority (79.3%) of the respondents stated NO, with only 20.7% answering YES.

17.2: Do the 'Gifts" result in the doctor feeling obligated to prescribe the sponsoring company's drug?

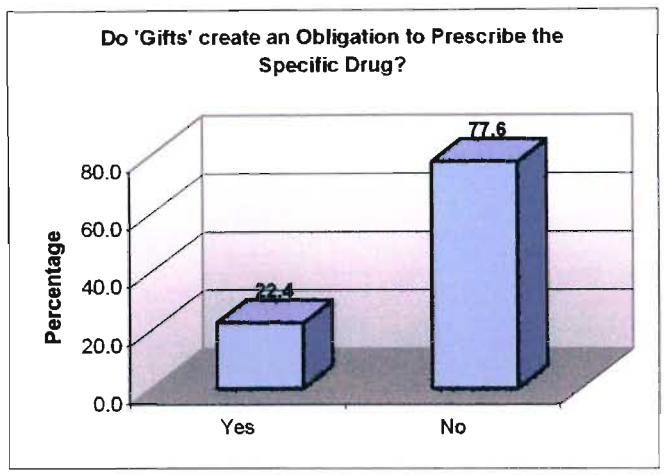

Figure: 29

The majority (77.6%) stated NO with only 22.4 stating YES.

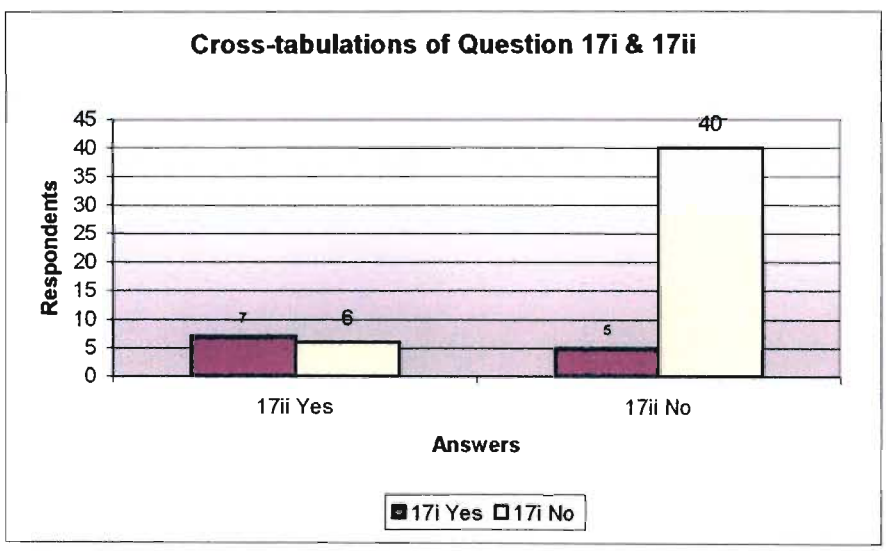

Figure: 30

Forty respondents said *NO* to both. Seven respondents answered *YES* to both 17.1 and 17.2. Six respondents, who said *NO* to 17.1, went on to say *YES* to 17.2. Five respondents, who said *YES* to 17.1, went on to say *NO* to 17.2. The differences in opinions with the majority of the respondents believing that there is minimal ethical risk are consistent with the findings of Waud (1992).

Question 18: Please specify if there are any other factors not mentioned in the questionnaire, which may influence your decision to prescribe a pharmaceutical drug.

The following additional factors/comments were mentioned:

- *"Sponsorship to medical congresses by a pharmaceutical company, in my opinion, will greatly influence a doctor to prescribe a particular drug."*
- *"The community I am dealing with and the illness of the patient."*
- *"The restrictions imposed by managed care organisations. Threats by medical aids to stop payment if the practice profiles are out of 'norm'."*
- *"Sampling of drugs esp. new is essential. Often poor feedback from patient esp. if they get better. They tend to forget to notify you."*
- *"Companies that slate other companies should be censured. The individual companies must sell us product on its own merit."*
- *"Where there are numerous of the same type of drug on the market – relationship with the reps and promotional perks are deciding factors."*
- "
    1. *The cost-effectiveness (price) of the drug.*
    2. *Being provided with samples.*
    3. *Attending a product launch.*
    4. *Influence of colleagues.*
    5. *Promotional literature and review articles.*
    6. *Product monographs and literature."*
- *"The govt. meddling is pissing me off and killing off the multinationals."*

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

This research study has attempted to determine and grade the perceived influences of various factors on the general practitioners' (GPs') choice of prescription drugs. One of the crucial aims of the study was to investigate the promotional activity of the pharmaceutical representatives in order to determine the relative importance of various characteristics of the promotion by the pharmaceutical reps. Previous studies by Pitt and Nel (1988), Wysong (1998), and MacLean (2001) had shown that, of all promotional activities undertaken by the pharmaceutical companies, the pharmaceutical representatives had the greatest influence on the GPs' prescribing behaviour.

This research had a very good response rate of 87%, which minimises but does not exclude non-response error. The opinions of the non-respondents stay unquantifiable. The descriptive nature of the research allows inferences to be drawn for a larger population. The results of the research satisfied all stated objectives, as well as offered an insight into some additional issues.

There was a predominance of male respondents in the survey, similar to the surveys Pitt and Nel (1988), Friedman (1991), and Gillingham (1995). Similar to the latter mentioned studies, the gender of the respondents was not found to have any significant influence on the GPs' receptiveness to the various determinants of prescribing behaviour. This is bearing in mind that similar to Pitt and Nel (1988), only 12% of the respondents were female. The majority of the respondents were in solo, predominantly dispensing practices that were contracted to medical aid schemes and had predominantly medical aid patients on their register. The fact that the majority of the respondents were contracted to the medical aid schemes and thus reimbursed by the said third party health care funders, appears to have a significant influence on the GPs' choice of prescription drugs as will be discussed below. Similar to the findings by Pitt and Nel (1988), there was no clear relationship between the number of years in private practice and the perceived influence of identified factors on the GPs' prescribing habits. The majority (50%) of the GPs were in private practice for more than 10 years and had qualified more than 20 years ago.

The GPs' personal experience with a drug was established to be the most important prescribing influence for an existing drug. The mean score rating for the influential factor of "*previous experience with the drug*" was consistent with the GPs' perception of it as a *very strong influence*. This finding is consistent with the findings by Pitt and Nel (1988) and Friedman (1991), who also ranked the doctor's personal experience with a drug as the most influential factor on the doctor's prescribing habits. The finding also supports Srivastava (2003) who notes that the doctors most readily accepted the drugs that were experienced to have a "better efficacy", and Koekemoer (1987:33) who states that the learning experience is critical in bringing about a change in prescribing habit.

There were major differences noted in the subsequent ranking of the influential factors. Information from CME/CPD meetings was the second most influential factor for an existing drug and the most dominant influence on prescribing decision of a new drug. The mean score rating for the latter factor was consistent with the GPs perception of it as a *strong influence*. This factor was also ranked 2nd in the Marplan Study (1981) and 4th in the study by Pitt and Nel (1988), and 3rd in the study by Friedman (1991). The most likely explanation for the strong perceived influence of CME/CPD meetings is the introduction in 1999, of compulsory attainment of annual prescribed minimum CPD points by the medical practitioners, to maintain their annual registration with the Health Professions Council of South Africa (HPCSA).

The third most influential factor for prescribing an existing drug, as perceived by the GPs was the "*recommendations from the specialist*". The latter was also the second most influential factor for the prescribing of a new drug. It was perceived to be a *strong influence* for both existing and new drugs. Friedman (1991) found the specialist's advice to be the second most important influence. *The information from the medical journals* and *the retail price of the drug* were found to be fourth and fifth influential factors for an existing drug and third and fourth for a new drug respectively. They were more influential than *the pharmaceutical rep* that was ranked sixth for prescribing an existing drug. These findings applied to the prescribing decisions for the existing as well as the new drugs. The fourth and fifth ranked factors were also perceived to have *strong influences*. Pitt and Nel (1988) did not consider the influence of articles from medical journals in their research. The finding of this research shows *the information from medical journals* to be a *strong* and more influential than *the pharmaceutical rep.*

The retail price of the drug emerged as an important factor for the prescribing decisions of both existing and new drugs. The importance of price-sensitivity of the prescribing doctors, confirm the similar finding by Friedman (1991) and Gonul *et al* (2001). Significantly, it was ranked above the pharmaceutical rep as an influential factor. Srivastava (2003) also found the cost-effectiveness of the drug to be the third most important factor for better acceptance of a pharmaceutical drug. The finding can also be ascribed to the fact that the majority of the responding GPs were contracted to the medical schemes and had a patient profile of predominantly medical aid patients. Most medical schemes will only pay for the generic drugs where available and require special motivation from the prescribing doctor for more expensive ethical drugs.

In this study, the pharmaceutical rep was ranked sixth and fifth as an influential factor for the prescribing decision of an existing and a new drug respectively. This is notable departure from the finding of Pitt and Nel (1988) where it was ranked third and Friedman (1991) where it was ranked tenth. In the Marplan Study (1981) it was also ranked sixth. It also contradicts Srivastava's (2003) finding of "regular reminder by medical representatives" to be the second most reason for better acceptance of pharmaceutical drugs by the doctors. This demonstrates that more doctors now rely on the information from CME meetings, the advice of a specialist (opinion leader), the information from the scientific/ medical journals, and the cost of the drug more than the information obtained from the pharmaceutical representative. This will be an appreciated finding for Komesaroff and Kerridge (2002) and Wazana (2000), who raised concerns about the ethical controversy with respect to the influence of the pharmaceutical representatives on the doctors' prescribing decisions.

As mentioned previously, one of the main objectives of this research study was to determine the relative importance of various characteristics of the promotion by the pharmaceutical representatives. The key factors (according to their ranking) relating to the pharmaceutical representatives were established to be: (1) the rep's expertise and knowledge of the drug and the relevant medical condition, (2) the apparent honesty and integrity of the rep, (3) the professionalism of the presentation, and (4) the personality and the friendliness of the rep.

"*The rep's expertise and knowledge…*" was assessed to be an ***absolute must*** with its mean score rating of almost 5. The three subsequently ranked attributes (2 to 4) were concluded to be *very important* with their mean score ratings between 4.0 and 4.4. The top three ranked

factors reflect on the credibility of the sender in persuasive communication and confirm them as the key variables influencing communication as described by Koekemoer (1998) and Schiffman and Kanuk (1994). The fourth ranked factor, "*The personality and the friendliness of the rep*", reflects on the ' source attractiveness' in terms of 'likeability' as put forward by Koekemoer (1998). It also supports Koekemoer's (1998) view that the communication is more likely to be persuasive when the receiver finds the source of the message 'attractive'. The actual physical attractiveness of the reps was found to be the least important factor. There was also an additional comment (question 18) by one of the respondents that "where there are numerous [brands] of the same type of drug on the market – [the] relationship with the reps and promotional perks are deciding factors".

The majority of the respondents also agreed that the pharmaceutical rep from a scientific or a medically allied field was likely to be more persuasive in his/her presentation than a rep from another background. The majority of the respondents did not find the female reps and the reps from a cultural background similar to the doctor, to be more persuasive in their presentations as was suggested by Koekemoer (1998: 45).

There were significant differences in the respondent's preferences with respect to the current frequency and the duration of the rep's visits to the GPs. Many preferred less frequent calls and shorter duration of the visits. Only 56% preferred the current 4 to 6 weekly call rates used by the reps and an equal percentage of respondents (48.3%) preferred the duration of the calls to be between 1 to 5 minutes or between 6 to 10 minutes. The findings support the recommendation by Gonul *et al* (2001) that the scope of personal selling be more carefully scheduled in terms of frequency of sales calls on physicians and the length of the detailing visits.

The pharmaceutical rep emerged as the most common source of new drug information. This confirms the finding of MacLean (2001) that the pharmaceutical reps are the most important source of information about a new drug. The advertisement in the medical journal, the lecture sponsored by the drug company, and the specialist were established to be the second, third, and fourth most common sources of information for a new drug. The findings also support Jones *et al* (2001) who found that the pharmaceutical promotions and the specialist especially influenced general practitioners.

The most dominant influence to induce trial of a new drug was also the pharmaceutical representative. Sampling as a promotional practice was found to be the second most common influence to induce trial of a new drug. These findings support Srivastava (2003) whose research revealed that repeated visits by medical reps (ranked 1st) and sample (ranked 2nd) improved doctors' brand recall and drug trial. The practice of sampling also facilitates direct experience by the doctor, thus increasing the prescriber's personal product experience. It is yet too early to determine the impact of the recent legislative change, prohibiting the drug sampling as a promotional tool, which came into effect on the 2nd May 2003.

The specialist consultants (opinion leaders) were third most common influence to induce trial use of a new drug. The lectures (CME/CPD meetings), which are largely sponsored by the drug companies, were ranked fourth as an influential factor to induce a trial use of a new drug. Advertisement in medical journals, which emerged as the 2nd most common source of new drug information, was rated 6th, as the influential factor to induce trial use of a new drug.

When the factors that influence a trial use of a new drug were compared to the factors that influence more regular prescribing of a new drug, differences were noted. Although, the pharmaceutical representative was the most influential factor to induce a new drug trial by a doctor, it was ranked fifth as an influence for more regular prescribing of a new drug. CME/CPD meetings were found to be the most dominant influence for regular prescribing of a new drug followed by the recommendation by the specialist consultant. Wazana (2000) had also established that there was an increased prescription rate of sponsor's medication from attending sponsored CME by the pharmaceutical speaker.

The evaluation of the respondents' understanding of basic statistical information used by the pharmaceutical representatives in their presentations, revealed that the majority of the GPs did check if the clinical studies quoted in the detail-aids originated from an independent source or not and whether, there was any misrepresentation. However, a significant proportion (53.4%) of the GPs subsequently cited inability to critically evaluate the statistical elements of the excerpts of the clinical studies quoted in the detail-aids. This raises the question of how exactly did the GPs verify that the quoted statistical information was not misrepresented or misleading. It is the researcher's opinion that this limitation may cause the GPs to fail to take notice when there are discrepancies in the comparative data or when biased views are presented at the pharmaceutical company sponsored CME/CPD meeting(s) as suggested by

Schuklenk (2001). The research has already established the important influence of the CME/CPD meetings on the GPs' prescribing behaviour.

Most surprisingly, the majority of the GPs felt that the "gifts" were not unethical promotional practices and that these "gifts" did not result in the obligation to prescribe the sponsoring company's drug. This is contrary to the findings of MacLean (2001:3), who found that as many as 70% of the physician's prescribing could be compromised by accepting "gifts".

The additional comments by the respondents augment the study's finding of importance of direct experience with the drug, the importance of credibility and professionalism of the pharmaceutical representative, the influence of third parties such as medical aid schemes and government, and the importance of CME/CPD meetings.

8.2 LIMITATIONS

Only general practitioners in private practice were surveyed. All specialists and general practitioners in public service were excluded. Area sampling was limited to two suburbs. The ethnic predominance of Asian doctors in the study as a limitation was discussed under research methodology. Although every precaution was taken, the possibility of missing elements cannot be excluded. A possibility of response bias with respect to the assessment of the influence of "gifts' on the GPs' prescribing behaviour cannot be excluded. While inferences can be drawn for a larger population, the results are strictly valid for the area (Pietermaritzburg) where the survey was conducted. The relatively small size of the sample (although statistically significant) is obviously a limitation.

8.3 RECOMMENDATIONS

Firstly, it is recommended that an attempt be made to duplicate this study in other regions with a larger randomly chosen sample size. The study should also be carried out with a random sample of specialist consultants only. It will be useful to determine the influential factors for the specialist since the specialists were found to have a significant influence on the prescribing behaviour of the GPs. The findings support the recommendation by Pitt and Nel (1988) of identifying the important influential factors on specialists (opinion leaders).

Due to the prohibition on drug sampling from 2nd May 2003, the pharmaceutical companies can no longer facilitate the medical practitioners' direct experience by means of a free drug sample. Personal experience with the drug was shown to have the strongest influence on the GPs' prescribing behaviour in this research as well as those of Friedman (1991) and Pitt and Nel (1988. It is thus recommended that the pharmaceutical companies make available in the marketplace, the same 'starter packs' that were previously used for drug sampling, for initiation of therapy by the physicians. This will help to drastically lower the cost of initiation of therapy by virtue of the small quantity of drug in the starter pack, as well as facilitate direct experience by the prescribing doctors.

The pharmaceutical companies should also critically evaluate their allocation of the promotional budget. Greater promotional allocation is recommended towards the sponsorship of CME/CPD meetings and clinical trials by the local specialists based on the findings of their compelling influential factor ranking in this research as discussed under conclusion. It is also recommended that the specialists selected, are those who are not only regarded and respected as authorities in the field, but also perceived to render independent, unbiased opinions. This will greatly improve the source (specialist's) credibility and the acceptance of the message by the receivers (GPs) as suggested by Koekemoer (1998: 45-49). The companies will also have to take into consideration the emergence of price-sensitivity as a very important influential factor for prescribing decisions and give an added consideration to the pricing component of the marketing mix.

The companies should preferably employ people from scientific/medically-allied fields as pharmaceutical reps. There should also be regular review and training of the pharmaceutical reps to maintain a high level of credibility and professionalism as the latter were perceived to be the most important characteristics of the pharmaceutical reps. The pharmaceutical reps should also frankly determine the doctor's preferred frequency and duration of calls and comply with these preferences rather than strictly following the pharmaceutical companies' existing guidelines of 4-6 weekly calls on the selected segment of doctors. This will improve the doctor-pharmaceutical rep relationship and improve persuasiveness of the pharmaceutical reps.

Based on the findings of this study, the persuasiveness of the "gifts" to the doctor is questionable and together with the independent ethics views expressed, this promotional practice should be severely curtailed or stopped completely.

Furthermore, the medical schools should undertake to educate the undergraduate students in basic statistical evaluation of research articles and create awareness of factors that may lead to inappropriate prescribing.

8.4 AREAS OF FURTHER RESEARCH

Future research should explore the impact of the various new legislative changes that have come into effect in South Africa recently, as well as those coming into effect over the next two years. The important influential factors for the prescribing behaviour of the specialists should also be researched. An area not covered in this research was the medical practitioner's motivation/reason for agreeing to see the pharmaceutical reps. For example, is it to obtain information on drugs? Does it represent a break in the routine? Alternatively, is it because they enjoy receiving "gifts"? Given the unique history of South Africa, future researchers should also attempt to determine if there are any differences in the prescribing behaviour of doctors from different ethnic backgrounds.

Other important areas of future research are the extent and the type of the influence exerted by the managed care organisations such as medical schemes/insurance groups and the criteria used by the medical practitioners in choosing between ethical and generic drugs. With respect to the latter, it is important to determine the additional factors besides the lower cost of the generic medications. It may also be interesting to see, by means of consumer (patients) research, the effectiveness of the current direct-to-consumer corporate advertising and if its influence extends to the other drugs manufactured by the pharmaceutical company.

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Appendix I:

Cover Letter and the Questionnaire

Dr. P.K.V. PATEL
M.B.Ch.B
PG.DIP.Mgt
(PR.NO. 1527509)
FAMILY PRACTITIONER

8 Dibson's Corner
457 Longmarket Street
Pietermaritzburg
3201

P.O. Box 8864
Cumberwood
3235
Tel. 033-3453088

Dear Colleague

I am currently completing my Masters in Business Administration at the University of Natal, Pietermaritzburg. As a part of the qualification I am required to carry out primary research towards a masters thesis. My research topic is an evaluation of the factors influencing family practitioners' choice of prescription drugs.

Like you, I am a family practitioner in Pietermaritzburg and I fully understand the demands made on your valuable time. Therefore please accept my apologies for this imposition. It would be appreciated if you would spare ten minutes of your valuable time to answer this questionnaire, which will aid my research.

You are **not required** to fill in your name or other personal identifying information. Therefore, all respondents will remain totally **anonymous**. The information collected is strictly confidential and for research purposes only. The research is not for commercial publication or for sale to any company.

I would appreciate it if you could answer the questions as openly as possible and not discuss the questionnaire with your colleagues, so as to make the findings as reliable and accurate as possible.

I would be happy to clarify any concerns or questions and can be reached at above given contact details or at the following cellular number: 083 786 8798. Please accept my heartfelt gratitude for your valuable time and assistance with my research.

Yours sincerely,

_____
Dr Paresh Patel

QUESTIONNAIRE:

Please indicate your answer with a **(X)** in the appropriate box/over the appropriate number. **Pharmaceutical representative** herein also referred to as ***'sales reps/reps'***.

1. Gender: Male: ☐ Female: ☐

2. Type of general practice:

a) Solo: ☐ Partnership: ☐

b) Predominantly Dispensing: ☐ Predominantly Non-dispensing: ☐

c) Contracted to Medical schemes: ☐ Not Contracted to Medical schemes: ☐

d) Predominantly Medical aids patients: ☐ Predominantly cash patients: ☐

e) Consultation by appointment only: ☐ Consultation on walk-in basis: ☐

3. Number of years in private practice:

a) More than 10 years: ☐
b) Between 5 to 10 years: ☐
c) Less than 5 years: ☐

4. When did you qualify as a medical doctor?

a) Less than 10 years ago: ☐
b) Between 10 to 20 years ago: ☐
c) More than 20 years ago: ☐

5. Do pharmaceutical representatives call on your practice? Yes: ☐ No: ☐
If yes, then,

a) How do you see them? By appointment only: ☐ Walk-in basis: ☐

b) On average, how often do the reps call on you?
i) Once every 4 – 6 weeks ..... ☐
ii) Once every 7 – 11 weeks ..... ☐
iii) Once every 12 – 16 weeks ..... ☐

c) How often would **YOU *prefer*** for the sales reps to call on you?
i) Once every 4 – 6 weeks..... ☐
ii) Once every 7 – 11 weeks..... ☐
iii) Once every 12 – 16 weeks..... ☐

10. **Female** reps are generally ***more persuasive*** than the **male** reps in their presentations/detailing of doctors. **CHOOSE ONE.**

1. No opinion: ☐
2. Strongly Disagree: ☐
3. Disagree: ☐
4. Agree: ☐
5. Strongly Agree: ☐

11. The reps from the ***cultural background similar to the doctor*** are generally ***more persuasive*** in their presentations. **CHOOSE ONE**

1. No opinion: ☐
2. Strongly Disagree: ☐
3. Disagree: ☐
4. Agree: ☐
5. Strongly Agree: ☐

12. Generally, how do you ***first learn*** about a ***new drug***? i.e. what is your ***first source*** of information for a ***new drug***? **Please read all options given below, and then select the LEADING THREE OPTIONS and rank them in order of importance; i.e. 1 = most common source, 2 = 2nd and 3 = 3rd most common sources.**

12.1) The pharmaceutical rep..... ☐
12.2) The advertisement in a medical journal..... ☐
12.3) Research article in a medical journal..... ☐
12.4) The specialist consultant in the field..... ☐
12.5) Other medical practitioners..... ☐
12.6) Direct mail from the drug company ..... ☐
12.7) Lecture sponsored by the drug company..... ☐
12.8) Other: specify ..... ☐

13. Please indicate who/what ***encouraged*** you to ***use*** a ***new drug*** for the ***first time.*** **Please read all options given below, and then select the LEADING THREE OPTIONS and rank them in ORDER OF INFLUENCE: i.e. 1 = most common influence, 2 = 2nd and 3 = 3rd most common influences.**

13.1) The pharmaceutical rep. ..... ☐
13.2) The advertisement in a medical journal. ..... ☐
13.3) Research article in a medical journal. ..... ☐
13.4) The specialist consultant in the field. ..... ☐
13.5) Other medical practitioners. ..... ☐
13.6) Direct mail from the drug company..... ☐
13.7) The sample given by the rep..... ☐
13.8) Lecture sponsored by the drug company..... ☐
13.9) Other: specify..... ☐

14. Please rate the **relative influence** of the following **on your prescribing decision *for an EXISTING DRUG.***
(Where: 1 = no influence; 2 = minor influence; 3 = moderate influence; 4 = strong influence; 5 = very strong influence)

14.1) Your previous experiences with the drug.	(1) (2) (3) (4) (5)
14.2) Recommendations by the specialist consultant.	(1) (2) (3) (4) (5)
14.3) Information from the pharmaceutical rep.	(1) (2) (3) (4) (5)
14.4) Information from the medical journals.	(1) (2) (3) (4) (5)
14.5) Information from the CME/CPD meetings.	(1) (2) (3) (4) (5)
14.6) Request from the patient.	(1) (2) (3) (4) (5)
14.7) The retail price of the drug.	(1) (2) (3) (4) (5)
14.8) Whether the drug is on Medical scheme's EDL.	(1) (2) (3) (4) (5)
14.9) Product reminders, e.g. pens/note pads.	(1) (2) (3) (4) (5)
14.10) An appeal from the rep for your support.	(1) (2) (3) (4) (5)
14.11) How well you get along with the rep for that drug.	(1) (2) (3) (4) (5)
14.12) The reputation/image of the drug company.	(1) (2) (3) (4) (5)
14.13) Other: please specify.....	(1) (2) (3) (4) (5)

15. Please rate the **relative influence** of the following **on your prescribing decision *for a NEW DRUG.***
(Where: 1 = no influence; 2 = minor influence; 3 = moderate influence; 4 = strong influence; 5= very strong influence)

15.1) Recommendations by the specialist consultant.	(1) (2) (3) (4) (5)
15.2) Information from the pharmaceutical rep.	(1) (2) (3) (4) (5)
15.3) Information from the medical journals.	(1) (2) (3) (4) (5)
15.4) Information from the CME/CPD meetings.	(1) (2) (3) (4) (5)
15.5) Request from the patient.	(1) (2) (3) (4) (5)
15.6) The retail price of the drug.	(1) (2) (3) (4) (5)
15.7) Whether the drug is on Medical scheme's EDL.	(1) (2) (3) (4) (5)
15.8) Product reminders, e.g. pens/note pads.	(1) (2) (3) (4) (5)
15.9) An appeal from the rep for your support.	(1) (2) (3) (4) (5)
15.10) How well you get along with the rep for that drug.	(1) (2) (3) (4) (5)
15.11) The reputation/image of the drug company.	(1) (2) (3) (4) (5)
15.12) Other: please specify.....	(1) (2) (3) (4) (5)

16. With regards to the **detail-aids/graphical extracts from clinical studies,** used in the presentations by the pharmaceutical reps:

16.1) Do you generally check if the study quoted was an independent or a company sponsored study?

Yes: ☐ No: ☐

16.2) Do you generally check if the statistical information quoted in the presentation is accurate or distorted/misleading? For example, do you compare the dosage used in the study and the actual dosage being marketed marketed for use?

Yes: ☐ No: ☐

16.3) Are you reasonably able to critically evaluate the **statistical elements** of the information presented to you? For example, the ***'p' value***.

Yes: ☐ No: ☐

17. In your opinion, do you feel that the free non-medically related give-aways by pharmaceutical companies (e.g. pens, towels, sweets/chocolates, meals at restaurants, movies, sponsored conferences at holiday resorts, and other presents):

i) Are unethical promotional/marketing practices? Yes: ☐ No: ☐

ii) Result in the doctor feeling obligated to prescribe the sponsoring company's drug? Yes: ☐ No: ☐

18. Please specify in the space below, if there are any other factors not mentioned in the questionnaire, which may influence your decision to prescribe pharmaceutical drugs.

.....

.....

.....

.....

.....

.....

Thank you once again for your valuable time and assistance with my research.

Appendix II:

Examples of Reports from IMS and TMS

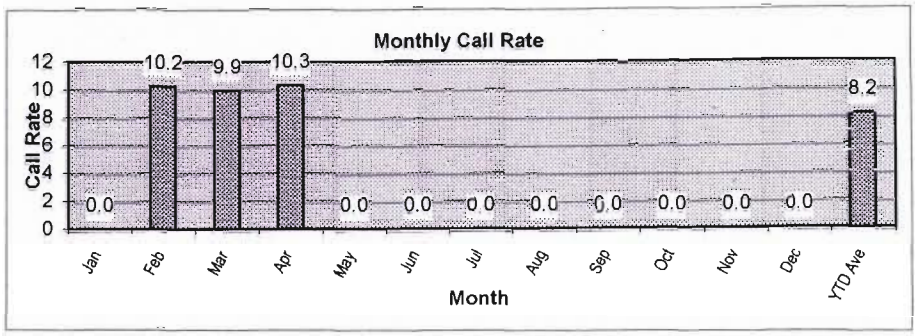
Monthly Call and Penetration Analysis

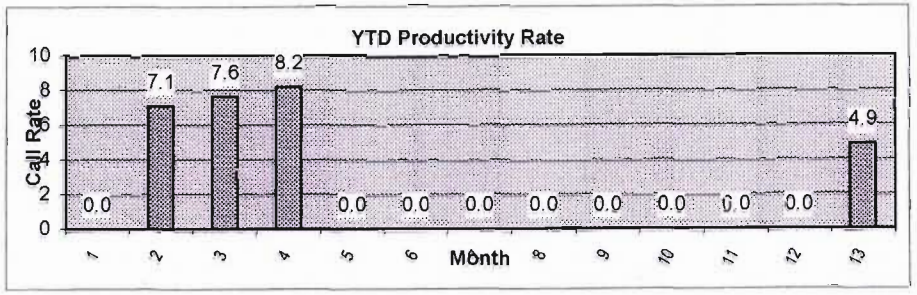
~~IMS~~

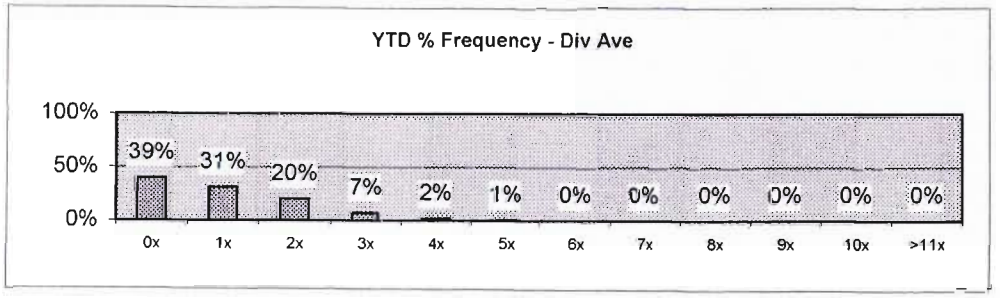
Representative Code
Representative

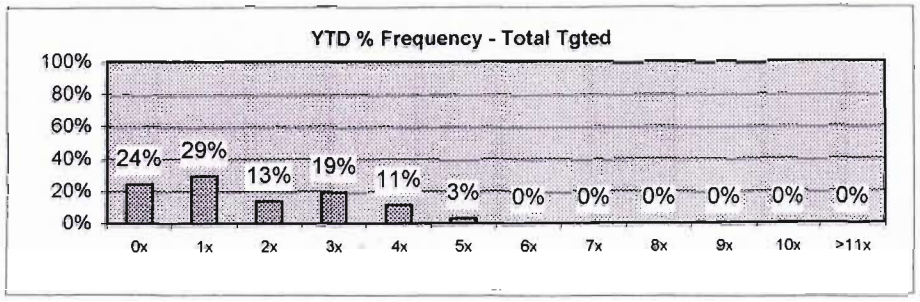
Month: Cycle 04-03

	Cycle/Month		YTD	
	Total		Total	
Total No days Worked	16		69.5	
Days Not worked	0		8.5	
Total No days in Month	16		78	
Targeted doctors seen	79		-	
Targeted doctors seen >1	33		-	
Untargeted Doctors seen	53		-	
Total Doctors Seen	165		639	
Doctor Call Rate	10.3		9.2	
Productivity Rate	10.3			
Pharmacies seen			69	
Pharmacy Call Rate			1.0	









SRA				A Doctors						Totals		
	Tgt	Seen	% Pen	Tgt	Seen	% Pen	Tgt	Seen	% Pen	Tgt	Seen	% Pen
1	0	0	-	50	27	54.0%	0	0	-	50	27	54.0%
2	0	0	-	11	9	81.8%	0	0	-	11	9	81.8%
3	0	0	-	32	17	53.1%	0	0	-	32	17	53.1%
4	0	0	-	8	8	100.0%	0	0	-	8	8	100.0%
5	0	0	-	18	9	50.0%	0	0	-	18	9	50.0%
6	0	0	-	22	9	40.9%	0	0	-	22	9	40.9%
	0	**0**	-	**141**	**79**	56.0%	**0**	**0**	-	**141**	**79**	56.0%

PROFITS

THERAPEUTIC CLASS REPORT

PERIOD UP TO 12/2002
SAF.094D12DM.T15 TOT. PRIV. MARKET.
MANUFACTURER:

TYPE OF REPORT: VALUES
DISTRICT: --1203-- PMB

CLASS: 15 H2A1

PROC. 17/01/2003
N (VAL)

SRA		TOTAL CLASS	CLASS INDEX	CLSTO NE SO	DIPRO SONE	SOLU- MEDRO	DECAD RON	BETAN OID	SOLU- CORTE	DEPO- MEDRO	ALL O THER
--120301	CM-TY	81,046	1.316	21.5	0.7	0.6		3.0	43.8	9.5	20.9
PMB	MATTY	873,476	1.247	28.9	6.5	4.5	0.5	3.3	32.3	10.9	13.2
	CM-LY	50,117	0.996	24.7	2.5	2.8	18.7	4.0	22.1	16.0	9.3
	MATLY	733,326	1.100	24.2	2.5	8.6	14.5	1.8	27.8	11.2	9.6
--120302	CM-TY	1,899	0.031	60.1	9.2				2.8	27.9	
HILLCREST	MATTY	29,373	0.042	30.7	20.7	10.6		4.2	1.6	21.8	10.4
	CM-LY	2,388	0.047	63.1	17.1			19.8			
	MATLY	28,227	0.042	35.7	12.6	13.7	5.8	9.3	2.9	16.0	4.0
--120303	CM-TY	35,469	0.576	45.9		2.1		6.9	32.0	2.7	10.3
KLOOF	MATTY	429,332	0.613	42.3	8.1	1.0		6.7	31.3	4.8	5.8
	CM-LY	37,618	0.748	36.9	0.5	16.8	1.0	4.4	31.6	6.9	2.0
	MATLY	324,593	0.487	41.9	5.3	4.6	1.3	4.8	29.6	7.0	5.4
--120304	CM-TY	19,141	0.311	14.9	3.3	8.5		18.2	34.8	8.3	11.9
WESTVILLE	MATTY	185,317	0.265	14.1	1.6	19.8	1.6	8.2	33.9	7.1	13.7
	CM-LY	21,338	0.424	24.1		6.4	28.8		22.2	5.7	12.7
	MATLY	193,358	0.290	16.9	0.1	8.6	28.8	4.4	28.6	3.8	8.8
--120305	CM-TY	14,677	0.238	50.8	0.8			17.8	0.2	22.8	7.7
VRYHEID TRIP	MATTY	260,753	0.372	67.9	2.2	1.3		7.9	3.4	13.1	4.1
	CM-LY	18,792	0.374	66.8	2.5			16.3	1.9	11.2	1.2
	MATLY	235,422	0.353	65.7	2.3	2.9	0.1	11.4	2.0	12.4	3.2
--120306	CM-TY	53,394	0.867	49.2	1.1	0.9		6.6	29.1	6.8	6.3
NEWCASTLE TRIP	MATTY	596,222	0.852	46.6	6.6	3.6	0.2	4.8	16.6	11.7	10.0
	CM-LY	23,721	0.471	39.3	5.5	5.9	1.5	7.3	5.8	17.5	17.2
	MATLY	529,044	0.794	47.0	4.6	2.9	5.7	3.6	14.9	12.0	9.3
** TOTAL	CM-TY	205,626	3.339	34.7	1.0	1.6		7.0	33.6	8.6	13.3
	MATTY	2,374,473	3.391	38.9	6.1	4.5	0.3	5.2	24.8	10.1	10.1
	CM-LY	153,974	3.060	35.6	2.4	6.8	10.5	5.8	19.1	11.8	8.1
	MATLY	2,043,970	3.066	37.2	3.4	5.9	9.7	4.2	21.5	10.2	7.9

Appendix III:

Data output and Analyses

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
1.	Q1	1.1207	.3286	58.0
2.	Q2A	1.2931	.4592	58.0
3.	Q2B	1.4138	.4968	58.0
4.	Q2C	1.1207	.3286	58.0
5.	Q2D	1.1897	.3955	58.0
6.	Q2E	1.7069	.4592	58.0
7.	Q3	1.4310	.7282	58.0
8.	Q4	2.3621	.7181	58.0
9.	Q5	1.0172	.1313	58.0
10.	Q5A	1.7241	.4509	58.0
11.	Q5B	1.2414	.5065	58.0
12.	Q5C	1.5517	.7296	58.0
13.	Q6	1.8621	.6609	58.0
14.	Q7	1.5517	.5673	58.0
15.	Q8.1	4.5345	.6547	58.0
16.	Q8.2	2.3621	1.0874	58.0
17.	Q8.3	3.4138	.8793	58.0
18.	Q8.4	3.7069	.8788	58.0
19.	Q8.5	3.6207	.9144	58.0
20.	Q8.6	4.3448	.8283	58.0
21.	Q8.7	3.4138	1.0266	58.0
22.	Q8.8	4.1207	.6774	58.0
23.	Q8.9	4.2586	.7389	58.0
24.	Q8.10	.2931	1.0924	58.0
25.	Q9	3.4828	1.0301	58.0
26.	Q10	3.0172	.8055	58.0
27.	Q11	3.1724	.7755	58.0
28.	Q12.1	1.4138	.7263	58.0
29.	Q12.2	1.4138	1.1999	58.0
30.	Q12.3	.3103	.8420	58.0
31.	Q12.4	.6724	1.1756	58.0
32.	Q12.5	.3448	.9091	58.0
33.	Q12.6	.3966	.8774	58.0
34.	Q12.7	1.4483	1.2450	58.0
35.	Q13.1	1.4483	1.0789	58.0
36.	Q13.2	.3448	.8696	58.0
37.	Q13.3	.3966	.8152	58.0
38.	Q13.4	1.1207	1.2005	58.0
39.	Q13.5	.3448	.9469	58.0
40.	Q13.6	.2414	.8015	58.0
41.	Q13.7	.9828	.9821	58.0
42.	Q13.8	1.0862	1.2605	58.0
43.	Q14.1	4.6379	.7181	58.0
44.	Q14.2	3.8793	.7964	58.0
45.	Q14.3	3.2069	.6423	58.0
46.	Q14.4	3.6207	.7909	58.0
47.	Q14.5	4.0172	.9457	58.0
48.	Q14.6	2.3103	1.0123	58.0

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
49.	Q14.7	3.6724	.8863	58.0
50.	Q14.8	3.1552	1.1050	58.0
51.	Q14.9	2.2414	1.0141	58.0
52.	Q14.10	2.0690	.9150	58.0
53.	Q14.11	2.2931	.9735	58.0
54.	Q14.12	2.8966	1.0033	58.0
55.	Q14.13	.1552	.8335	58.0
56.	Q15.1	3.9655	.7715	58.0
57.	Q15.2	3.3448	.7146	58.0
58.	Q15.3	3.7069	.7257	58.0
59.	Q15.4	4.1552	.6435	58.0
60.	Q15.5	2.1724	.9392	58.0
61.	Q15.6	3.4483	.9210	58.0
62.	Q15.7	3.0172	1.1771	58.0
63.	Q15.8	2.1552	.9877	58.0
64.	Q15.9	2.0000	.9551	58.0
65.	Q15.10	2.2241	1.0603	58.0
66.	Q15.11	2.7586	1.0481	58.0
67.	Q15.12	.0000	.0000	58.0
68.	Q16.1	1.4310	.4995	58.0
69.	Q16.2	1.3448	.4795	58.0
70.	Q16.3	1.5345	.5032	58.0
71.	Q17.1	1.7931	.4086	58.0
72.	Q17.2	1.7759	.4207	58.0

Statistics for	Mean	Variance	Std Dev	N of Variables
SCALE	155.2759	154.0278	12.4108	72

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	154.1552	153.8176	.0125	.6827
Q2A	153.9828	155.3506	-.1340	.6866
Q2B	153.8621	156.1912	-.1941	.6886
Q2C	154.1552	157.6071	-.4469	.6906
Q2D	154.0862	154.9223	-.1067	.6854
Q2E	153.5690	152.2495	.1383	.6799
Q3	153.8448	156.1685	-.1468	.6904
Q4	152.9138	155.9398	-.1354	.6898
Q5	154.2586	153.9495	.0188	.6824
Q5A	153.5517	151.7604	.1858	.6788
Q5B	154.0345	154.8760	-.0876	.6859
Q5C	153.7241	153.8173	-.0178	.6855
Q6	153.4138	154.8433	-.0761	.6870
Q7	153.7241	157.1857	-.2446	.6912
Q8.1	150.7414	155.8091	-.1352	.6890
Q8.2	152.9138	142.2205	.4097	.6633
Q8.3	151.8621	148.6473	.2149	.6757
Q8.4	151.5690	146.7057	.3077	.6712
Q8.5	151.6552	150.2650	.1306	.6797
Q8.6	150.9310	152.6267	.0349	.6839
Q8.7	151.8621	147.4894	.2200	.6749
Q8.8	151.1552	150.3439	.1941	.6774
Q8.9	151.0172	151.3155	.1192	.6801
Q8.10	154.9828	154.3681	-.0565	.6910
Q9	151.7931	145.4301	.3033	.6702
Q10	152.2586	151.9846	.0702	.6823
Q11	152.1034	147.9540	.2901	.6729
Q12.1	153.8621	152.3315	.0652	.6822
Q12.2	153.8621	146.7175	.2020	.6758
Q12.3	154.9655	153.0514	.0128	.6850
Q12.4	154.6034	162.4540	-.3273	.7083
Q12.5	154.9310	156.8373	-.1597	.6937
Q12.6	154.8793	156.2483	-.1363	.6921
Q12.7	153.8276	157.7592	-.1689	.7002
Q13.1	153.8276	149.0575	.1445	.6793
Q13.2	154.9310	155.3987	-.0981	.6903
Q13.3	154.8793	150.9852	.1187	.6802
Q13.4	154.1552	153.2211	-.0214	.6902
Q13.5	154.9310	157.6443	-.1898	.6958
Q13.6	155.0345	154.1391	-.0379	.6869
Q13.7	154.2931	157.6143	-.1846	.6962

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q13.8	154.1897	162.9634	-.3270	.7105
Q14.1	150.6379	154.0596	-.0307	.6859
Q14.2	151.3966	146.4540	.3600	.6696
Q14.3	152.0690	147.9250	.3642	.6715
Q14.4	151.6552	151.5632	.0944	.6812
Q14.5	151.2586	149.7039	.1482	.6789
Q14.6	152.9655	144.6304	.3439	.6680
Q14.7	151.6034	144.7698	.3972	.6667
Q14.8	152.1207	139.8273	.4967	.6576
Q14.9	153.0345	140.2444	.5310	.6572
Q14.10	153.2069	139.7108	.6232	.6545
Q14.11	152.9828	141.7716	.4878	.6605
Q14.12	152.3793	141.3624	.4887	.6599
Q14.13	155.1207	148.4940	.2382	.6748
Q15.1	151.3103	145.0599	.4505	.6661
Q15.2	151.9310	147.0127	.3754	.6701
Q15.3	151.5690	149.7934	.2087	.6766
Q15.4	151.1207	150.8448	.1752	.6782
Q15.5	153.1034	142.3751	.4806	.6615
Q15.6	151.8276	143.7592	.4266	.6647
Q15.7	152.2586	138.1600	.5233	.6545
Q15.8	153.1207	140.7396	.5254	.6581
Q15.9	153.2759	140.1331	.5741	.6561
Q15.10	153.0517	140.6113	.4888	.6589
Q15.11	152.5172	140.7453	.4899	.6590
Q15.12	155.2759	154.0278	.0000	.6824
Q16.1	153.8448	153.4316	.0280	.6828
Q16.2	153.9310	154.1706	-.0313	.6842
Q16.3	153.7414	151.4232	.1899	.6784
Q17.1	153.4828	153.8330	.0027	.6831
Q17.2	153.5000	155.4474	-.1522	.6866

Reliability Coefficients

N of Cases = 58.0 N of Items = 72

Alpha = .6823

Tables

GENDER PROFILE

	GENDER	
	Count	%
MALE	51	87.9%
FEMALE	7	12.1%
Total	58	100.0%

Tables

TYPE OF GENERAL PRACTICE

	Q2A	
	Count	%
SOLO	41	70.7%
PARTNERSHIP	17	29.3%
Total	58	100.0%

Tables

TYPE OF GENERAL PRACTICE

	Q2B	
	Count	%
PREDOMINANTLY DISPENSING	34	58.6%
PREDOMINANTLY NON-DISPENSING	24	41.4%
Total	58	100.0%

Tables

TYPE OF GENERAL PRACTICE

	Q2C	
	Count	%
CONTRACTED TO MEDICAL SCHEMES	51	87.9%
NOT CONTRACTED TO MEDICAL SCHEMES	7	12.1%
Total	58	100.0%

Tables

TYPE OF GENERAL PRACTICE

	Q2D	
	Count	%
PREDOMINANTLY MEDICAL AIDS PATIENTS	47	81.0%
PREDOMINANTLY CASH PATIENTS	11	19.0%
Total	58	100.0%

Tables

TYPE OF GENERAL PRACTICE

	Q2E	
	Count	%
CONSULTATION BY APPOINTMENT ONLY	17	29.3%
CONSULTATION ON WALK-IN-BASIS	41	70.7%
Total	58	100.0%

Tables

NUMBER OF YEARS IN PRIVATE PRACTICE

	Q3	
	Count	%
MORE THAN 10 YEARS	41	70.7%
BETWEEN 5 AND 10 YEARS	9	15.5%
LESS THAN 5 YEARS	8	13.8%
Total	58	100.0%

Tables

WHEN DID YOU QUALIFY?

	Q4	
	Count	%
LESS THAN 10 YEARS AGO	8	13.8%
BETWEEN 10 TO 20 YEARS AGO	21	36.2%
MORE THAN 20 YEARS AGO	29	50.0%
Total	58	100.0%

Tables

DO PHARMACEUTICAL REPS CALL ON YOUR PRACTICE?

	Q5	
	Count	%
YES	57	98.3%
NO	1	1.7%
Total	58	100.0%

Tables

HOW DO YOU SEE THEM?

	Q5A	
	Count	%
BY APPOINTMENT	16	27.6%
WALK-IN-BASIS	42	72.4%
Total	58	100.0%

Tables

HOW OFTEN DO REPS CALL?

	Q5B	
	Count	%
ONCE EVERY 4-6 WEEKS	46	79.3%
ONCE EVERY 7-11 WEEKS	10	17.2%
ONCE EVERY 12-16 WEEKS	2	3.4%
Total	58	100.0%

Tables

HOW OFTEN DO YOU LIKE THEM TO CALL?

	Q5C	
	Count	%
ONCE EVERY 4-6 WEEKS	34	58.6%
ONCE EVERY 7-11 WEEKS	16	27.6%
ONCE EVERY 12-16 WEEKS	8	13.8%
Total	58	100.0%

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Q5C - Q5B	Negative Ranks	3[a]	12.00	36.00
	Positive Ranks	18[b]	10.83	195.00
	Ties	37[c]		
	Total	58		

a. Q5C < Q5B

b. Q5C > Q5B

c. Q5B = Q5C

Test Statistics[b]

	Q5C - Q5B
Z	-2.922[a]
Asymp. Sig. (2-tailed)	.003

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Tables

AVERAGE TIME SPENT?

	Q6	
	Count	%
BETWEEN 1-5 MINUTES	15	25.9%
BETWEEN 6-10 MINUTES	38	65.5%
BETWEEN 11-15 MINUTES	3	5.2%
MORE THAN 15 MINUTES	2	3.4%
Total	58	100.0%

Tables

AVERAGE TIME PREFERRED TO SPEND WITH REP?

	Q7	
	Count	%
BETWEEN 1-5 MINUTES	28	48.3%
BETWEEN 6-10 MINUTES	28	48.3%
BETWEEN 11-15 MINUTES	2	3.4%
Total	58	100.0%

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Q7 - Q6	Negative Ranks	16[a]	8.50	136.00
	Positive Ranks	0[b]	.00	.00
	Ties	42[c]		
	Total	58		

a. Q7 < Q6

b. Q7 > Q6

c. Q6 = Q7

Test Statistics[b]

	Q7 - Q6
Z	-3.819[a]
Asymp. Sig. (2-tailed)	.000

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Tables

RELATIVE IMPORTANCE OF THE FOLLOWING.

		.00	NOT IMPORTANT	SLIGHTLY IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	ABSOLUTE MUST	Total
Q8.1	Count				5	17	36	58
	%				8.6%	29.3%	62.1%	100.0%
Q8.2	Count		15	17	18	6	2	58
	%		25.9%	29.3%	31.0%	10.3%	3.4%	100.0%
Q8.3	Count		1	7	22	23	5	58
	%		1.7%	12.1%	37.9%	39.7%	8.6%	100.0%
Q8.4	Count		2	1	18	28	9	58
	%		3.4%	1.7%	31.0%	48.3%	15.5%	100.0%
Q8.5	Count		3	1	18	29	7	58
	%		5.2%	1.7%	31.0%	50.0%	12.1%	100.0%
Q8.6	Count		1	1	4	23	29	58
	%		1.7%	1.7%	6.9%	39.7%	50.0%	100.0%
Q8.7	Count		3	6	21	20	8	58
	%		5.2%	10.3%	36.2%	34.5%	13.8%	100.0%
Q8.8	Count				10	31	17	58
	%				17.2%	53.4%	29.3%	100.0%
Q8.9	Count			2	4	29	23	58
	%			3.4%	6.9%	50.0%	39.7%	100.0%
Q8.10	Count	54				3	1	58
	%	93.1%				5.2%	1.7%	100.0%

Tables

RELATIVE IMPORTANCE BASED ON MEANS, MEDIANS, AND MODES

	Count	Mean	Median	Mode
Q8.1	59	4.53	5.00	5.00
Q8.2	59	2.36	2.00	3.00
Q8.3	59	3.41	3.00	4.00
Q8.4	59	3.71	4.00	4.00
Q8.5	59	3.62	4.00	4.00
Q8.6	59	4.34	4.50	5.00
Q8.7	59	3.41	3.00	3.00
Q8.8	59	4.12	4.00	4.00
Q8.9	59	4.26	4.00	4.00
Q8.10	59	.29	.00	.00

RELATIVE IMPORTANCE BY NUMBER OF YEARS IN PRACTICE BASED ON MEANS, MEDIANS, AND MODES

			Count	Mean	Median	Mode
Q3	MORE THAN 10 YEARS	Q8.1	41	4.56	5.00	5.00
		Q8.2	41	2.46	2.00	3.00
		Q8.3	41	3.44	3.00	3.00
		Q8.4	41	3.76	4.00	4.00
		Q8.5	41	3.63	4.00	4.00
		Q8.6	41	4.32	4.00	5.00
		Q8.7	41	3.41	3.00	3.00
		Q8.8	41	4.07	4.00	4.00
		Q8.9	41	4.27	4.00	4.00
		Q8.10	41	.32	.00	.00
	BETWEEN 5 AND 10 YEARS	Q8.1	9	4.44	5.00	5.00
		Q8.2	9	2.11	2.00	2.00
		Q8.3	9	3.44	4.00	2.00
		Q8.4	9	4.11	4.00	4.00
		Q8.5	9	3.89	4.00	4.00
		Q8.6	9	4.56	5.00	5.00
		Q8.7	9	3.33	3.00	3.00
		Q8.8	9	4.11	4.00	4.00
		Q8.9	9	4.11	4.00	4.00
		Q8.10	9	.44	.00	.00
	LESS THAN 5 YEARS	Q8.1	8	4.50	5.00	5.00
		Q8.2	8	2.13	2.50	3.00
		Q8.3	8	3.25	3.00	3.00
		Q8.4	8	3.00	3.00	3.00
		Q8.5	8	3.25	3.00	3.00
		Q8.6	8	4.25	4.50	5.00
		Q8.7	8	3.50	4.00	4.00
		Q8.8	8	4.38	4.00	4.00
		Q8.9	8	4.38	4.00	4.00
		Q8.10	8	.00	.00	.00

Tables

RELATIVE IMPORTANCE BY NUMBER OF YEARS QUALIFIED BASED ON MEANS, MEDIANS, AND MODES

			Count	Mean	Median	Mode
Q4	MORE THAN 20 YEARS AGO	Q8.1	29	4.59	5.00	5.00
		Q8.2	29	2.52	3.00	3.00
		Q8.3	29	3.45	3.00	3.00
		Q8.4	29	3.79	4.00	4.00
		Q8.5	29	3.62	4.00	4.00
		Q8.6	29	4.38	4.00	5.00
		Q8.7	29	3.48	3.00	3.00
		Q8.8	29	4.00	4.00	4.00
		Q8.9	29	4.14	4.00	4.00
		Q8.10	29	.45	.00	.00
	BETWEEN 10 TO 20 YEARS AGO	Q8.1	21	4.48	5.00	5.00
		Q8.2	21	2.10	2.00	2.00
		Q8.3	21	3.24	4.00	4.00
		Q8.4	21	3.71	4.00	4.00
		Q8.5	21	3.81	4.00	4.00
		Q8.6	21	4.29	5.00	5.00
		Q8.7	21	3.19	3.00	3.00
		Q8.8	21	4.19	4.00	4.00
		Q8.9	21	4.38	4.00	4.00
		Q8.10	21	.19	.00	.00
	LESS THAN 10 YEARS AGO	Q8.1	8	4.50	5.00	5.00
		Q8.2	8	2.50	2.50	3.00
		Q8.3	8	3.75	3.50	3.00
		Q8.4	8	3.38	3.00	3.00
		Q8.5	8	3.13	3.00	3.00
		Q8.6	8	4.38	4.50	5.00
		Q8.7	8	3.75	4.00	4.00
		Q8.8	8	4.38	4.50	5.00
		Q8.9	8	4.38	4.00	4.00
		Q8.10	8	.00	.00	.00

Tables

ARE PHARMACEUTICAL REPS FROM AN ALLIED OF SCIENTIFIC FIELD MORE PERSUASIVE?

	Q9	
	Count	%
NO OPINION	6	10.3%
STRONGLY DISAGREE	2	3.4%
DISAGREE	11	19.0%
AGREE	36	62.1%
STRONGLY AGREE	3	5.2%
Total	58	100.0%

Tables

ARE PHARMACEUTICAL REPS FROM AN ALLIED OF SCIENTIFIC FIELD MORE PERSUASIVE?

	GENDER			
	MALE		FEMALE	
	Q9		Q9	
	Count	%	Count	%
NO OPINION	5	9.8%	1	14.3%
STRONGLY DISAGREE	1	2.0%	1	14.3%
DISAGREE	8	15.7%	3	42.9%
AGREE	34	66.7%	2	28.6%
STRONGLY AGREE	3	5.9%		
Total	51	100.0%	7	100.0%

Tables

ARE FEMALE REPS MORE PERSUASIVE?

	Q10	
	Count	%
NO OPINION	5	8.6%
STRONGLY DISAGREE	3	5.2%
DISAGREE	36	62.1%
AGREE	14	24.1%
Total	58	100.0%

Tables

ARE FEMALE REPS MORE PERSUASIVE - ANALYSIS BASED ON GENDER OF DOCTOR?

	GENDER			
	MALE		FEMALE	
	Q10		Q10	
	Count	%	Count	%
NO OPINION	4	7.8%	1	14.3%
STRONGLY DISAGREE	2	3.9%	1	14.3%
DISAGREE	31	60.8%	5	71.4%
AGREE	14	27.5%		
Total	51	100.0%	7	100.0%

Tables

Tables

ARE REPS FROM SIMILAR CULTURAL BACKGROUND MORE PERSUASIVE?

	Q11	
	Count	%
NO OPINION	3	5.2%
STRONGLY DISAGREE	2	3.4%
DISAGREE	37	63.8%
AGREE	14	24.1%
STRONGLY AGREE	2	3.4%
Total	58	100.0%

Tables

SIMILAR CULTURAL BACKGROUND REP MORE INFLUENCE OR NOT - ANALYSIS BY GENDER?

	GENDER			
	MALE		FEMALE	
	Q11		Q11	
	Count	%	Count	%
NO OPINION	3	5.9%		
STRONGLY DISAGREE	2	3.9%		
DISAGREE	33	64.7%	4	57.1%
AGREE	12	23.5%	2	28.6%
STRONGLY AGREE	1	2.0%	1	14.3%
Total	51	100.0%	7	100.0%

HOW DO YOU FIRST LEARN ABOUT A NEW DRUG?

		.00	MOST COMMON SOURCE	SECOND MOST COMMON SOURCE	THIRD MOST COMMON SOURCE	Total
Q12.1	Count	3	33	17	5	58
	%	5.2%	56.9%	29.3%	8.6%	100.0%
Q12.2	Count	19	11	13	15	58
	%	32.8%	19.0%	22.4%	25.9%	100.0%
Q12.3	Count	50	2	2	4	58
	%	86.2%	3.4%	3.4%	6.9%	100.0%
Q12.4	Count	43		6	9	58
	%	74.1%		10.3%	15.5%	100.0%
Q12.5	Count	50	1	2	5	58
	%	86.2%	1.7%	3.4%	8.6%	100.0%
Q12.6	Count	46	5	3	4	58
	%	79.3%	8.6%	5.2%	6.9%	100.0%
Q12.7	Count	21	6	15	16	58
	%	36.2%	10.3%	25.9%	27.6%	100.0%

HOW DO YOU FIRST LEARN ABOUT A NEW DRUG - ANALYSIS BASED NUMBER OF YEARS THE DOCTOR HAS BEEN IN PRIVATE PRACTICE.

				.00	MOST COMMON SOURCE	SECOND MOST COMMON SOURCE	THIRD MOST COMMON SOURCE	Total
Q3	MORE THAN 10 YEARS	Q12.1	Count	2	22	13	4	41
			%	4.9%	53.7%	31.7%	9.8%	100.0%
		Q12.2	Count	13	9	9	10	41
			%	31.7%	22.0%	22.0%	24.4%	100.0%
		Q12.3	Count	34	2	2	3	41
			%	82.9%	4.9%	4.9%	7.3%	100.0%
		Q12.4	Count	29		6	6	41
			%	70.7%		14.6%	14.6%	100.0%
		Q12.5	Count	37		1	3	41
			%	90.2%		2.4%	7.3%	100.0%
		Q12.6	Count	32	4	1	4	41
			%	78.0%	9.8%	2.4%	9.8%	100.0%
		Q12.7	Count	17	4	9	11	41
			%	41.5%	9.8%	22.0%	26.8%	100.0%
	BETWEEN 5 AND 10 YEARS	Q12.1	Count	1	5	2	1	9
			%	11.1%	55.6%	22.2%	11.1%	100.0%
		Q12.2	Count	3	2	2	2	9
			%	33.3%	22.2%	22.2%	22.2%	100.0%
		Q12.3	Count	8			1	9
			%	88.9%			11.1%	100.0%
		Q12.4	Count	8			1	9
			%	88.9%			11.1%	100.0%
		Q12.5	Count	8	1			9
			%	88.9%	11.1%			100.0%
		Q12.6	Count	6	1	2		9
			%	66.7%	11.1%	22.2%		100.0%
		Q12.7	Count	2		3	4	9
			%	22.2%		33.3%	44.4%	100.0%
	LESS THAN 5 YEARS	Q12.1	Count		6	2		8
			%		75.0%	25.0%		100.0%
		Q12.2	Count	3		2	3	8
			%	37.5%		25.0%	37.5%	100.0%
		Q12.3	Count	8				8
			%	100.0%				100.0%
		Q12.4	Count	6			2	8
			%	75.0%			25.0%	100.0%
		Q12.5	Count	5		1	2	8
			%	62.5%		12.5%	25.0%	100.0%
		Q12.6	Count	8				8
			%	100.0%				100.0%
		Q12.7	Count	2	2	3	1	8
			%	25.0%	25.0%	37.5%	12.5%	100.0%

HOW DO YOU FIRST LEARN ABOUT A NEW DRUG - ANALYSIS BASED NUMBER OF YEARS THE DOCTOR HAS QUALIFIED.

				.00	MOST COMMON SOURCE	SECOND MOST COMMON SOURCE	THIRD MOST COMMON SOURCE	Total
Q4	LESS THAN 10 YEARS AGO	Q12.1	Count		7	1		8
			%		87.5%	12.5%		100.0%
		Q12.2	Count	1		3	4	8
			%	12.5%		37.5%	50.0%	100.0%
		Q12.3	Count	7			1	8
			%	87.5%			12.5%	100.0%
		Q12.4	Count	8				8
			%	100.0%				100.0%
		Q12.5	Count	6		1	1	8
			%	75.0%		12.5%	12.5%	100.0%
		Q12.6	Count	7		1		8
			%	87.5%		12.5%		100.0%
		Q12.7	Count	3	1	2	2	8
			%	37.5%	12.5%	25.0%	25.0%	100.0%
	BETWEEN 10 TO 20 YEARS AGO	Q12.1	Count	1	12	6	2	21
			%	4.8%	57.1%	28.6%	9.5%	100.0%
		Q12.2	Count	9	4	5	3	21
			%	42.9%	19.0%	23.8%	14.3%	100.0%
		Q12.3	Count	17	1	2	1	21
			%	81.0%	4.8%	9.5%	4.8%	100.0%
		Q12.4	Count	14		2	5	21
			%	66.7%		9.5%	23.8%	100.0%
		Q12.5	Count	19	1		1	21
			%	90.5%	4.8%		4.8%	100.0%
		Q12.6	Count	16	2		3	21
			%	76.2%	9.5%		14.3%	100.0%
		Q12.7	Count	8	1	6	6	21
			%	38.1%	4.8%	28.6%	28.6%	100.0%
	MORE THAN 20 YEARS AGO	Q12.1	Count	2	14	10	3	29
			%	6.9%	48.3%	34.5%	10.3%	100.0%
		Q12.2	Count	9	7	5	8	29
			%	31.0%	24.1%	17.2%	27.6%	100.0%
		Q12.3	Count	26	1		2	29
			%	89.7%	3.4%		6.9%	100.0%
		Q12.4	Count	21		4	4	29
			%	72.4%		13.8%	13.8%	100.0%
		Q12.5	Count	25		1	3	29
			%	86.2%		3.4%	10.3%	100.0%
		Q12.6	Count	23	3	2	1	29
			%	79.3%	10.3%	6.9%	3.4%	100.0%
		Q12.7	Count	10	4	7	8	29
			%	34.5%	13.8%	24.1%	27.6%	100.0%

WHO/WHAT ENCOURAGED YOU TO USE A NEW DRUG?

		.00	MOST COMMON INFLUENCE	SECOND MOST COMMON INFLUENCE	THIRD MOST COMMON INFLUENCE	Total
Q13.1	Count	12	22	10	14	58
	%	20.7%	37.9%	17.2%	24.1%	100.0%
Q13.2	Count	49	2	3	4	58
	%	84.5%	3.4%	5.2%	6.9%	100.0%
Q13.3	Count	44	8	3	3	58
	%	75.9%	13.8%	5.2%	5.2%	100.0%
Q13.4	Count	28	5	15	10	58
	%	48.3%	8.6%	25.9%	17.2%	100.0%
Q13.5	Count	51		1	6	58
	%	87.9%		1.7%	10.3%	100.0%
Q13.6	Count	53		1	4	58
	%	91.4%		1.7%	6.9%	100.0%
Q13.7	Count	25	12	18	3	58
	%	43.1%	20.7%	31.0%	5.2%	100.0%
Q13.8	Count	29	9	6	14	58
	%	50.0%	15.5%	10.3%	24.1%	100.0%

WHO/WHAT ENCOURAGED YOU TO USE A NEW DRUG - ANALYSIS BY NUMBER OF YEARS DOCTOR HAS BEEN IN PRIVATE PRACTICE.

				.00	MOST COMMON INFLUENCE	SECOND MOST COMMON INFLUENCE	THIRD MOST COMMON INFLUENCE	Total
Q3	MORE THAN 10 YEARS	Q13.1	Count	7	17	6	11	41
			%	17.1%	41.5%	14.6%	26.8%	100.0%
		Q13.2	Count	35	1	3	2	41
			%	85.4%	2.4%	7.3%	4.9%	100.0%
		Q13.3	Count	31	7	1	2	41
			%	75.6%	17.1%	2.4%	4.9%	100.0%
		Q13.4	Count	18	4	11	8	41
			%	43.9%	9.8%	26.8%	19.5%	100.0%
		Q13.5	Count	36			5	41
			%	87.8%			12.2%	100.0%
		Q13.6	Count	38		1	2	41
			%	92.7%		2.4%	4.9%	100.0%
		Q13.7	Count	20	6	12	3	41
			%	48.8%	14.6%	29.3%	7.3%	100.0%
		Q13.8	Count	21	6	6	8	41
			%	51.2%	14.6%	14.6%	19.5%	100.0%
	BETWEEN 5 AND 10 YEARS	Q13.1	Count	3	2	2	2	9
			%	33.3%	22.2%	22.2%	22.2%	100.0%
		Q13.2	Count	7	1		1	9
			%	77.8%	11.1%		11.1%	100.0%
		Q13.3	Count	7	1	1		9
			%	77.8%	11.1%	11.1%		100.0%
		Q13.4	Count	4	1	3	1	9
			%	44.4%	11.1%	33.3%	11.1%	100.0%
		Q13.5	Count	8		1		9
			%	88.9%		11.1%		100.0%
		Q13.6	Count	7			2	9
			%	77.8%			22.2%	100.0%
		Q13.7	Count	4	3	2		9
			%	44.4%	33.3%	22.2%		100.0%
		Q13.8	Count	5	1		3	9
			%	55.6%	11.1%		33.3%	100.0%
	LESS THAN 5 YEARS	Q13.1	Count	2	3	2	1	8
			%	25.0%	37.5%	25.0%	12.5%	100.0%
		Q13.2	Count	7			1	8
			%	87.5%			12.5%	100.0%
		Q13.3	Count	6		1	1	8
			%	75.0%		12.5%	12.5%	100.0%
		Q13.4	Count	6		1	1	8
			%	75.0%		12.5%	12.5%	100.0%
		Q13.5	Count	7			1	8
			%	87.5%			12.5%	100.0%
		Q13.6	Count	8				8
			%	100.0%				100.0%
		Q13.7	Count	1	3	4		8
			%	12.5%	37.5%	50.0%		100.0%
		Q13.8	Count	3	2		3	8
			%	37.5%	25.0%		37.5%	100.0%

WHO/WHAT ENCOURAGED YOU TO USE A NEW DRUG - ANALYSIS BY NUMBER OF YEARS DOCTOR HAS QUALIFIED.

				.00	MOST COMMON INFLUENCE	SECOND MOST COMMON INFLUENCE	THIRD MOST COMMON INFLUENCE	Total
Q4	LESS THAN 10 YEARS AGO	Q13.1	Count	2	2	2	2	8
			%	25.0%	25.0%	25.0%	25.0%	100.0%
		Q13.2	Count	7			1	8
			%	87.5%			12.5%	100.0%
		Q13.3	Count	5		2	1	8
			%	62.5%		25.0%	12.5%	100.0%
		Q13.4	Count	6	1		1	8
			%	75.0%	12.5%		12.5%	100.0%
		Q13.5	Count	8				8
			%	100.0%				100.0%
		Q13.6	Count	7			1	8
			%	87.5%			12.5%	100.0%
		Q13.7	Count	1	3	4		8
			%	12.5%	37.5%	50.0%		100.0%
		Q13.8	Count	4	2		2	8
			%	50.0%	25.0%		25.0%	100.0%
	BETWEEN 10 TO 20 YEARS AGO	Q13.1	Count	6	6	5	4	21
			%	28.6%	28.6%	23.8%	19.0%	100.0%
		Q13.2	Count	19		1	1	21
			%	90.5%		4.8%	4.8%	100.0%
		Q13.3	Count	14	5	1	1	21
			%	66.7%	23.8%	4.8%	4.8%	100.0%
		Q13.4	Count	7	2	6	6	21
			%	33.3%	9.5%	28.6%	28.6%	100.0%
		Q13.5	Count	20			1	21
			%	95.2%			4.8%	100.0%
		Q13.6	Count	20			1	21
			%	95.2%			4.8%	100.0%
		Q13.7	Count	9	5	6	1	21
			%	42.9%	23.8%	28.6%	4.8%	100.0%
		Q13.8	Count	10	3	2	6	21
			%	47.6%	14.3%	9.5%	28.6%	100.0%
	MORE THAN 20 YEARS AGO	Q13.1	Count	4	14	3	8	29
			%	13.8%	48.3%	10.3%	27.6%	100.0%
		Q13.2	Count	23	2	2	2	29
			%	79.3%	6.9%	6.9%	6.9%	100.0%
		Q13.3	Count	25	3		1	29
			%	86.2%	10.3%		3.4%	100.0%
		Q13.4	Count	15	2	9	3	29
			%	51.7%	6.9%	31.0%	10.3%	100.0%
		Q13.5	Count	23		1	5	29
			%	79.3%		3.4%	17.2%	100.0%
		Q13.6	Count	26		1	2	29
			%	89.7%		3.4%	6.9%	100.0%
		Q13.7	Count	15	4	8	2	29
			%	51.7%	13.8%	27.6%	6.9%	100.0%
		Q13.8	Count	15	4	4	6	29
			%	51.7%	13.8%	13.8%	20.7%	100.0%

Tables

INFLUENCE ON PRESCRIBING DECISION FOR EXISTING DRUG.

		.00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
Q14.1	Count		1		2	13	42	58
	%		1.7%		3.4%	22.4%	72.4%	100.0%
Q14.2	Count			2	16	27	13	58
	%			3.4%	27.6%	46.6%	22.4%	100.0%
Q14.3	Count		1	4	35	18		58
	%		1.7%	6.9%	60.3%	31.0%		100.0%
Q14.4	Count			4	21	26	7	58
	%			6.9%	36.2%	44.8%	12.1%	100.0%
Q14.5	Count		2	3	4	32	17	58
	%		3.4%	5.2%	6.9%	55.2%	29.3%	100.0%
Q14.6	Count		13	22	17	4	2	58
	%		22.4%	37.9%	29.3%	6.9%	3.4%	100.0%
Q14.7	Count		2	4	11	35	6	58
	%		3.4%	6.9%	19.0%	60.3%	10.3%	100.0%
Q14.8	Count		6	8	20	19	5	58
	%		10.3%	13.8%	34.5%	32.8%	8.6%	100.0%
Q14.9	Count		14	25	11	7	1	58
	%		24.1%	43.1%	19.0%	12.1%	1.7%	100.0%
Q14.10	Count		16	27	11	3	1	58
	%		27.6%	46.6%	19.0%	5.2%	1.7%	100.0%
Q14.11	Count		13	22	17	5	1	58
	%		22.4%	37.9%	29.3%	8.6%	1.7%	100.0%
Q14.12	Count		4	20	12	22		58
	%		6.9%	34.5%	20.7%	37.9%		100.0%
Q14.13	Count	56				1	1	58
	%	96.6%				1.7%	1.7%	100.0%

Tables

INFLUENCE ON PRESCRIBING DECISION FOR EXISTING DRUG - ANALYSIS BY GENDER OF DOCTOR.

				.00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
GENDER	MALE	Q14.1	Count		1		2	12	36	51
			%		2.0%		3.9%	23.5%	70.6%	100.0%
		Q14.2	Count			2	16	23	10	51
			%			3.9%	31.4%	45.1%	19.6%	100.0%
		Q14.3	Count		1	4	32	14		51
			%		2.0%	7.8%	62.7%	27.5%		100.0%
		Q14.4	Count			4	19	21	7	51
			%			7.8%	37.3%	41.2%	13.7%	100.0%
		Q14.5	Count		2	3	4	25	17	51
			%		3.9%	5.9%	7.8%	49.0%	33.3%	100.0%
		Q14.6	Count		12	20	14	4	1	51
			%		23.5%	39.2%	27.5%	7.8%	2.0%	100.0%
		Q14.7	Count		2	3	10	31	5	51
			%		3.9%	5.9%	19.6%	60.8%	9.8%	100.0%
		Q14.8	Count		6	6	17	17	5	51
			%		11.8%	11.8%	33.3%	33.3%	9.8%	100.0%
		Q14.9	Count		13	22	9	6	1	51
			%		25.5%	43.1%	17.6%	11.8%	2.0%	100.0%
		Q14.10	Count		14	25	8	3	1	51
			%		27.5%	49.0%	15.7%	5.9%	2.0%	100.0%
		Q14.11	Count		10	20	16	5		51
			%		19.6%	39.2%	31.4%	9.8%		100.0%
		Q14.12	Count		3	17	9	22		51
			%		5.9%	33.3%	17.6%	43.1%		100.0%
		Q14.13	Count	49				1	1	51
			%	96.1%				2.0%	2.0%	100.0%
	FEMALE	Q14.1	Count					1	6	7
			%					14.3%	85.7%	100.0%
		Q14.2	Count					4	3	7
			%					57.1%	42.9%	100.0%
		Q14.3	Count				3	4		7
			%				42.9%	57.1%		100.0%
		Q14.4	Count				2	5		7
			%				28.6%	71.4%		100.0%
		Q14.5	Count					7		7
			%					100.0%		100.0%
		Q14.6	Count		1	2	3		1	7
			%		14.3%	28.6%	42.9%		14.3%	100.0%
		Q14.7	Count			1	1	4	1	7
			%			14.3%	14.3%	57.1%	14.3%	100.0%
		Q14.8	Count			2	3	2		7
			%			28.6%	42.9%	28.6%		100.0%
		Q14.9	Count		1	3	2	1		7
			%		14.3%	42.9%	28.6%	14.3%		100.0%
		Q14.10	Count		2	2	3			7
			%		28.6%	28.6%	42.9%			100.0%
		Q14.11	Count		3	2	1		1	7
			%		42.9%	28.6%	14.3%		14.3%	100.0%
		Q14.12	Count		1	3	3			7
			%		14.3%	42.9%	42.9%			100.0%
		Q14.13	Count	7						7
			%	100.0%						100.0%

Tables

INFLUENCE ON PRESCRIBING DECISION FOR EXISTING DRUG - ANALYSIS BY TYPE OF GENERAL PRACTICE.

				.00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
Q2C	CONTRACTED TO MEDICAL SCHEMES	Q14.1	Count		1		2	9	39	51
			%		2.0%		3.9%	17.6%	76.5%	100.0%
		Q14.2	Count			1	13	24	13	51
			%			2.0%	25.5%	47.1%	25.5%	100.0%
		Q14.3	Count		1	3	29	18		51
			%		2.0%	5.9%	56.9%	35.3%		100.0%
		Q14.4	Count			3	19	22	7	51
			%			5.9%	37.3%	43.1%	13.7%	100.0%
		Q14.5	Count		1	1	4	29	16	51
			%		2.0%	2.0%	7.8%	56.9%	31.4%	100.0%
		Q14.6	Count		10	18	17	4	2	51
			%		19.6%	35.3%	33.3%	7.8%	3.9%	100.0%
		Q14.7	Count		1	2	11	31	6	51
			%		2.0%	3.9%	21.6%	60.8%	11.8%	100.0%
		Q14.8	Count		2	6	20	18	5	51
			%		3.9%	11.8%	39.2%	35.3%	9.8%	100.0%
		Q14.9	Count		10	22	11	7	1	51
			%		19.6%	43.1%	21.6%	13.7%	2.0%	100.0%
		Q14.10	Count		13	23	11	3	1	51
			%		25.5%	45.1%	21.6%	5.9%	2.0%	100.0%
		Q14.11	Count		11	20	15	4	1	51
			%		21.6%	39.2%	29.4%	7.8%	2.0%	100.0%
		Q14.12	Count		4	15	11	21		51
			%		7.8%	29.4%	21.6%	41.2%		100.0%
		Q14.13	Count	49				1	1	51
			%	96.1%				2.0%	2.0%	100.0%
	NOT CONTRACTED TO MEDICAL SCHEMES	Q14.1	Count					4	3	7
			%					57.1%	42.9%	100.0%
		Q14.2	Count			1	3	3		7
			%			14.3%	42.9%	42.9%		100.0%
		Q14.3	Count			1	6			7
			%			14.3%	85.7%			100.0%
		Q14.4	Count			1	2	4		7
			%			14.3%	28.6%	57.1%		100.0%
		Q14.5	Count		1	2		3	1	7
			%		14.3%	28.6%		42.9%	14.3%	100.0%
		Q14.6	Count		3	4				7
			%		42.9%	57.1%				100.0%
		Q14.7	Count		1	2		4		7
			%		14.3%	28.6%		57.1%		100.0%
		Q14.8	Count		4	2		1		7
			%		57.1%	28.6%		14.3%		100.0%
		Q14.9	Count		4	3				7
			%		57.1%	42.9%				100.0%
		Q14.10	Count		3	4				7
			%		42.9%	57.1%				100.0%
		Q14.11	Count		2	2	2	1		7
			%		28.6%	28.6%	28.6%	14.3%		100.0%
		Q14.12	Count			5	1	1		7
			%			71.4%	14.3%	14.3%		100.0%
		Q14.13	Count	7						7
			%	100.0%						100.0%

Tables

RELATIVE INFLUENCE ON PRESCRIBING DECISION FOR NEW DRUG

		.00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
Q15.1	Count			1	15	27	15	58
	%			1.7%	25.9%	46.6%	25.9%	100.0%
Q15.2	Count			5	31	19	3	58
	%			8.6%	53.4%	32.8%	5.2%	100.0%
Q15.3	Count			2	20	29	7	58
	%			3.4%	34.5%	50.0%	12.1%	100.0%
Q15.4	Count			1	5	36	16	58
	%			1.7%	8.6%	62.1%	27.6%	100.0%
Q15.5	Count		15	24	13	6		58
	%		25.9%	41.4%	22.4%	10.3%		100.0%
Q15.6	Count		2	5	22	23	6	58
	%		3.4%	8.6%	37.9%	39.7%	10.3%	100.0%
Q15.7	Count		8	9	21	14	6	58
	%		13.8%	15.5%	36.2%	24.1%	10.3%	100.0%
Q15.8	Count		18	19	15	6		58
	%		31.0%	32.8%	25.9%	10.3%		100.0%
Q15.9	Count		19	25	11	1	2	58
	%		32.8%	43.1%	19.0%	1.7%	3.4%	100.0%
Q15.10	Count		16	23	10	8	1	58
	%		27.6%	39.7%	17.2%	13.8%	1.7%	100.0%
Q15.11	Count		8	16	16	18		58
	%		13.8%	27.6%	27.6%	31.0%		100.0%
Q15.12	Count	58						58
	%	100.0%						100.0%

Tables

RELATIVE INFLUENCE ON PRESCRIBING DECISION FOR NEW DRUG - ANALYSIS BY HOW MANY YEARS DOCTOR HAS BEEN IN PRIVATE PRACTICE

				00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
03	MORE THAN 10 YEARS	Q15.1	Count				11	19	11	41
			%				26.8%	46.3%	26.8%	100.0%
		Q15.2	Count			4	23	12	2	41
			%			9.8%	56.1%	29.3%	4.9%	100.0%
		Q15.3	Count			1	13	22	5	41
			%			2.4%	31.7%	53.7%	12.2%	100.0%
		Q15.4	Count				4	24	13	41
			%				9.8%	58.5%	31.7%	100.0%
		Q15.5	Count		11	17	9	4		41
			%		26.8%	41.5%	22.0%	9.8%		100.0%
		Q15.6	Count		1	3	14	17	6	41
			%		2.4%	7.3%	34.1%	41.5%	14.6%	100.0%
		Q15.7	Count		6	5	16	11	3	41
			%		14.6%	12.2%	39.0%	26.8%	7.3%	100.0%
		Q15.8	Count		13	13	12	3		41
			%		31.7%	31.7%	29.3%	7.3%		100.0%
		Q15.9	Count		13	19	7		2	41
			%		31.7%	46.3%	17.1%		4.9%	100.0%
		Q15.10	Count		11	16	6	7	1	41
			%		26.8%	39.0%	14.6%	17.1%	2.4%	100.0%
		Q15.11	Count		5	10	11	15		41
			%		12.2%	24.4%	26.8%	36.6%		100.0%
		Q15.12	Count	41						41
			%	100.0%						100.0%
	BETWEEN 5 AND 10 YEARS	Q15.1	Count			1	2	4	2	9
			%			11.1%	22.2%	44.4%	22.2%	100.0%
		Q15.2	Count			1	4	4		9
			%			11.1%	44.4%	44.4%		100.0%
		Q15.3	Count				4	4	1	9
			%				44.4%	44.4%	11.1%	100.0%
		Q15.4	Count					8	1	9
			%					88.9%	11.1%	100.0%
		Q15.5	Count		3	5	2			9
			%		22.2%	55.6%	22.2%			100.0%
		Q15.6	Count				4	5		9
			%				44.4%	55.6%		100.0%
		Q15.7	Count			1	3	3	2	9
			%			11.1%	33.3%	33.3%	22.2%	100.0%
		Q15.8	Count		3	5		1		9
			%		33.3%	55.6%		11.1%		100.0%
		Q15.9	Count		3	4	2			9
			%		33.3%	44.4%	22.2%			100.0%
		Q15.10	Count		3	3	3			9
			%		33.3%	33.3%	33.3%			100.0%
		Q15.11	Count		2	3	3	1		9
			%		22.2%	33.3%	33.3%	11.1%		100.0%
		Q15.12	Count	9						9
			%	100.0%						100.0%
	LESS THAN 5 YEARS	Q15.1	Count				2	4	2	8
			%				25.0%	50.0%	25.0%	100.0%
		Q15.2	Count				4	3	1	8
			%				50.0%	37.5%	12.5%	100.0%
		Q15.3	Count			1	3	3	1	8
			%			12.5%	37.5%	37.5%	12.5%	100.0%
		Q15.4	Count			1	1	4	2	8
			%			12.5%	12.5%	50.0%	25.0%	100.0%
		Q15.5	Count		2	2	2	2		8
			%		25.0%	25.0%	25.0%	25.0%		100.0%
		Q15.6	Count		1	2	4	1		8
			%		12.5%	25.0%	50.0%	12.5%		100.0%
		Q15.7	Count		2	3	2		1	8
			%		25.0%	37.5%	25.0%		12.5%	100.0%
		Q15.8	Count		2	1	3	2		8
			%		25.0%	12.5%	37.5%	25.0%		100.0%
		Q15.9	Count		3	2	2	1		8
			%		37.5%	25.0%	25.0%	12.5%		100.0%
		Q15.10	Count		2	4	1	1		8
			%		25.0%	50.0%	12.5%	12.5%		100.0%
		Q15.11	Count		1	3	2	2		8
			%		12.5%	37.5%	25.0%	25.0%		100.0%
		Q15.12	Count	8						8
			%	100.0%						100.0%

Tables

RELATIVE INFLUENCE ON PRESCRIBING DECISION FOR NEW DRUG - ANALYSIS BY NUMBER OF YEARS QUALIFIED

				.00	NO INFLUENCE	MINOR INFLUENCE	MODERATE INFLUENCE	STRONG INFLUENCE	VERY STRONG INFLUENCE	Total
Q4	LESS THAN 10 YEARS AGO	Q15.1	Count				3	2	3	8
			%				37.5%	25.0%	37.5%	100.0%
		Q15.2	Count				5	2	1	8
			%				62.5%	25.0%	12.5%	100.0%
		Q15.3	Count				2	4	2	8
			%				25.0%	50.0%	25.0%	100.0%
		Q15.4	Count				1	4	3	8
			%				12.5%	50.0%	37.5%	100.0%
		Q15.5	Count		1	2	3	2		8
			%		12.5%	25.0%	37.5%	25.0%		100.0%
		Q15.6	Count		1	1	2	4		8
			%		12.5%	12.5%	25.0%	50.0%		100.0%
		Q15.7	Count		1	2	3		2	8
			%		12.5%	25.0%	37.5%		25.0%	100.0%
		Q15.8	Count		2	2	2	2		8
			%		25.0%	25.0%	25.0%	25.0%		100.0%
		Q15.9	Count		3	2	2	1		8
			%		37.5%	25.0%	25.0%	12.5%		100.0%
		Q15.10	Count		2	3	2	1		8
			%		25.0%	37.5%	25.0%	12.5%		100.0%
		Q15.11	Count		1	2	2	3		8
			%		12.5%	25.0%	25.0%	37.5%		100.0%
		Q15.12	Count	8						8
			%	100.0%						100.0%
	BETWEEN 10 TO 20 YEARS AGO	Q15.1	Count			1	3	12	5	21
			%			4.8%	14.3%	57.1%	23.8%	100.0%
		Q15.2	Count			3	9	8	1	21
			%			14.3%	42.9%	38.1%	4.8%	100.0%
		Q15.3	Count			1	7	10	3	21
			%			4.8%	33.3%	47.6%	14.3%	100.0%
		Q15.4	Count			1		14	6	21
			%			4.8%		66.7%	28.6%	100.0%
		Q15.5	Count		4	9	6	2		21
			%		19.0%	42.9%	28.6%	9.5%		100.0%
		Q15.6	Count			2	9	8	2	21
			%			9.5%	42.9%	38.1%	9.5%	100.0%
		Q15.7	Count		1	4	9	6	1	21
			%		4.8%	19.0%	42.9%	28.6%	4.8%	100.0%
		Q15.8	Count		6	6	7	2		21
			%		28.6%	28.6%	33.3%	9.5%		100.0%
		Q15.9	Count		6	9	6			21
			%		28.6%	42.9%	28.6%			100.0%
		Q15.10	Count		7	8	4	2		21
			%		33.3%	38.1%	19.0%	9.5%		100.0%
		Q15.11	Count		4	6	7	4		21
			%		19.0%	28.6%	33.3%	19.0%		100.0%
		Q15.12	Count	21						21
			%	100.0%						100.0%
	MORE THAN 20 YEARS AGO	Q15.1	Count				9	13	7	29
			%				31.0%	44.8%	24.1%	100.0%
		Q15.2	Count			2	17	9	1	29
			%			6.9%	58.6%	31.0%	3.4%	100.0%
		Q15.3	Count			1	11	15	2	29
			%			3.4%	37.9%	51.7%	6.9%	100.0%
		Q15.4	Count				4	18	7	29
			%				13.8%	62.1%	24.1%	100.0%
		Q15.5	Count		10	13	4	2		29
			%		34.5%	44.8%	13.8%	6.9%		100.0%
		Q15.6	Count		1	2	11	11	4	29
			%		3.4%	6.9%	37.9%	37.9%	13.8%	100.0%
		Q15.7	Count		6	3	9	8	3	29
			%		20.7%	10.3%	31.0%	27.6%	10.3%	100.0%
		Q15.8	Count		10	11	6	2		29
			%		34.5%	37.9%	20.7%	6.9%		100.0%
		Q15.9	Count		10	14	3		2	29
			%		34.5%	48.3%	10.3%		6.9%	100.0%
		Q15.10	Count		7	12	4	5	1	29
			%		24.1%	41.4%	13.8%	17.2%	3.4%	100.0%
		Q15.11	Count		3	8	7	11		29
			%		10.3%	27.6%	24.1%	37.9%		100.0%
		Q15.12	Count	29						29
			%	100.0%						100.0%

Tables

QUESTIONS 16 & 17

		YES	NO	Total
Q16.1	Count	33	25	58
	%	56.9%	43.1%	100.0%
Q16.2	Count	38	20	58
	%	65.5%	34.5%	100.0%
Q16.3	Count	27	31	58
	%	46.6%	53.4%	100.0%
Q17.1	Count	12	46	58
	%	20.7%	79.3%	100.0%
Q17.2	Count	13	45	58
	%	22.4%	77.6%	100.0%

Paired Samples Tests

(t- Tests)

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Q8.1	4.5345	58	.65469	.08596
	Q8.6	4.3448	58	.82827	.10876
Pair 2	Q8.6	4.3448	58	.82827	.10876
	Q8.9	4.2586	58	.73890	.09702
Pair 3	Q8.8	4.1207	58	.67739	.08895
	Q8.9	4.2586	58	.73890	.09702
Pair 4	Q8.4	3.7069	58	.87877	.11539
	Q8.8	4.1207	58	.67739	.08895
Pair 5	Q8.4	3.7069	58	.87877	.11539
	Q8.5	3.6207	58	.91436	.12006
Pair 6	Q8.3	3.4138	58	.87928	.11546
	Q8.5	3.6207	58	.91436	.12006
Pair 7	Q8.3	3.4138	58	.87928	.11546
	Q8.7	3.4138	58	1.02657	.13479
Pair 8	Q8.2	2.3621	58	1.08738	.14278
	Q8.7	3.4138	58	1.02657	.13479

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Q8.1 & Q8.6	58	.334	.011
Pair 2	Q8.6 & Q8.9	58	.310	.018
Pair 3	Q8.8 & Q8.9	58	.427	.001
Pair 4	Q8.4 & Q8.8	58	.090	.502
Pair 5	Q8.4 & Q8.5	58	.405	.002
Pair 6	Q8.3 & Q8.5	58	.046	.732
Pair 7	Q8.3 & Q8.7	58	-.096	.474
Pair 8	Q8.2 & Q8.7	58	.099	.459

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Q8.1 - Q8.6	.1897	.86768	.11393	-.0385	.4178	1.665	57	.101
Pair 2	Q8.6 - Q8.9	.0862	.92309	.12121	-.1565	.3289	.711	57	.480
Pair 3	Q8.8 - Q8.9	-.1379	.75969	.09975	-.3377	.0618	-1.383	57	.172
Pair 4	Q8.4 - Q8.8	-.4138	1.06020	.13921	-.6926	-.1350	-2.972	57	.004
Pair 5	Q8.4 - Q8.5	.0862	.97844	.12848	-.1711	.3435	.671	57	.505
Pair 6	Q8.3 - Q8.5	-.2069	1.23911	.16270	-.5327	.1189	-1.272	57	.209
Pair 7	Q8.3 - Q8.7	.0000	1.41421	.18570	-.3718	.3718	.000	57	1.000
Pair 8	Q8.2 - Q8.7	-1.0517	1.41944	.18638	-1.4249	-.6785	-5.643	57	.000

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Q14.1	4.6379	58	.71814	.09430
	Q14.5	4.0172	58	.94575	.12418
Pair 2	Q14.3	3.2069	58	.64233	.08434
	Q14.5	4.0172	58	.94575	.12418
Pair 3	Q14.2	3.8793	58	.79643	.10458
	Q14.3	3.2069	58	.64233	.08434
Pair 4	Q14.3	3.2069	58	.64233	.08434
	Q14.7	3.6724	58	.88631	.11638
Pair 5	Q14.3	3.2069	58	.64233	.08434
	Q14.4	3.6207	58	.79090	.10385

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Q14.1 & Q14.5	58	.242	.067
Pair 2	Q14.3 & Q14.5	58	.196	.140
Pair 3	Q14.2 & Q14.3	58	.255	.053
Pair 4	Q14.3 & Q14.7	58	.090	.500
Pair 5	Q14.3 & Q14.4	58	.123	.359

Paired Samples Test

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	Q14.1 - Q14.5	.6207	1.04003	.13656	.3472	.8942	4.545
Pair 2	Q14.3 - Q14.5	-.8103	1.03376	.13574	-1.0822	-.5385	-5.970
Pair 3	Q14.2 - Q14.3	.6724	.88631	.11638	.4394	.9055	5.778
Pair 4	Q14.3 - Q14.7	-.4655	1.04656	.13742	-.7407	-.1903	-3.388
Pair 5	Q14.3 - Q14.4	-.4138	.95577	.12550	-.6651	-.1625	-3.297

Paired Samples Test

		df	Sig. (2-tailed)
Pair 1	Q14.1 - Q14.5	57	.000
Pair 2	Q14.3 - Q14.5	57	.000
Pair 3	Q14.2 - Q14.3	57	.000
Pair 4	Q14.3 - Q14.7	57	.001
Pair 5	Q14.3 - Q14.4	57	.002

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Q15.1	3.9655	58	.77154	.10131
	Q15.4	4.1552	58	.64350	.08450
Pair 2	Q15.1	3.9655	58	.77154	.10131
	Q15.2	3.3448	58	.71455	.09383
Pair 3	Q15.2	3.3448	58	.71455	.09383
	Q15.3	3.7069	58	.72568	.09529
Pair 4	Q15.2	3.3448	58	.71455	.09383
	Q15.6	3.4483	58	.92095	.12093

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Q15.1 & Q15.4	58	.117	.382
Pair 2	Q15.1 & Q15.2	58	.149	.264
Pair 3	Q15.2 & Q15.3	58	.029	.828
Pair 4	Q15.2 & Q15.6	58	.241	.069

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Q15.1 - Q15.4	-.1897	.94511	.12410	-.4382	.0588	-1.528	57	.132
Pair 2	Q15.1 - Q15.2	.6207	.97022	.12740	.3656	.8758	4.872	57	.000
Pair 3	Q15.2 - Q15.3	-.3621	1.00347	.13176	-.6259	-.0982	-2.748	57	.008
Pair 4	Q15.2 - Q15.6	-.1034	1.02066	.13402	-.3718	.1649	-.772	57	.443