

**AN EXPLORATORY STUDY OF THE RELATIONSHIP  
BETWEEN WELLNESS AND STRESS IN THE  
WORKPLACE**

**By**

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**Declaration**

Unless specifically indicated to the contrary, this project is the result of my own work.

A handwritten signature in black ink, appearing to read "J. M. [unclear]". The signature is written in a cursive style with a large, looping initial.

## Acknowledgements

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- Brandon Pleaner for guidance and direction throughout this project.
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## **Abstract**

The relationship between stress and wellness has been superficially studied in the past. The aim of this research is therefore to explore the relationship between stress and wellness. To discover this relationship a quantitative, structured questionnaire research method is used.

The literature review illustrates the relationship between stress and wellness with specific regard to educators. These constructs are considered individually and then in correlation with each other. Throughout the review a critical approach is adopted to demonstrate various downfalls with the current research in the areas of stress and wellness.

The participants were selected using a representative, non-probability sampling strategy from Sivananda Further Education and Training College in KwaZulu-Natal. The participants for the research totalled 71 employees (46 educators and 24 administration staff). A biographical questionnaire, the Occupational Role Questionnaire and the Perceived Wellness Survey were used to collect the data. The data was then analysed using descriptive statistics, frequencies, factor analyses and bivariate correlations in SPSS.

The results predominantly suggest that the stress levels for the staff at Sivananda FET College are in the normal range while the wellness levels are generally above average. There is also evidence of there being 19 significant relationships between the dimensions of stress and wellness.

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## CHAPTER 1

### INTRODUCTION

The relationship between stress and wellness has been studied superficially in the past. Individually these constructs are both broad and have received a large degree of focus, however, when exploring the relationship between the two the literature is scarce. This point, therefore, lends itself to the predominant aim of this research; to explore the relationship between stress and wellness. There is, to a degree, an indication of the relationship between personal wellness and stress, in past research and literature. The intention of this research is to explore this relationship and determine the significance of the hypothesis that employees with higher levels of wellness have lower levels of stress. To discover this relationship a quantitative, structured questionnaire research method is used.

The literature review begins broadly by providing an overview of the constructs of stress and wellness. It narrows, however, to focus on the relationship between the two and then to focus specifically on stress and wellness as experienced by educators; as the research population has been sourced from Sivananda, a further education and training (FET) college, in KwaZulu-Natal. A large number of references were consulted to review the stress and wellness constructs. Of particular importance are those references that consider the person-environment fit theory of stress, the dynamics of work stress, the determinants of an employee's wellness, a study conducted on educator stress in South Africa and the relationship between stress and wellness.

To collect the data for this research a biographical questionnaire (Appendix C), the Occupational Stress Inventory (Osipow, 1998) (Appendix D) and the Perceived Wellness Survey (Adams, Bezner, Garner & Woodruff, 1998) (Appendix E) were used. The seventy-one employees of Sivananda FET College who participated in this research came from the Central Office, and the Kwa Mashu, Ntuzuma and Pinetown campuses.

The results for this research were obtained using SPSS. The statistical measures used include frequencies, descriptive statistics, bivariate correlations and a factor analysis. These results were provided for the College as a whole and then comparisons were made based on role, gender, healthy eating, overall health and the different campuses. To inform the aim of this

research the results are discussed in light of the relevant literature which is used to support or refute the findings.

The intention of these findings is to highlight the central aims and hypotheses of this study. The aim of this research is to explore the relationship between personal wellness and stress amongst educators with the central hypothesis stating that employees with higher levels of wellness have lower levels of stress.

Within this principal hypothesis further hypotheses are considered:

- The degree of relationship between stress, wellness and role (educator or administration staff).
- The degree of relationship between stress, wellness and gender.
- The degree of the relationship between stress, wellness and exercise.
- The degree of relationship between stress, wellness and perceived healthy eating.
- The degree of relationship between stress, wellness and perceived overall health.

The discussion highlights the degree to which support for these hypotheses was reached. There is some indication that the various hypotheses presented are significant. However there are a number of confounding variables and criticisms to be considered when reading the discussion and the results.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This literature review illustrates the relationship between stress and wellness with specific regard to educators. Both stress and wellness are broad topics with many dimensions to consider. Throughout the review a critical approach is adopted to demonstrate various weaknesses of the current research in these areas.

Section two highlights the construct of stress and then focuses more specifically on occupational stress. This section considers ways of defining stress, theories and models of stress and the mediators and moderators of stress. The focus then moves to occupational stress where reference is made to a specific theory, the person-environment fit theory of stress, as well as various causes of stress.

The third section, similar in format to the second, provides an outline of the wellness construct. Within this section particular reference is made to wellness in South Africa. The discussion then advances to organisational wellness with regards to the wellness of employees.

Section four espouses the relationship between stress and wellness. There is limited research in this area; nevertheless it is important to provide a review of that which is available as this is the focal point of this research topic.

Section five considers stress, specifically how it affects educators. A South African perspective of stress and educators is presented, reference being made to research conducted by the Education Labour Relations Council of South Africa.

Criticisms of the literature in this review are provided in section six. Although a critical perspective is adopted throughout the literature review, this section aims to reiterate the criticisms already noted as well as make reference to additional criticisms.

In section seven the conclusion restates the focal points of the review.

## 2. 2 Stress

### 2.2.1 An overview of stress

#### 2.2.1.1 Defining stress.

According to the Student's Dictionary of Psychology (Stratton & Hayes, 1999), stress can be defined as,

Usually, the effect on a person of being subjected to noxious stimulation, or the threat of such stimulation, particularly when they are unable to avoid or terminate the condition. Major changes in ones life (life events) have been found to be a common source of stress which leaves people vulnerable to depression. Hans Selye found similar physiological and psychological reactions to prolonged stress regardless of the nature of the source. While stress is unpleasant and often damaging, it is also recognized that it may be actively sought (as when apparently some people jump out of aero planes for fun), and is an important source of motivation. The term is also sometimes used for the source of stress (noise, poor housing, etc.), but it would be better if such conditions were called stressors (p.280).

There are, however, many definitions of stress and therefore it is difficult to define it exactly. Furthermore, stress is a construct and not a real 'thing' that can be measured (Gatchel, 1996; Newton, Handy & Fineman, 1996). Thus to a large extent it is measured subjectively.

#### 2.2.1.2 Theories and models of stress

The theories and models of psychological constructs have changed numerous times over the years, due to the furthering of research, and the construct of stress is no exception. Dr. Hans Selye is considered to be the pioneer in stress research (Drafke & Kossen, 2002). Although there are mentions of the stress phenomenon in earlier writings there is no evidence of any theory regarding stress and it is for his theory of stress that Selye has become recognised (Newton et al., 1996). Selye's theory, the General Adaptation Syndrome (GAS), is considered to be ultimately a physiological theory although he did, at times, make mention of sociological and psychological aspects related to stress (Newton et al.). His theory in essence espoused his view that stress resulted in a non-specific physiological response to demands placed on the person from the environment. The reasoning for the term non-specific was because Selye determined that stress responses were the result of *any* harmful or unwanted event (Gatchel, 1996). The responses to these non-specific aversive stimuli are what he

termed the triad of responses (Gatchel, 1996). Namely that the physiological response would be one of an enlargement of the adrenal gland, shrinking of the thymus gland and also bleeding stomach ulcers.

The GAS concept, as developed from this research on stress, consisted of three stages (Gatchel, 1996).

1. Alarm – the person becomes aware of the aversive or noxious stimuli (Gatchel, 1996). The body then adapts to meet the stressor by activating its physiological functioning, such as escalating the adrenal activity which enables it to ready itself to respond.
2. Resistance – the body is ready to cope with and resist the stressor (Gatchel, 1996). If the stressor continues and the body is continuously at this stage of heightened physiological functioning the third stage will then develop.
3. Exhaustion – characterised by the depletion of the body's coping resources owing to the continuation of the stressor/s until it cannot resist it to any further extent (Gatchel, 1996). The result is then the body's adaptation to some form of disease such as cardiovascular disease and/or hypertension (Gatchel, 1996).

A number of criticisms have been leveled against Selye's research on stress; one of which is that the conclusions he draws are very general (Helman, 2001). That is, Selye reasoned that stress is primarily physiological and is determined by evolution and, therefore, stress is considered to be universal. The critique arising from subsequent research states that stress is culture and person specific, both in the cause of stress and in the responses to the stressors (Helman, 2001). That is, culture impacts on what people find stressful and how they deal with these stressors. A further way of conceptualising this criticism is that Selye stated that all people react with the same triad of responses to a stressor. However, the criticism states that this then ignores the fact that psychologically people are different and therefore they regard stressors differently. In other words people cognitively appraise stressors differently and, therefore, react to them differently and thus a stressor which elicits a physiological response in one person may not elicit the same response in another person (Gatchel, 1996).

Mason emphasised this point in his theory of stress when he stated that before a physiological reaction can occur a psychological appraisal of the harmful event must take place. Based on this appraisal, the body will have a physiological response that is equal to the appraisal (Gatchel, 1996). For example if the event is appraised as being only slightly harmful and is

dealt with quickly then the physiological response will not be of an intense degree and not much bodily change will take place. This is a transactional view of stress as it involves a cognitive appraisal of the situation (Oliver & Brough, 2002). This is not to say that Seyle's model should be abandoned. It is important, however, that it be extended and that Mason's ideas be included in the resistance and exhaustion stage (Gatchel, 1996). Seyle's research can, therefore, be regarded as the foundation for further investigation into the stress construct as well as further development of models and theories on stress.

Lazarus and Folkman (1984, as cited in Matthews, 2001 & Cartwright & Cooper, 1997) devised a theory known as the cognitive-relational theory which is categorised as a transactional theory of stress. This theory states that an event is only stressful if it is perceived as such (Newton et al., 1996; Edwards, Caplan, & Harrison, 2000). Lazarus states that the appraisal of the possible stressor is mediated by both the environment and the subjective person (Matthews, 2001). That is, stress is a result of the interaction (transaction) between the specific individual and their specific environment. This is summarised concisely by Lazarus and Folkman (1984, as cited in Matthews, 2001:7); 'Stress is a quality of transaction between person and environment...a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.' To deal with this stress the person either changes their external environment (task-focused) or they change the way that they feel (emotion-focused) (Lazarus & Folkman, 1984 in Matthews, 2001).

Lazarus (1984 as cited in Matthews, 2001) also states that the appraisal that a person makes takes two forms.

1. Primary appraisal – where an event is appraised according to whether it is significant to the person. The person will appraise the event as either irrelevant (little significance), or as a positive and/or beneficial event, or as a stressful event. If the event is appraised as being stressful then a secondary appraisal takes place (Lazarus, 1984 in Matthews, 2001).
2. Secondary appraisal – the person will evaluate what the possible actions can be to deal with this stressor. This includes assessing their available resources and coping mechanisms.



This transaction theory provides a more subjective view of stress and therefore allows for individual differences in experiencing and appraising stress. It has, however, been criticised for not taking into account broader individual qualities and or variables which also affect the way in which an individual will appraise a situation (Oliver & Brough, 2002). For example, Smith and Rhodewalt (1986 as cited in Oliver & Brough, 2002) and Hemenover and Dienstbier (1996 as cited in Oliver & Brough, 2002) state that the dispositional variable of negative affectivity has the potential to have a large impact on the appraisal of a possible stressor. Negative affectivity refers to the individual differences that people have with regards to their negative emotions and self concept (Watson & Clark, 1984 as cited in Oliver & Brough, 2002). Those people with a higher reported level of negative affectivity tend to report events and experiences as being more stressful more often. There has, however, been much debate as to whether negative affectivity should be included in research on stress or whether it should just be controlled as a nuisance variable (Oliver & Brough, 2002).

#### 2.2.1.3 Categories of stress

According to Lazarus and Cohen (1977 as cited in Gatchel, 1996) there are three general categories or types of stress.

- Cataclysmic stressors – those that have a sudden and immense impact on the person, such as a war or a flood (Gatchel, 1996). These stressors are generally viewed as dangerous and life threatening and affect a number of people at one time.
- Personal stressors – also characterised as being sudden and very intense, however, they usually affect a smaller group of people than cataclysmic stressors (Gatchel, 1996). An example of a personal stressor is the death of a parent.
- Background stressors – stressors which become routine (Gatchel, 1996). They are repetitive in nature and tend to become part of the person's life. Initially they are not viewed as having the same impact as the two categories above; however, as they persist over time they begin to elicit the same response within the person. For example job dissatisfaction is regarded as a chronic (impacting over a long period of time) stressor as it slowly gets worse and worse the longer the person works unless some form of change takes place, such as changing jobs (Gatchel, 1996). Evidence suggests that the long terms effects of stress from a background stressor are in many cases more severe than the effects from cataclysmic or personal stressors (Gatchel, 1996).

#### 2.2.1.4 Stress is necessary

By providing this foundation of stress an impression is formed that stress is a result of negative events or stimuli taking place in peoples lives and this stress, if prolonged or of a high intensity, results in negative consequences such as high blood pressure. The reality is, however, that stress is not always harmful and in actual fact people need a certain level of stress to survive (Drafke & Kossen 2002). This concept was also considered by Seyle as he hypothesised that there are two types of stress, distress and eustress (Drafke & Kossen 2002). Distress is harmful or disease-producing stress and eustress is beneficial and necessary stress (Levinson, 2004). Seyle stated that no matter whether the stress is a distress or a eustress it will still result in the same physiological response (Detharge & Mandle, 1998). As was noted earlier this concept has been further developed as it is now believed to be necessary to evaluate the situation and appraise it before determining whether the stressor is one of eustress or distress. This appraisal then determines how the individual is going to react. This concept of perception is also noted in the transactional theories of stress which are considered in a later section on occupational stress.

#### 2.2.1.5 Mediators and moderators of stress

Concepts of stress presented in the research literature differ depending on which source is consulted and the literature on the moderators and mediators of stress is no exception. A further influencing factor of this is the theory of stress which is adopted. For example, if a response-based theory, such as Selye's GAS theory, is followed then there are no mediator and moderator variables as everyone reacts in the same way to stress (Gatchel, 1996). However, if a more modern and common focus is adopted such as a cognitive-appraisal model then the type of person (including their culture and personality) will influence the way in which they respond to the stress (Levinson, 2004). The common influencing factors that are considered to impact on the degree to which stress is the end result include; the ability to perceive the event realistically, presence of situational supports and presence of adequate coping mechanisms (Detharge & Mandle, 1998).

The ability to perceive the event realistically focuses on the degree to which the person correctly understands the relationship between the stressor and the stress response; and then finds the correct problem solving method to deal with the stressor (Detharge & Mandle, 1998). The presence of situational supports refers to social support. Human beings are social beings and, therefore, to be able to deal with a stressful situation they need the support and help of

others (Detharge & Mandle, 1998). The presence of adequate coping mechanisms is very person specific, as with the other influencing factors. That is, everyone has their own preferred mechanisms and behaviours for dealing with stress. If a person has very few of these factors then their stress will, in most cases, lead to negative consequences such as severe illness (Detharge & Mandle, 1998).

Other factors which mediate and moderate the degree to which people deal with stress and how easily they are affected by stress include good nutrition, adequate sleep, exercise and supportive social relationships (Detherage & Mandle, 1998). It is interesting to note that these are some of the many factors which constitute wellness (Donnelly, 1994; Huang, 1995 in Detherage & Mandle, 1998).

A brief mention was made above of people turning to social support and or maintaining their health to help them deal with stress. Together with these and adequate problem solving methods and coping mechanisms a person will in most cases be able to deal with the stress before the consequences are too great. However, in reality, evidence suggests that this is not the case and that the more common responses to stress include the use of drugs, alcohol and cigarettes (The complete manual of fitness and well-being, 1990). These help the person to feel more relaxed and to avoid the stressor for the period during which they are intoxicated. However, owing to the 'good feeling' people have when they consume these substances, as well as the body's physiological changes, they may become addicted to them. This often results in a greater form of stress as they may, for example, become ill or lose their job which will create greater levels of stress and therefore it becomes a vicious cycle (The complete manual of fitness and well-being, 1990).

An individual's employment can also be a mediator and moderator of stress as it can be both a cause of stress, but also a way of reducing stress and enhancing an individual's overall level of wellness (Levinson, 2004). This is, however, influenced by a person's appraisal and experience of stress. Occupational stress is considered in more depth in the following section.

### 2.2.2 Occupational stress

Stress has become a well debated topic especially in relation to employment (Levinson, 2004). As a result there is a great deal of literature and research on this topic and many models and theories of occupational stress have been determined. For example, the transactional theory of

stress, discussed above, has led to more specific theories of occupational stress. Following a brief overview of occupational stress a number of these theories will be considered. Reference will also be made to the more common causes of occupational stress.

#### 2.2.2.1 Occupational stress: a brief overview

Occupational or job stress can be described as resulting in a mind and body arousal from the physical and/or psychological demands of the job (Quick & Nelson, 1997 in Levinson, 2004). Stress can lead to an increase in performance up to an optimal level (eustress). However if the demands of the job continue beyond this point they result in distress and the performance level drops (Levinson, 2004).

Towards the end of the 1900's it was found that, although there were not precise statistics on the phenomenon of stress, it was, when compared with other disabling work injuries, on the increase (National Council of Compensation Insurance, 1985 in Baker & Karasek, 1995). In 1997 it was estimated that the effects of stress cost the United Kingdom economy about £2 billion per year (Cartwright & Cooper, 1997). Although this reference is outdated it does provide an indication that stress comes at enormous cost.

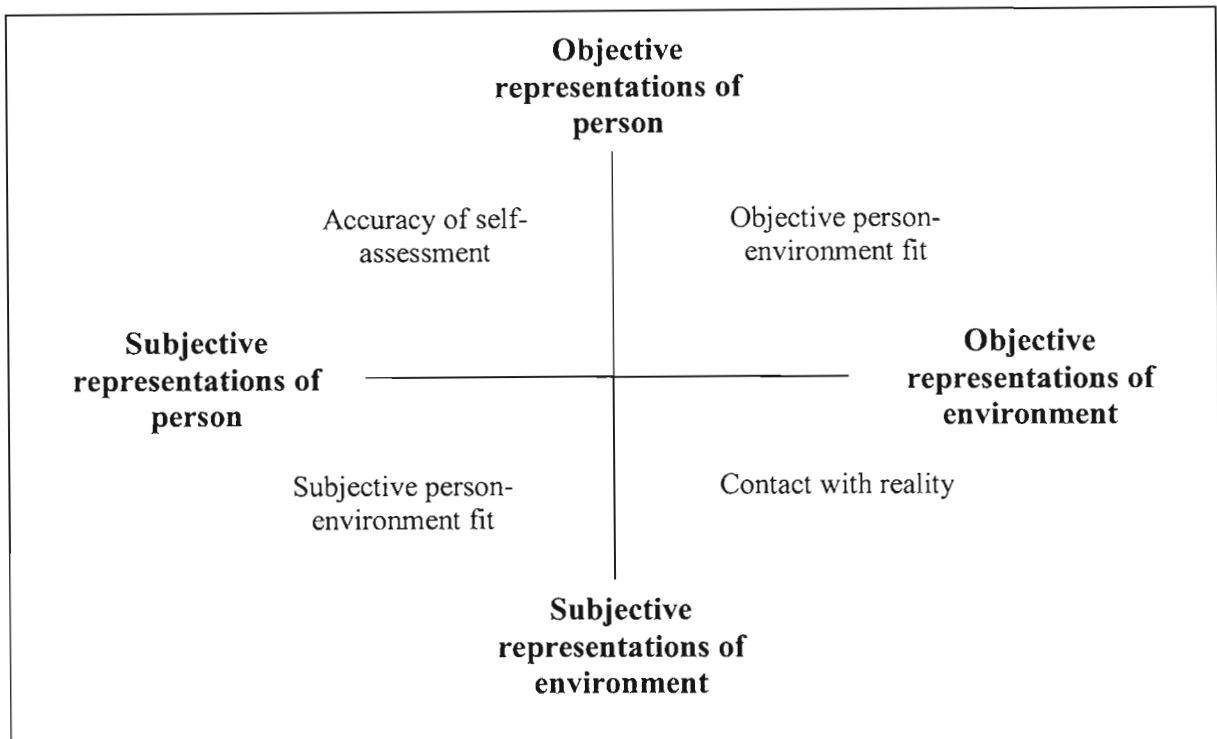
#### 2.2.2.2 Occupational stress theories

A common occupational stress theory to consider is the person-environment fit theory. This theory states that an idiosyncrasy between the characteristics of an individual (for example their abilities and goals) and his or her work environment (for example work demands and organisational climate) will result in psychological, physiological and behavioural strain (Hart & Cooper, 2001). This person-environment fit theory of stress has been extended and used in the cybernetic theory which looks at the relationship between stress, coping and well-being (Edwards, 1992 in Edwards, 2000). The assumption of the person-environment fit theory is that stress is not the result of just the person or just the environment but instead of the degree of congruence between these constructs (Edwards et al., 2000). That is, if there is low congruence between the person and the environment, then stress is more likely to occur.

The person-environment fit theory makes three basic distinctions (Edwards et al., 2000). A diagram representing the first and second distinction can be found in Figure 1 (page 11).

1. The distinction between the person and the environment.

2. The distinction between the objective and the subjective representations of the person (i.e. the attributes of the person as they really exist and the person's attributes as they see them) and the objective and subjective representations of the environment (i.e. the physical and social situations as they actually exist and the situations as the person encounters and perceives them).



*Figure 1: Two basic distinctions (Edwards et al., 2000)*

These two distinctions have a causal relationship and thus combine to give four forms of interaction between the person and environment constructs: the fit between the objective person and the objective environment (objective person-environment fit), the fit between the subjective person and the subjective environment (subjective person-environment fit), the degree to which the subjective environment corresponds to the objective environment (contact with reality) and the representing match between the objective person and the subjective person (accuracy of self-assessment) (Caplan, 1983; French et al., 1974; Harrison, 1978 in Edwards et al.).

3. This distinction considers two different types of person-environment fit: the fit between the demands of the environment (for example job requirements) and the person's abilities (for example whether the person has the skills to meet the demands

of the job) and the fit between the needs (biological and psychological requirements) of the person and whether there are supplies (extrinsic and intrinsic resources to fulfil these needs, for example money) in the person's environment to meet these needs. Thus in summary this theory defines stress as "a subjective appraisal indicating that supplies are insufficient to fulfil the person's needs" (Edwards et al., p.32).

The person-environment fit theory of stress has been criticised for being very general as it does not take into account the specific reactions that people have to different stressors (Warr, 1999). For example it takes into account that stress resulting from a person's job may lead to defence mechanisms such as denial setting in. However, this theory does not make reference to specific stressors and their results. For example working hours will probably cause different stress responses to those triggered by poor work relationships (Warr, 1999).

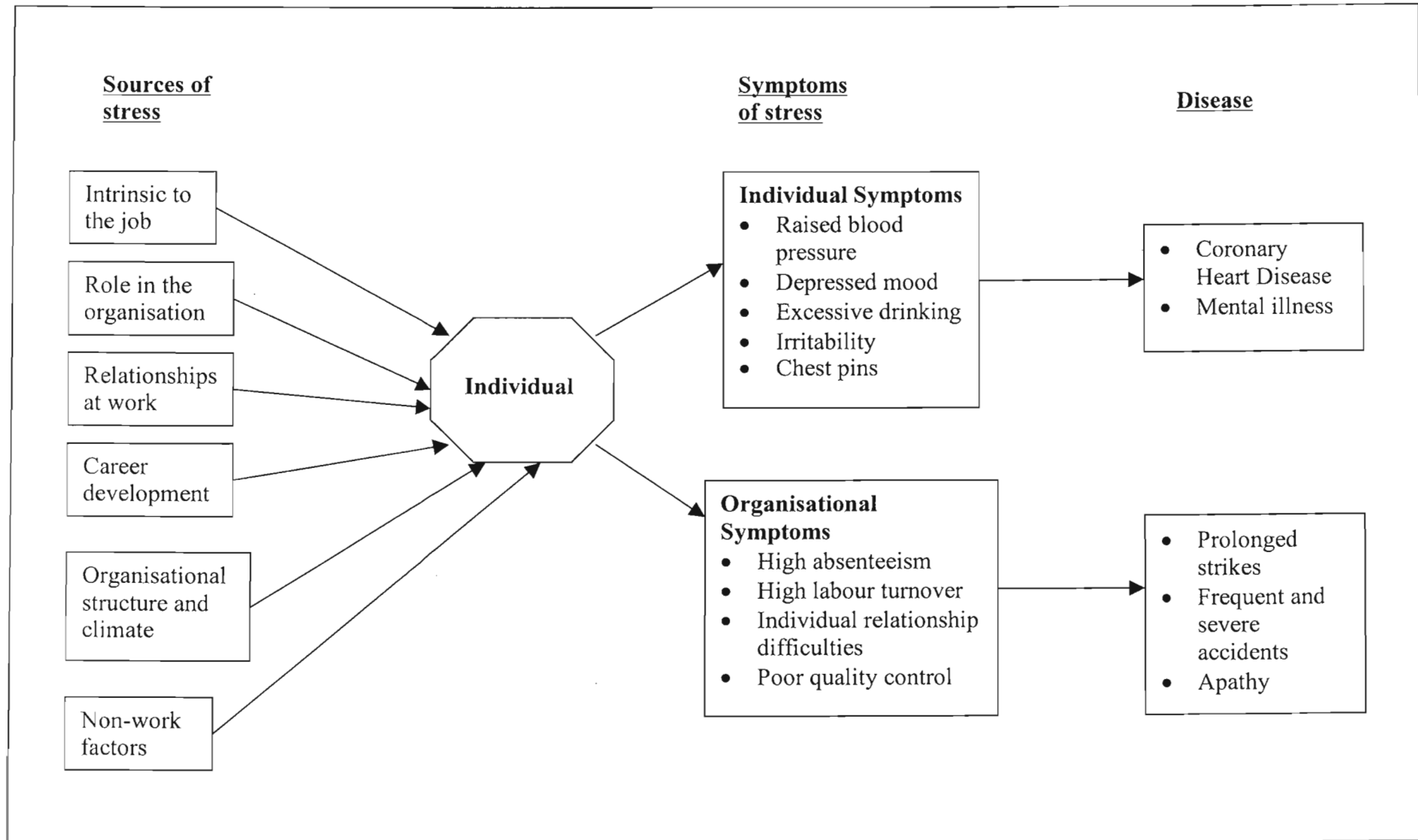
Edwards (2000) extended the person-environment theory and developed the cybernetic theory which states that human beings have self regulating systems which minimise stress (discrepancy) by either causing human beings to change their environment or their standards or both. The cybernetic theory was further extended to include the relationship between stress, coping, well-being, work and family. This theory is relevant to this research as it takes into account the relationship between stress and wellness, as well as, considering how work impacts on both of these constructs. Edwards (2000) emphasises this point by stating that, "the model permits the integration of research on work and family stress, coping and well-being" (p.144). The reason for the extension of this theory is that work and family have been identified as two of the most important areas in a person's life and thus events in these areas can have a large impact on stress and wellness, and in turn the levels of stress and wellness can have a large impact on these areas of life (Burke & Greenglass, 1987, and Zedeck, 1992 in Edwards, 2000). 'This dual emphasis on the person and environment in stress research is characteristic of the interactive perspective in psychology which indicates that behaviour, attitudes, and well-being are determined jointly by the person and environment' (Lewin, 1951; Magnusson & Endler, 1977; Murray, 1951; Pervin, 1989 in Edwards et al., 2000:28).

These models of stress and wellness however, tend to, make correlations only between stress and wellness and do not say much about the nature of the relationship (Edwards et al., 2000). This theory also does not have the ability to predict which objective work conditions are likely to result in stress (Baker, 1985 in Baker & Karasek, 1995). The result is organisations

fashionably focus on reducing the effects of stress and not the causes of the stress (Kompier & Cooper, 1999). Thus invariably the stress returns as the cause is still present. It is important to determine the possible causes of stress and to try to reduce or eliminate them before they become stressors. This is, however, difficult as people perceive and appraise situations differently and, therefore, become stressed by different events. It has also been found that, in giving employees a greater awareness of the possible ways to cope with potential stressors, and providing them with more of a choice of which coping mechanisms to choose, they feel considerably more empowered (Jack, 2004).

A diagrammatic representation of the dynamics of work stress can be found in Figure 2 (page 14). This is an example of a stimulus-based model of stress. The first column of the diagram (reading from left to right) looks at the factors which may become stressors for an employee.

1. Those factors intrinsic to the job – These include poor working conditions (bad physical setting of the workplace), shift work (this affects family and social life), long hours, travel (waiting for delays; away from the family), risk and danger, new technology (having to constantly change especially when there is a lack of understanding of the new technology), work overload (both quantitative – too much work and qualitative – the work is too difficult) and work underload (Cartwright & Cooper, 1997).
2. The employee's role in the organisation – A role can become stressful if it is not clearly defined and or understood by the individual and also when the expectations are not clear. Also if the employee's role is in conflict, that is, the employee is expected to do tasks that are not actually part of the job, and finally if the employee has more responsibility than he/she can handle (Cartwright & Cooper, 1997).
3. Relationships at work – These can provide the greatest support for employees, but at times they can also become extremely stressful. These relationships include those with superiors (these relationships are stressful if superiors are not considerate), relationships with subordinates (when managers do not know how to delegate and have differing views to their subordinates) and relationships with colleagues (stress results from differing ways of working and different personalities) (Cartwright & Cooper, 1997).



*Figure 2: Dynamics of work stress (Cartwright & Cooper, 1997:14)*



4. Career development – Stems from lack of job security, (especially true as a person gets older) as well as from job performance (the stress results from job evaluations and performance appraisals) (Cartwright & Cooper, 1997). Stress may affect both those doing the appraisal and those being appraised.
5. The organisational structure and climate – Employees often do not feel they ‘fit in’ which can result in stress (Cartwright & Cooper, 1997). For example some employees may find it difficult to adjust to the organisational culture if it clashes with their own.
6. Non-work factor – Stress may stem from the pressure between family and work balance (Cartwright & Cooper, 1997). Some employees find it difficult to work and have enough time to spend with their families. The above stressors do not only impact on the employees but also on their families. There are often conflicting demands from the organisation and the family, for example the employees may have to bring their work home. This form of stress is particularly evident in families where both the mother and father work (dual-career families).

These dimensions or sources of stress provide only a general view of the possible causes of stress. This model fails to take into account the individual person and the external environment as a transactional model would. For example, one employee may find their role in an organisation to be stressful while another employee performing the same role may not find it stressful (Arnold & Barling, 2003). Thus, were the organisation to change the role to help the first employee, the second employee might find his/her new role stressful.

The second part of the diagram considers the effect that these potential stressors have on both the employee and the organisation. For the individual, they can develop biological, affective and behavioural problems (Drafke & Kossen 2002). At the organisational level the possible results of these stressors are that of absenteeism, reduced productivity and employees claiming compensation from their medical aids as well as direct medical expenses (Karasek & Theorell, 1990 in Cartwright & Cooper, 1997; Carroll, 1999).

The final part of figure 2 illustrates the long term results if the symptoms of the stress continue. These can be detrimental to both the individual and the organisation (Cartwright & Cooper, 1997).

An ethical and legal consideration has also developed as a number of organisations have been taken to court owing to employees suffering from ‘unreasonable’ stress levels (Carroll, 1999). In order to avoid litigation and the undesirable long-term affects of stress described above, it is in any organisation’s best interests to reduce the stressors within it. For example, some companies have introduced counselling to help those employees suffering from high levels of stress; others have introduced improved dietary programmes, exercise programmes and relaxation techniques (Cartwright & Cooper, 1997). In these cases, however, the companies are not actually dealing with the causes of stress but only the symptoms.

### 2.2.2.3 Causes of occupational stress

In later sections of this project it will be apparent that the researcher is using the Occupational Stress Inventory to collect some of the necessary data. Specifically the questionnaire on occupational stress will be used. This questionnaire focuses on role overload, role insufficiency, role ambiguity, role boundary, responsibility, and the physical environment. It is, therefore, important to provide an explanation of these concepts. It is also important to note that these are not the only causes of stress. The causes mentioned above are those that have been found (through much research) to be the most predominant causes (Cartwright & Cooper, 1997; Osipow, 1998). These will, however, differ in degree depending on the individual and their appraisal and perception of the stress as stated in the transactional approach to stress (Edwards, 2000). It is also important to note that, with reference to these dimensions, they are not always stress causing by themselves but when they interact they may illicit a stressful response from the employee (Osipow, 1998).

- Role overload: the degree to which the demands of the job are greater than the employees’ personal and workplace resources.
- Role insufficiency: whether the employees’ education, training, skills and experiences are appropriate for their particular jobs.
- Role ambiguity: measures whether the priorities, expectations and the criteria used to evaluate the employees’ are understood and clear to them.
- Role boundary: examines whether the employees have conflicting role demands and loyalties within their employment.
- Responsibility: the degree to which the employee feels a large amount of responsibility for the performance and welfare of others on the job.

- Physical environment: the degree to which the individual is exposed to high levels of toxins in the environment and extreme physical conditions. (Osipow, 1998).

These dimensions can be linked to the person-environment fit theory as well as the dynamics of work stress model (page 14) to provide an example of a possible cause of stress. For example, the employee is required to perform a certain role in their job. However, he/she has not received the training for this role and thus he/she does not have the necessary abilities to perform this role. Hence, there is evidence of role insufficiency and furthermore the fit between the demands of the environment and the person's abilities are poor. This is then hypothesised to result in a stress response for the employee. Additionally the employee may not be excelling in their job as they do not understand it and, therefore, a personal psychological requirement of success may not be fulfilled (career development). This could also be a cause of stress. Due to poor performance they may not receive a salary increase which can become a stressor as now they cannot afford to support their family (non-work factor). This example illustrates how intertwined all the dimensions of stress become. It also illustrates how naïve it may be to consider only one theory when examining the phenomenon of stress.

Currently, the prime dimensions causing stress in the workplace are role overload and responsibility (Cartwright & Cooper, 1997). The reason for this is the increase in global competition, reorganisation of companies (mergers and acquisitions) and in the process redesigning of jobs (Cartwright & Cooper, 1997). As was stated earlier, the causes of stress in the Occupational Stress Inventory are not the only causes and some further causes are discussed below. Although these are not being tested for in this project, it may be interesting to have an understanding of them when examining the results of the data collection. The reason being that if significant results are not found with regard to the Occupational Stress Inventory, it could be due to those factors not being the cause of stress and the factors below may then need to be tested for.

To illustrate a further stress causing factor the Demand-control model of stress is used. This model states that work stress results from the work environment, such as the structure of the organisation (for example work pace control), rather than from the personal attributes of the employee (Karasek, 1979 in Dollard, 2003). It is the demands of the job in conjunction with decision latitude which the employee has that results in stress (Jonge & Dorman, 2003). It is

generally noted that employees with excessive job demands and little freedom to make decisions are the ones with higher levels of stress (Jonge & Dorman, 2003).

Another cause of stress is lack of participation (some employees would like to participate more but are not given the opportunity) (Drafke & Kossen, 2002). A model to illustrate this cause is the Effort-Reward Imbalance Model (Dollard, 2003). This adopts the transactional theory of stress as it takes the environment as well as the individual and their coping mechanisms into account. This theory would state that some people like to participate more but then they expect to get a reward commensurate with their effort (Jonge & Dorman, 2003). If they perceive their effort and participation to be more than the reward which they receive a stress response may be induced.

### 2.2.3 Conclusion

In considering the concept of stress and then more specifically occupational stress it is evident that there are many theories and models of stress. This is the result of there being varied interpretations of stress resulting in no single definition of stress as well as the critiques which are continuously levelled against all theories, models and researchers.

For the purpose of this project more attention was given to certain aspects such as the dimensions of the Occupational Stress Inventory. It is important to note that owing to the wide scope of the stress phenomenon, the information provided is the information necessary to support the project while at the same time giving some indication of stress. This section on stress covered a number of theories and models of stress from the early theories to more modern ones. It included some of the moderators of stress. It also focused on occupational stress and more specifically the necessary theories of occupational stress. Throughout a critical view point was adopted.

## **2.3 Wellness**

### 2.3.1 An overview of wellness

Wellness is a relatively new area of research and although there is a limited amount of information on this topic, and especially on the relationship between stress and wellness in the workplace, it is increasing (Crabb, 2004). This increase is due to the fact that globally people are concentrating more on maintaining their health in preference to having to expend time and money regaining their health once they have lost it.

### 2.3.1.1 Defining Wellness

As with stress there is no single definition of wellness. Corbin and Lindsey (1997:5) define wellness as “the integration of all parts of health and fitness (mental, social, emotional, spiritual, and physical) that expands one’s potential to live and work effectively and to make a significant contribution to society. Wellness reflects how one feels (a sense of well-being) about life as well as one’s ability to function effectively.” It is important to state that the terms wellness and well-being are used interchangeably in much of the literature consulted. For the purpose of this research the definition provided above by Corbin and Lindsey (1997), will constitute the focus in this section. One of the reasons why there is such a debate over the definition of wellness is that it is a construct and not a real ‘thing’ that can be measured (Gatchel, 1996; Newton et al., 1996). The same point was made for stress in section 2.2.

Wellness can be viewed as part of an individual’s well-being, life satisfaction and quality of life (Edelman & Fain, 1998). Wellness is not viewed as a static state but rather on a continuum where it is dynamic, changing along this continuum from a high level of wellness to a lower level of wellness with differing degrees in between. Thus a high level of wellness would constitute a movement toward a better level of functioning, an open-ended future of challenges and the integration of the entire person (Neilson, 1988 in Edelman & Fain, 1998). This creates a challenge in that ways have to be found to achieve this high level of wellness for all human beings in everyday life (Edelman & Fain, 1998).

Wellness is considered to form part of the holistic approach to health which identifies different dimensions of wellness, such as, physical health and fitness, mental health, stress management, environmental safety, emotional stability, social effectiveness and spiritual harmony (Baltus, 1988; Cohen, 1998). The premise of holistic health is that the individual is responsible for their own health (Cohen, 1998). That is, they do not rely on others to make them healthy, they become active in their own health. To achieve this people require a certain amount of help but ultimately the responsibility is theirs. For example an organisation may provide gym membership free of charge for all employees, to help with the physical dimension of wellness. However, it is up to the employees to use this membership. Thus, health professionals may be approached for help but will work on the basis that they do not have all the power; that the clients also have a role to play in their own health and, therefore, they would encourage each of them to take a look at their entire lifestyle and to make changes that will assist them in improving their health. For example, they will not just prescribe

medication but will try to determine the cause of the illness and get the client to eliminate this cause by; for example, changing their eating habits or improving their interpersonal relationships (Cohen, 1998). This sort of approach is often used to treat cancer sufferers. To have chemotherapy only is not always enough and often the improvement of their relationship with friends and family can help cancer sufferers fight the disease. This is because there are those aspects of wellness which are not explainable and which act spontaneously (Adams, Bezner, Steinhardt, 1997).

The critique of this holistic approach to health is that not all cultures believe in this individuality, where individuals are responsible for themselves. This view is based on western approaches to wellness. Thus, within South Africa and the African society for example, there are cultures that value and rely on others as an influencing factor in having a high level of wellness and also causing illness (Mkhize, 2004). Mkhize (2004) states that illness in an African context, is based on a relatedness concept and not on an abstract view. African societies believe that helping others and being responsive to others' needs constitutes the way of life. Thus, they do not believe that individuals are responsible for their health alone, they need the support and help from others (Mkhize, 2004). For example, when there is a death in an African community it is viewed as a communal loss and is dealt with collectively (Eagle, Hayes, & Sibanda, 1999). It is important that organisations realise this when they are trying to increase the employees' levels of wellness. A purely western approach to wellness is not sufficient.

#### 2.3.1.2 Dimensions of wellness

It is important that definitions of the different aspects that constitute wellness are provided to give a better understanding of the focus taken in this research. These are defined by Corbin and Lindsey (1997) and Adams et al., (1997) and are listed below:

- Emotional wellness – positive self esteem: This dimension considers the components of self-esteem and whether the person is able to deal with daily situations in an optimistic and productive way. Having a higher self-esteem often leads to an increase in physical activity and an internal wellness orientation.
- Intellectual wellness – the ability to learn new information: This dimension focuses on the persons ability to learn new information and then to use this information to improve their

day to day living. To achieve this, the person has to receive the correct amount of intellectual stimulation. If they are over or under-stimulated, it can affect their health.

- Physical wellness – ability to use motor skills correctly and be physically fit: It is also related to a positive view of your fitness level. This dimension furthermore incorporates the ability to meet the demands of the day's work as well as the ability to control for time management.
- Social Wellness – the ability of the person to interact with others successfully: Also to establish meaningful relationships. It also includes the support obtained from family and friends during times when this is needed, as well as the support which you provide to others
- Spiritual wellness – the ability to establish and maintain a value system: It also generally includes a belief in a force greater than an individual.
- Psychological wellness – concept of optimism: This is the final dimension and focuses on the belief that people have positive outcomes in relation to the events and circumstances which they experience in their life.

All of these dimensions are important to the wellness of the person. Many of them overlap and they all interact. Thus, the level of wellness in one often depends on the level of wellness in another and at the same time may be affecting the level of wellness in still a further dimension. Baltus (1988) states, when one of these dimensions is experiencing problems it then affects the individual's total well-being.

#### 2.3.1.3 Wellness in South African populations

A large quantity of the research on stress and wellness has been conducted in western industrial societies (Dollard, 2003). However, there have been several studies conducted in South Africa such as a study completed by Wissing and Van Eeden (2002) in which they investigated the psychological wellness of a South African population. This study was conducted on a multicultural group of 550 people in the Vaal Triangle. The sample consisted of men and women, white and black people in the age range of 18 to 65+ years old.

The participants had to complete a number of questionnaires which included:

- The Affectometer 2 (measures general happiness or sense of well-being).
- The Satisfaction with life scale (person's assessment of his/her quality of life according to his/her own criteria).

- The Sense of coherence scale (individual's way of experiencing the world and his/her life in it).
- The Attitudes about reality scale (individual's world view).
- The Coping strategy indicator (the degree to which the individual uses three different coping strategies).
- The Generalised self-efficacy scale (the degree of individualised self-efficacy beliefs of an individual).
- The Perceived social support scale (the degree to which individuals believe that their needs for support, information and feedback are fulfilled by friends and/or family).
- The Personal orientation inventory (measures values and behaviours typical of the self-actualising, optimally functioning individual).
- The Profile of adaptation to life (focuses on essential health-related life styles that contribute to emotional and physical well-being).
- The General health questionnaire (helps to differentiate those individuals with a psychopathology) (Wissing & Van Eeden, 2002).

The methods of assessment were checked for validity in terms of the tests being developed in western communities but being used on non-western populations. The results of these validity tests were taken into account in the interpretation of the participants' results. Wissing and Van Eeden's (2002) research showed a number of significant differences. The most noticeable and worthy of comment include differences in psychological wellness between age, gender and race. They found, for example, that Black South Africans scored lower on certain aspects of psychological well-being than White South Africans; while women (both black and white) evidenced lower levels of wellness than their male equivalents. They also discovered that the older participants had a higher level of well-being than the younger participants, who were aged between 18 and 35 years old.

The most prominent limitation found, with regards to this study, is that not all the relevant and available but necessary measures of well-being were included (Wissing and Van Eeden, 2002). Furthermore for future research of this nature Wissing and Van Eeden (2002) state that it is important to focus on what enhances well-being as well as researching what facilitates the congruence between individual and group wellness.



Although not South African research, there is other evidence to support the finding that men have a higher level of psychological wellness than women. Gender differences are often found in research on wellness (Nolen-Hoeksema & Rusting, 1999). For example, women show a higher level of depressive and anxiety disorders as they experience higher levels of fear, sadness and guilt than men and are better at communicating it. These differences are said to be a result of personality differences which are affected by the context in which the person lives (Nolen-Hoeksema & Rusting, 1999). Thus depression and anxiety are also socially and culturally determined. Therefore, this finding may to a large extent be generalised and may differ from culture to culture.

#### 2.3.1.4 Models of wellness

There are a number of different models of wellness which have been adapted over time to suit modern emerging ideas and hypotheses. These models do, however, share similar constructs or dimensions of wellness which include social, occupational, physical, intellectual, spiritual, emotional, stress management, self responsibility and acceptance, nutritional awareness and environmental sensitivity (Degges-White, Myers, Adelman, & Pastoor, 2003). The exact dimensions differ slightly depending on the model used. The interaction of the dimensions is very important as Hettler (1984 in Degges-White et al., 2003) states that human beings make choices within each dimension in order to be successful in that dimension which will lead to overall life success and a high level of wellness. This is because, as Sweeney and Witmer (1991), Witmer and Sweeney (1992), and Myers et al. (2000) (all as cited in Degges-White et al.) state, all the dimensions are interrelated which implies that changes in one dimension will affect the other dimensions.

According to Adams et al., (1997) the concept of wellness should be considered from a systems theory perspective. That is that each part of the system is an independent system but also an essential component of the larger system. Dunn (1961 as cited in Adams et al., 1997) stated that an individual requires all the wellness dimensions to function for homeostasis to be maintained. A change in one dimension will initiate adaptation in other dimensions. He also stated that the different dimensions of the system are interrelated, where one dimension is equally dependent on another dimension. To explain this better it can be stated that individuals function simultaneously in multiple wellness dimensions and at various levels within these dimensions. For example the loss of employment will result in a decline in finances (financial dimension) which may result further in a decrease in the individual's social

life (social dimension) further resulting in a feeling of depression (emotional dimension) which could cause a rise in stress levels resulting in headaches (physical dimension). Either a change would have to take place such as finding new employment or adaptation would have to take place such as a lowering in standards of living. This interaction implies that the causes of stress and wellness are multidimensional. Finally it is important to note that, according to Adams et al., any models of wellness must, or should, include cultural, environmental and or organisational factors.

#### 2.3.1.5 Enhancers of wellness

There are a number of ways which have been found to enhance people's wellness. This would obviously depend on the people themselves and the areas in which they need to enhance their wellness. For example, the affect of receiving or not receiving an income has some form of impact on a person (Argyle, 1999). This would depend on the degree to which that individual values money. In general all people need money or some form of purchasing power to survive, however, each person will determine how much money they need to survive. An individual who has enough money to provide the basic necessities for their family may regard themselves as financially well, whereas someone who values many material goods, but who cannot afford them, may believe that they are financially unwell. However, in general it has been found that keeping physically fit through exercise, healthy eating and having a regular sleep pattern, go a long way, towards improving a person's level of well-being and at the same time reducing their levels of stress (The complete manual of fitness and well-being, 1990).

Social support is another important aspect in the development of a high level of wellness (Williams & House, 1985). Of this dimension the emotional aspect has been found to be the most important, that is, the emotional concern people feel for each other (House, 1981 in Williams & House, 1985). This may be regarded as an important dimension within some of the African cultures as they value social support highly and believe that they need others in order to survive (Mkhize, 2004).

As was stated above one of the dimensions of wellness is that of spirituality. 'Increasingly...researchers are acknowledging the role of spirituality in a healthy society' (Toronto Star, 2005:10). Spirituality for the purposes of this research, is defined as, "a belief in a unifying force, an integrative force between the mind and body, or as a positive meaning

and purpose in life” (Adams et al., 1997:210). The last aspect, purpose of life, has been found to be the most significant at enhancing people’s levels of spiritual wellness. The evidence suggests that this may be more important for the older generation (Argyle, 1999). As has been noted above, it is important that the degree to which individuals value spirituality as being important to their wellness is based on their culture and beliefs.

Evidence from research into well-being states that paid employment has a considerable impact on the well-being of the majority of adults (Warr, 1999). Adults hope to gain from employment, aspects such as an income and satisfaction from their job. However, many individuals also experience large amounts of stress with their jobs and this can affect their behaviour and well-being in a number of ways (Warr, 1999). There tends to be a circular relationship when it comes to job well-being and overall well-being. An individual’s total well-being has a strong influence on their job-specific well-being; however the job-specific well-being also impacts on the individual’s general well-being (Warr, 1999) (this relationship is better explained in Figure 3, page 29).

Whether a person is married or not also impacts, for some, on their level of well-being. Williams (2003) states that in the past it was determined that men’s marital status was more important to their well-being than for women, but that the quality of the marriage is more important to women. She states however that these beliefs are changing owing to changes in family and gender roles. Thus, presently, evidence suggests that both men and women are affected in the same way from either being married or not being married and from the quality of the marriage (Williams, 2003).

### 2.3.2 Wellness in the workplace

“Wellness is one of the hottest topics in people management, thanks to a tight labour market, increasing awareness of the cost of sickness and stress-related absence and a greater focus on the contribution of fitness and well-being to productivity and high-performance working...” (Crabb, 2004:1). ‘Research suggests that employees in poor health cut productivity by around 20 per cent. Proving a direct link between wellness and the bottom line may be a holy grail for occupational health practitioners but for an increasing number of people management professionals, proof is already there’ (Crabb, 2004:1). These two quotes illustrate that wellness for an organisation is important for the reason that it is strongly related to productivity. It has also been suggested that society should focus on keeping people healthy

and well instead of healing them when they are sick (pro-active approach) (Persaud, 2004). The World Health Organisation (as cited in Adams et al., 1997) also supports this concept as they state that health is the complete physical, mental and social well-being and that it is not just the absence of disease. Wellness in the workplace therefore becomes part of the organisation's social responsibility to ensure that employees remain healthy (Edwards, Caplan, & Harrison, 2000).

There is a critique however, that organisations focus on keeping people healthy for selfish reasons (Edwards, et al., 2000). The reason being that if the employees' needs are being fulfilled then in the long run so are those of the organisation. Organisations need healthy employees (employees who are not suffering from incapacitating levels of stress) so that they can place demands on the employees which the employees are able to meet and so fulfil the organisations' needs. If the employees' wellness needs are met then they are assumed to be generally healthier and better able to cope with work which in turn means that the organisation gets the work completed and fulfils its organisational needs.

It has been found that one of the biggest work-related determinants of an employee's wellness is their level of job involvement (Riipinen, 1997). If the person is highly involved in their job but is not able to fulfill their needs then they exhibit low levels of well-being (Riipinen, 1997). This can also be linked to the effort-reward model of stress discussed in section 2.2 (Dollard, 2003). It must not be forgotten that this again depends on the individual employee as each is unique and thus this is a general finding.

Evidence of low levels of wellness, even if portrayed at work, does not necessarily mean that the cause is work or job related. It has been found that a large contribution to a person's wellness is their economic and emotional stability (Roberts, 2004). This is linked, in most cases, to their stability at home and, therefore, it has been found that many employees take sick leave not because they are actually physically sick (organisations provide sick leave for the purpose of being physically sick) but because of work-related as well as domestic and social problems (Roberts, 2004). Thus by increasing the levels of total wellness for employees' in these areas it may result in a decrease in sick leave.

### 2.3.2.1 Wellness programmes

It is, however, important to remember that all employees are different and what helps to improve one employee's wellness levels may not help to improve another (Persaud, 2004). It may in fact increase the stress level of the employee as they are being encouraged to do something which they do not enjoy. For example, the employee may not get pleasure from physical activities such as attending a gym as he/she may not view that as being important to their wellness. Thus organisations should develop a number of options to try to improve the employee's wellness so that they cater for the majority of the employees needs. To improve the appropriateness of the wellness programmes introduced into organisations, the employees should be involved in their development (Jack, 2004). This helps to ensure that they accept the programme and that it is applicable to all those concerned. Despite this consideration and the difficulty in finding and funding a programme which can be applicable to the majority, if not all of the employees, evidence has been found that suggests that when employees participate in wellness programmes there is a large reduction in their absenteeism (Aldana, Merrill, Price, Hardy, Hager, 2005). Aldana et al., (2005) obtained this evidence while conducting a study on a wellness programme at a school in the United States.

A further supporting factor for the successfulness of wellness programmes in organisations is that they work because it is where employees spend a large amount of their time (Rest, 1995). For example, if the company introduces a no smoking policy and provides help for employees to stop smoking this has a greater chance of being successful. The reason being, that the employee spends a large portion of their day in this smoking prohibited environment. This can be compared to trying to stop smoking at home as there are no enforced rules and a limited support system to help them.

For the above mentioned programmes to be successful it is important that the organisation has policies and procedures in place to comprehensively address the health and safety issues (Cooper & Cartwright, 2001). For example, it will have very little effect if a dietician comes to talk to the employees and then the staff canteen does not serve nutritious food, or a doctor comes to speak about the effects of smoking but the employees are allowed to smoke anywhere they want to in the workplace. As stated above, these policies and procedures must be based on both the needs of the organisation and the employees and it is important that they are reviewed and updated on a regular basis (Cooper and Cartwright, 2001).

Employee Assistant Programme (EAP) interventions are increasingly focusing on workplace and worker wellness (Derr & Lindsay, 1999 in Kirk & Brown, 2003). This is due to the fact that organisations are focusing more on this as the current research trends suggest that there is a positive relationship between positive psychological states and organisational well-being (Van Den Berg 2000; Maslach, Schaufeli, & Leiter 2001, in Kirk & Brown, 2003). Kirk and Brown (2003) state that it is important that EAP's focus on improving the individual's wellness both by educating the employee and by getting the organisation to change areas that are affecting his/her wellness levels such as reducing stressors. This has been introduced as previously the focus of the EAP's was entirely on the individual and not the organisation which also needs to change in order for wellness amongst employees to improve.

#### 2.3.2.2 A model of employee wellness

An example of a model of employee wellness can be found in Figure 3 (page 29). This model illustrates specifically the determinants of wellness. The model differentiates between job-specific well-being and context-free well-being. The bi-directional arrows between these two forms of well-being illustrate that they impact on each other.

With regards to the job-specific well-being, it is evident that it is impacted on by the environment which constitutes features of the job. These could be, for example, as illustrated above, that of job involvement (Riipinen, 1997). The job environment is in turn impacted on by a person's perceptual and behavioural influences such as their positive and negative affectivity (personality traits that reflect individual differences in people's emotions and feelings about oneself) (Warr, 1999). The negative personality traits are the traits which in many cases lead to a low sense of job well-being as they may cause high anxiety (Warr, 1999).

This is, however, ultimately affected by the individual as all people act differently depending on aspects such as age, gender and ethnic group which also impact on well-being (Warr, 1999). The result of all these forces helps to determine an individual's job-specific well-being. For example whether the person feels enthusiastic about their job or whether they are anxious with regards to their job.

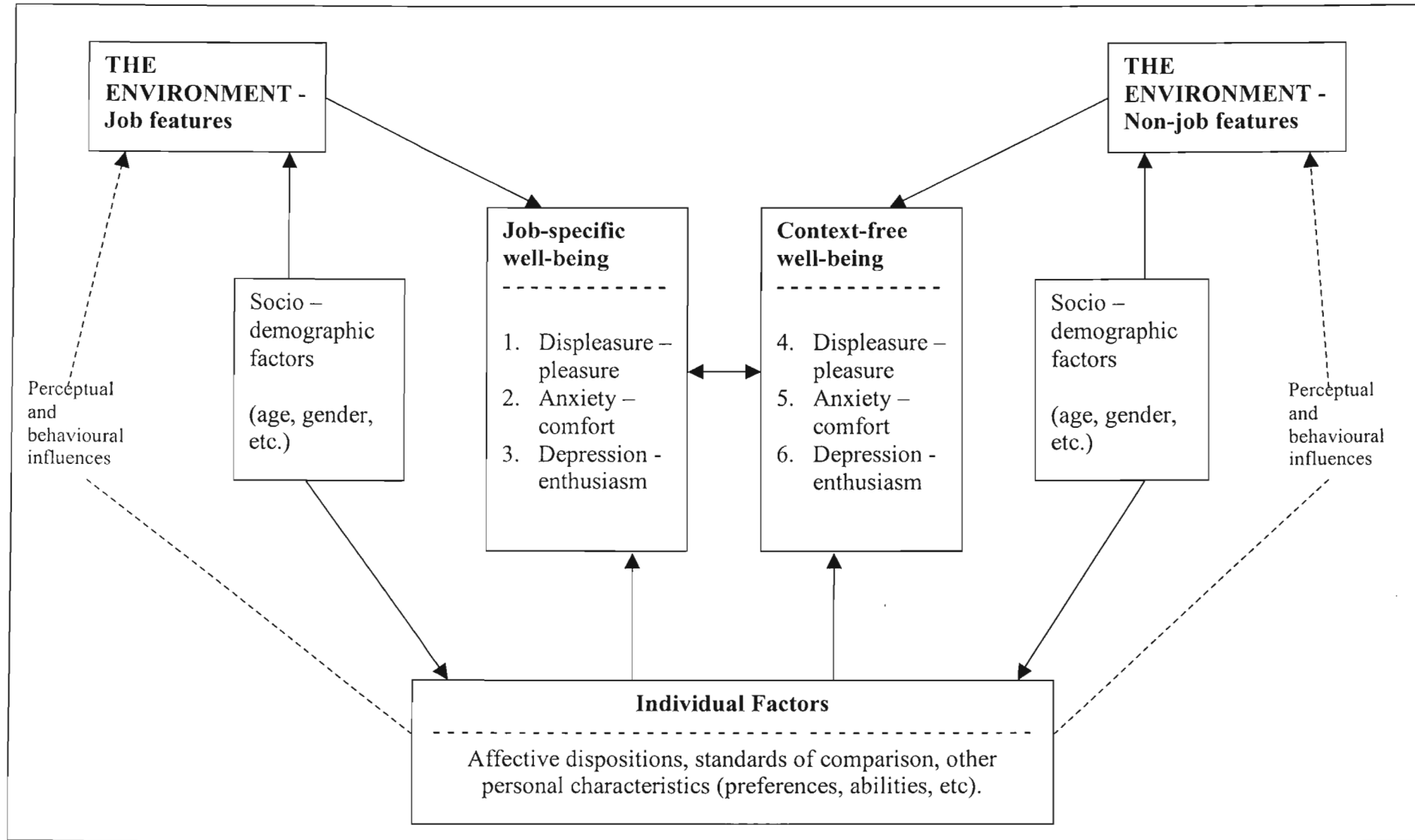


Figure 3: A model of employee well-being and its determinants (Warr, 1999:400)

The same explanation can be provided for context-free well-being. The only difference here is that all the factors mentioned above also have an impact on all other aspects of well-being other than job-related features within the work environment (Warr, 1999). For example a non-job feature may be whether or not a person has friends in the workplace (social fulfillment).

Warr (1999) concludes by stating that there is, therefore, a relationship between well-being and performance in the job, absence from work and staff turnover. He does, however, also mention that the problem with this model is that there is still debate as to the direction of the relationship. In other words, is it a high level of well-being that leads to higher job performance or is it high job performance that leads to a high level of well-being?

### 2.3.3 Conclusion

As with the section on stress this section was a critical review of the aspects of wellness necessary for this research. The section provided an indication of what constitutes wellness and the difficulty of defining wellness. A description of each dimension of wellness was also included and by providing models of wellness the interaction of all these dimensions was illustrated. The researcher progressed to discuss wellness specifically within the work place. By diagrammatically showing an example of the determinants of employee well-being it is possible to ground this understanding. To complete this section on wellness it can be stated that “Perceived wellness is a *multidimensional, salutogenic* construct, which should be conceptualized, measured, and interpreted consistent with an integrated *systems view*” (Adams et al., 1997:209).

## **2.4. Illustrating the relationship between stress and wellness**

Although, as mentioned in section 2.3, wellness is a relatively new area of research, there is some indication in the literature that there is a link between stress and wellness. Newton et al. (1996), Cartwright and Cooper (1997) and Corbin and Lindsey (1997) state that people who have a higher level of wellness have a lower level of stress.

### 2.4.1 Illustrating the relationship between stress and wellness

Social support has been evidenced as one of the factors which influence the stress response. That is, if the person has a good level of social support they are more likely to be protected against stress (Helman, 2001). This links in with the previous section on wellness as this is considered to be one of the dimensions of wellness (Corbin & Lindsey, 1997). That is, if you



have a high level of social support it contributes to your overall wellness as well as increasing your capacity to deal with stress. A similar link can be made for economic status (Helman, 2001). Wealthy people do not necessarily have low levels of stress and high levels of wellness, but it is important that you are economically secure and can afford at least the basic necessities to survive. It must, however, always be emphasised that this is dependant on the persons social environment, culture and beliefs (Persaud, 2004). For example, it may be the social supports that are the stressors, such as having parents that are HIV positive.

Degges-White et al., conducted a study on headache patients to determine if their levels of stress and wellness were different to those of a normal adult population. It was found that the overall levels of wellness were low and the perceived stress levels were high compared to a norm group of adults. The specific components of wellness did however vary, for example, spirituality was actually higher among the headache population compared to the norm adult group. It is interesting to note that tension-type headaches caused from psychological and physiological stress are most common in people between the ages of 20 and 50 years old. This is relevant as these are generally the ages during which most adults work (the economically active population). It is these people, whom organisations rely on, who are the ones that are suffering. It was found that the primary cause of these headaches was due to psychological and interpersonal factors, both of which affect the total well-being of a person. The conclusive finding of this research was that there was a significant negative correlation between total wellness and perceived stress (Myers et al., 2000, in Degges-White, et al., 2003).

#### 2.4.2 Stress and wellness within organisations

There are those theorists that state that it is important to look at an organisational health framework when studying stress (Hart & Cooper, 2001). The reasoning behind this belief is that this framework then allows for simultaneous focus on employee well-being and organisational performance.

The modern focus within organisations should be on organisational health (Hart & Cooper, 2001). This concept states that the organisation has to approach stress by focusing simultaneously on the employees' well-being and on its bottom-line (the degree to which the organisation is meeting its financial, social and environmental responsibilities) (Cox, 1992; Griffin, Hart & Wilson-Evered, 2000 in Hart & Cooper, 2001). However, to improve its bottom-line, the organisation has to develop ways to reduce occupational stress but at the

same time improve employees' satisfaction and performance (Hart & Cooper, 2001). Thus, organisations need to come to the realisation that having happy and satisfied employees provides no value to the organisation unless the employees are also performing efficiently and productively. They must also come to understand that if the workforce is efficient and productive but this is at the expense of the employees' well-being it is of little value. This is an optimistic picture; as organisations have rarely concentrated on employee well-being in combination with organisational performance.

The number of people who stay away from work owing to stress-related illness is on the increase and this is, therefore, a reason for more organisations to attempt to increase the levels of wellness amongst their employees (Manocha, 2004). Philpott, (as cited in Manocha, 2004) states that organisations are taking the concept of wellness one step further and using it as a recruitment and retention tool. That is, the organisation offers wellness programmes to attract people to the company. The programmes are also used as a method of keeping people at the organisation (Philpott in Manocha, 2004). He states that if people are very stressed as a result of their jobs they are more likely to leave and, therefore, if the company can reduce the stress levels through wellness programmes they have a better chance of getting the employees to stay.

#### 2.4.3 Conclusion

In summary, work is often a huge contributor to stress. However, it is also an important aspect of an employee's level of wellness (Singleton, 1981). Thus, it is important to explore and determine the existence of the relationship between stress and wellness in the workplace.

### **2.5. Stress amongst educators**

Educators are extremely important and necessary as it is they who help people to learn and develop. As with all forms of employment there are stressors which impact on educators. Below is a description of the stressors which are currently affecting educators in South Africa.

#### 2.5.1 Overview of stress amongst educators

Internationally the most common sources of stress for educators, in the tertiary and further education sector, are those of insufficient funding and resources, high work load, poor management, job insecurity and a lack of recognition and reward for their work (Gillespie, Walsh, Winefield et al., 2001 in Winefield, 2002). Other causes of stress include,

overcrowding of classrooms, lack of competencies, and lack of the necessary equipment (Schonfeld, 1992).

#### 2.5.1.1 Study conducted on educators in South Africa

Hall, Altman, Nkomo, Peltzer and Zuma (2005) conducted research for the Education Labour Relations Council (ELRC) of South Africa to determine the levels of attrition amongst educators and the reasons for this. Hall et al., (2005) studied 20 626 educating staff during 2004 focusing on the impact that job satisfaction, morale, workload and HIV/AIDS has on these educators. In the supporting literature for this study it was found that the low levels of job satisfaction and morale were associated with low salaries, lack of recognition of experience, lack of training and resources, and the increased levels of bureaucracy in the Department of Education (DoE) (Sowetan, 2004; Saturday Star, 2004; Cape Argus 2004 as cited in Hall et al.).

The results of this study, to a large degree, support the literature. The main reasons for educators dissatisfaction with the teaching profession were found to be remuneration, challenging working conditions, poor relationships with the education department, a lack of respect for the profession, and stress due to transformation in education (for example the introduction of new curricula) (Hall et al., 2005). In terms of working conditions the increased workload and job overload were ranked as some of the highest reasons for dissatisfaction (Hall et al.).

As a sub study to the one conducted by Hall et al. (2005), 'A study on the Demand and Supply of Educators in South Africa' (2005), it was determined that in public schools, "In the previous 12 months, 10.6% of educators had been hospitalised and 75% reported a visit to a health practitioner in the six months before the study. The most frequently reported diagnoses in the last five years before the study were stress-related illnesses such as high blood pressure (15.6%), stomach ulcers (9.1%) and diabetes (4.5%)." These percentages were obtained from a sample population of 21 358 educators (Study of demand, 2005). One of the biggest factors found to lead to absenteeism was that of job stress. The suggestion, to try and decrease this high incidence of stress, is for the education department to introduce a programme which focuses on helping educators deal with illness (while ensuring confidentiality) (Study of demand, 2005). This programme will include topics such as counselling, assessment, adjustment of workload, blood pressure and diabetes screening and treatment. These

programmes will be situated in offices within geographical areas so that all the schools and education centres in the areas can access them. The main aim of this is to improve quality of life.

A criticism of these programmes is evident with regards to employee's wellness. These programmes do provide a small amount of psychological help; however they focus predominantly on physiological health. This is in contradiction to the concept illustrated in section 2.3 of holistic health (Baltus, 1988; Cohen, 1998). In other words these programmes only focus on a small component of overall wellness. Consequently theorists of wellness such as Cohen (1998) may argue that these programmes will not succeed in promoting and maintaining wellness as they do not focus on all the dimensions of wellness. A further criticism is that there is no mention of the interaction between the dimensions of wellness as the focus in this study is predominantly on physiological health, and does not consider other dimensions of wellness which may impact on physiological wellness. The literature would suggest that there is an interaction of the dimensions of wellness (Degges-White et al., 2003). Thus although an improvement may be made in the physiological dimension which would impact on the other dimensions, if the other dimensions are not also focused on, the help in the physiological dimension may in effect not help at all. For example even if the person is receiving health care they may still be stressed if their problem is a financial one.

Not only has the number of educators leaving the education work field increased but so too has the number of days which they are taking for leave (Study of demand, 2005). Those educators, absent from work for longer than ten days, were absent mainly due to high blood pressure, followed by the effects of smoking, being HIV positive, stomach ulcers and the effects of high levels of alcohol consumption (Study of demand, 2005). Associated with this, and the high levels of absenteeism and presenteeism (when the employee comes to work but is unproductive owing to illness), is the low morale of the educators, their intention to quit teaching as well as high levels of job stress (Study of demand, 2005).

#### 2.5.1.2 A problem in eliminating the stressors

One of the issues in trying to eliminate the causes of stress, within education, is that it is often not up to the educator or the school, but the government (Crute, 2004). For example, the teacher invariably does not have a say in how many students they have in their class or the resources with which the school is provided such as a library. In the private sector, however, the school may choose how many students to enroll (Crute, 2004). The solution for these

educators is that they first deal with those stressors which they can control, such as personal ones, and then learn how to manage the ones which they cannot eliminate (Crute, 2004).

### 2.5.2 Further causes of educator stress

In a study conducted in Zimbabwe the results showed that the areas which caused the highest levels of stress for the educators were those that involved other people (Nhundu, 1998). For example, dealing with a student's parents was listed as the most stressful, second was the overcrowded classes. One of the non-people related stressors was low salaries. Although this study was conducted a number of years ago and in another Southern African country it does provide an indication of the educator stress issue in a non-western, non-first world country. This study also concluded that male educators find this job more stressful than the female educators. Finally, the results of this study indicated that those educators with more experience were found to be less stressed than those who have only worked for a few years.

Another stressor for many educators in South Africa is having to teach in English when English is not their home language (Probyn, 2001). This is not only stressful as they battle to teach in a language that they do not fully understand, but also because they often have to teach students who do not fully understand it either. Although this is no longer enforced, many schools choose to teach their pupils in English as it is the most common language shared when communicating with people around the world (Probyn, 2001).

Unemployment has rather negative affects on an individual's well-being (McKee-Ryan, Song, Wanberg, & Kinicki, 2005). As many of the teaching staff at further education and training colleges are contract staff they are threatened with unemployment every time their contract comes to an end (Study of demand, 2005). This threat in itself could have an affect on the individual's well-being as they may worry about whether or not their contract will be renewed. If it is not, it often results in high levels of stress, owing to the resulting problems, such as financial problems.

### 2.5.3 Conclusion

It is evident that there are a number of problems which result in a stress response amongst educators. Unfortunately many of them are unavoidable and at present it is not possible to eliminate them. It is therefore necessary to determine the current stressors, to resolve those that can be resolved and then to find more adequate ways of dealing with those that cannot.

Without solutions being established more and more educators will inevitably leave the teaching profession.

## **2.6. Critique**

There are a number of criticisms of the research to date on stress and wellness. Several of these criticisms are discussed below.

### **2.6.1 Research on stress**

Evidence suggests that one of the biggest criticisms regarding stress research is that the surveys used generally only measure the power of the concept of stress and not what the people really experience (Newton et al., 1996). That is, it is impossible to measure stress as it is intangible and is only a construct. Also the research is based on what people experience which is unique and therefore it is generally a subjective measure.

In addition there is no clear and consistent definition of stress or the causes of stress. The causes are predominantly based on the way the theorist has defined stress. This leads to inconsistent results being reported in the literature (Baker & Karasek, 1985). This results in the comparison of research and literature proving difficult.

Scully, Kremer, Meade, Graham and Dudgeon (1998) state that one of the limitations of much stress research is that it fails to explain the direction of causality. For example, the literature suggests that there is a link between stress levels and physical exercise (if you exercise and are physically fit then your stress levels are lower), however the debate lends itself to whether the psychological well-being and reduced levels of stress were evident after an exercise regime, during, completely independent of, or before. In addition Scully et al., (1998) state that there is a lack of evidence of the result of exercise addiction and the resulting stress if exercise is stopped.

### **2.6.2 Research on wellness**

‘Lifestyle and health habits appear to be effective in reducing anxiety, depression, and psychosomatic distress but do not necessarily moderate the stressor-strain linkage’ (Cooper & Cartwright, 2001, p239). This statement reflects the argument that even if the person leads a healthy life they may then deal with the stress better, for example they may not get sick from the stressor as easily as someone who is unhealthy. However, by being healthy it does not necessarily mean that the stressor is going to be eliminated. For example, if the stressor is

financial problems and the person does a lot of exercise, they may not have high blood pressure from the stress, but the exercise is not going to reduce the financial problems. This is further illustrated by the discussion earlier in the literature review on the interrelatedness of the dimensions of wellness (Degges-White et al., 2003). This interrelatedness may work both ways. That is, if there is a high level of wellness in one dimension, such as spirituality, but a low level of wellness in another dimension, such as the financial dimension, then the high spirituality may counteract the low financial level. This may be due to the fact that the person has the belief in a greater power that will help them to cope even if they do not have sufficient financial support. However, for another person a low level of wellness in the financial dimension may affect the other dimensions in a negative way and reduce the person's overall level of wellness. The criticism raised is that there is very minimal research on the interrelatedness of the dimensions. Each dimension is usually explained and the level of wellness in each individual dimension is given but not the manner in which they relate to each other or interact. For example, it is not stated in the literature whether there are common patterns, such as generally people who have high physical wellness are also financially well, but all have a low level of spiritual wellness.

#### 2.6.2.1 Wellness programmes.

There has been the critique of companies focusing on an employee's wellness in that it has been found to be considered an infringement of the personal life of the employee by the employer (Manocha, 2004). For example, the employee may feel impinged on if they are taught how to eat better. Also there is little evidence to support the long term effects of these health initiatives by the organisations.

One of the criticisms of wellness programmes is that they are used by companies to try to avoid having to change their policies. For example, instead of the company improving their ergonomics, by, for example, supplying machinery to help the employees lift the heavy items, they have provided safe lifting classes (Rest, 1995). Thus it is placing the burden and responsibility to a large degree on the employee and removing themselves, the organisation, from the responsibility of reducing the stressors. This also lends itself to an ethical consideration. Should the person, such as the nurse, who is responsible for providing these programmes, provide them knowing that the organisation is avoiding their responsibility and that the employee may in fact be harmed if the organisation does not change their ergonomics (Rest, 1995)?

### 2.6.3 Research on the relationship between stress and wellness

Although there is evidence of a relationship between stress and wellness there is still no guarantee that if you have a high level of wellness you will have a low level of stress. This is because if the stressor is not dealt with then the stress will eventually affect the person (Cooper & Cartwright, 2001). Thus it is important that organisations and individuals remember that no matter how much they improve their wellness they have to eliminate the stressor and/or find ways to deal with it so that the effects of wellness can be utilised.

As has been emphasised throughout this review, people are unique and they react very differently to stressors and thus some become stressed when others do not (The complete manual of fitness and well-being, 1990). For example, certain personality and behaviour types have been found to be more prone to stress, such as those who have a low self-esteem. However even within these types differences exist. People's concepts of wellness also differ widely, what one may consider to be healthy may be very different to what another considers healthy. Thus the level of perceived wellness relies heavily on the person's context, culture, their environment and how the person tailors their own wellness (Plaut, Markus & Lachman, 2002).

A further critique is that in general the research in this area has been on stress and the negative effects of it and on how to reduce it. Seldom has the research focused on the promotion of well-being (Conway & MacLeod, 2002). Conway and MacLeod (2002) suggest that well-being and distress should be separated and that there should be a focus on improving the well-being for all and not view it as a luxury that only some can enjoy. Thus professionals, such as psychologists, should focus on not only reducing distress, as this does not necessarily result in a high level of well-being, but also, enhance the level of the clients well-being (MacLeod & Moore, 2000). Furthermore, it has been believed, that by reducing the negative aspects that affect well-being it will automatically improve the positive aspects and increase well-being (MacLeod & Moore, 2000). Evidence is, however, in contradiction to this belief and states that these positives and negatives are in actual fact not on the same dimension (MacLeod & Moore, 2000). Thus, as above, both the positive and negative aspects of well-being should be focused on.

As with much of the present psychological research, the research and literature available on stress and well-being is extremely westernised (Staudinger, Fleeson & Baltes, 1999; Dollard,



2003). This then means that much of what is assumed to constitute wellness and stress is not applicable to the many diverse South African cultures. In South Africa evidence has been found that states that psychological well-being is different between whites and Africans (Wissing & van Eeden, 2002). This well-being is influenced by variables such as age, gender and cultural context (Staudinger et al., 1999; Wissing & van Eeden, 2002). For example within the African culture it may be necessary to have wellness dimensions which focus on ancestors, rituals and dreams. Ultimately, although Seyle's research is a good starting point, and one which was used at the beginning of this literature review, the context and the culture must always be taken into account. The negative effects of stress are a result of the inability of the person to adapt to the stress and not the effects of the stressor itself (Helman, 2001).

#### 2.6.4 Conclusion

This section focused on a number of criticisms leveled against the research on both stress and wellness and furthermore on the relationship between the two. It is inevitable that with any form of research other researchers find reasons to undermine and enhance previous researchers work. It is important to determine these criticisms and take them into account when conducting further research in the same field and thus the necessity for this critical review.

### **2.7 Conclusion**

The researcher illustrated the relationship between stress and wellness, with specific regard to educators, in the literature review. In this illustration it was evident that both stress and wellness are very broad topics and it is impossible to cover their entirety in a review of this nature. It was for this reason that only a brief overview was provided on these constructs.

The focus of the review then attended to the topic of this research by providing an explanation of stress and wellness within the organisation. Furthermore an account of stress amongst educators was also supplied.

To conclude the literature review a section on the criticisms of these fields of research was provided. Again this section is broad as there are many criticisms of these topics and therefore only several were provided. Overall the literature review provides an illustration of the concepts of both stress and wellness and their interrelatedness.

## CHAPTER THREE

### Method

#### 3.1 Design

The aim of this research is to explore the relationship between personal wellness and stress amongst educators. Sivananda College for further education and training was used to explore this relationship. The intention of this research is consequently only to explore the relationship between stress and wellness and to further determine the significance of the principal hypothesis that employees with higher levels of wellness have lower levels of stress.

Within this principal hypothesis further hypotheses were considered:

- The degree of the relationship between stress, wellness and role (educator or administration staff)
- The degree of the relationship between stress, wellness and gender
- The degree of the relationship between stress, wellness and exercise
- The degree of the relationship between stress, wellness and perceived healthy eating
- The degree of the relationship between stress, wellness and perceived overall health

A quantitative research design, using a structured questionnaire (with scale type responses), was employed to determine the stress and wellness levels. Participants were selected using a representative, non-probability sampling strategy (Van Vuuren & Maree, 1999). This sampling strategy implies that the participants for the research were not selected randomly, but were based on convenience and accessibility (Van Vuuren & Maree, 1999). The college employs 149 people in total. Of the 149 employees, 68 are educators and 81 are administration staff. There is a slight discrepancy in the figures as some of the staff perform both roles. The results will be based on what the participants stated their role was on the biographical questionnaire (Appendix C). Logistical reasons limited the sample to 139 (62 educators and 77 administration staff) of the total 149 possible participants. Although 139 participants were requested to contribute to the research only 71 (46 educators and 24 administration staff) completed the questionnaire. Thus 74% of the educators participated in the research while only 31% of the administration staff participated. The low participation result is a concern in terms of the validity of the research and therefore caution must be

exercised in generalising the results. Owing to the large percentage of the educators the results can be generalised to the entire college.

There are two prominent independent variables which may affect this research and will be taken into account in the results and the discussion sections of this project. The first variable is that the educators feel extremely demotivated and therefore were not interested in filling in the questionnaire. This demotivation was expressed to the researcher by the human resource manager who has been working on motivation for over a year with all the employees as well as by the employees themselves. A large majority of the employees were hesitant to complete the questionnaire as they were ‘tired of doing things and not seeing the results benefiting them’. This demotivation is however an unconfirmed report and therefore it can only be regarded as a possible independent variable. The second variable is that of language. Although it was assured that a translator was not necessary the majority of the participants do not have English as their first language as is evident in table 1. These results were obtained using the biographical questionnaire (Appendix C).

LANGUAGE	Zulu		English		Polish		Afrikaans		Xhosa		Hebrew	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>TOTAL</b>	43	60.6	19	26.8	1	1.4	4	5.6	1	1.4	1	1.4

*Two participants did not provide this information*

*Table 1: Breakdown of Sivananda employees by home language*

The participants did however exhibit a good command of the English language. It was nevertheless noted that there was some confusion expressed with regards to the wording of some of the statements within the questionnaires.

The dependant variables of this research are stress and wellness which are represented by scores derived from the questionnaires and one word answers which were then assigned a score. Scores were calculated for each dimension of stress and wellness, measured in the questionnaires. Statistical information will also be provided on the biographical dimensions such as the age and eating habits of the participants (Appendix C). These questions were included to explore if they have any relationship with the stress and wellness levels of the participants. The scores are going to be used to explore the relationship between stress and

wellness for the college as an entirety, for the individual campuses, for males and females and for the administration staff and educators.

The most important ethical consideration in this form of research is anonymity. The college has given permission to use the college name in this report. The individual results will, however, be kept anonymous so there is no way to identify the results of the individual participants. Furthermore, the results will be provided as overall summaries of the various categories. Thus no employee can be implicated for their answers given. The participants were not forced to participate in this research and were therefore asked to sign an informed consent form (Appendix B). This was done after an explanation of the research was provided to the participants as well as an information sheet (Appendix A) to ensure thorough understanding by the participants. At the end of the study all the completed questionnaires will be destroyed.

### **3.2 Description of Sivananda College and the research participants**

Sivananda College is an education centre with five campuses situated in the surrounding areas of Durban, KwaZulu-Natal. The five campuses include, Kwa Mashu, Mpumalanga, Ntuzuma, Pinetown, and Qadi campuses, with their central administration and management office in Westville. Qadi and Mpumalanga campuses only employ four and five people, respectively. Furthermore, they only operate when, and if, they get enough students for them to be economically viable and therefore they were not included in this research. Thus Kwa Mashu, Ntuzuma and Pinetown campus were used as well as the central office to collect the data. All of these campuses are used for further education and training, however Kwa Mashu is slightly different in that it also comprises a high school.

All the employees of the above mentioned campuses were asked to participate in the research which included both the administration staff and the educators. Sivananda employ's 149 staff in total of which 9 participants were not included as they work at Qadi and Mpumalanga campuses. Of these remaining 139 employees 46 educators and 24 administration staff completed the questionnaire, with one participant not completing the 'role' aspect of the questionnaire. The administration staff were included in the research so as to try and determine the wellness and stress levels of the college staff as a whole as well as make a comparison between the two broad staff categories. However, owing to the limited number of the administration staff that completed the questionnaire (31%) these results cannot be

generalised and more focus will be paid to the educators and their results. The staff at Sivananda College are diverse in terms of gender, race, language, culture, age and ethnicity. Below is a table illustrating the break down of staff in terms of race, gender and role for the entire college.

COLLEGE STAFF					
ROLE	RACE	BLACK	COLOURED	ASIAN	WHITE
	GENDER				
ADMINISTRATION STAFF	MALE	31		1	4
	FEMALE	47		2	9
EDUCATORS	MALE	34	2	7	4
	FEMALE	9	1	3	8

*Table 2: Breakdown of Sivananda Employees by role, race and gender*

### **3.3 Measures**

The questionnaire research method was used to collect the data. The questionnaire approach to research involves either constructing a new questionnaire or using a relevant pre-existing questionnaire (Durrheim, 1999). For this research two pre-existing questionnaires – the occupational role questionnaire and the perceived wellness survey (Appendix D and E) – were used as well as a constructed biographical questionnaire (Appendix C). The pre-existing questionnaires were scaled type closed questionnaires. The respondents were provided with rating scales where they had to indicate the degree to which they agreed or disagreed with the statements provided (Durrheim, 1999). The questions were therefore also closed as the respondents were forced to choose an answer out of answers provided (Durrheim, 1999). This type of questioning has the advantage of standardising the answers from all the participants and therefore allows for easier comparative analysis (Durrheim, 1999). The biographical questionnaire, although not forced answers, was still a closed type form of questionnaire as the questions either asked for one word answers or dichotomous answers (yes or no) (Appendix C).

The questionnaire consisted of three sub questionnaires (Appendix C, D and E). These included a biographical questionnaire, the Occupational Stress Inventory (using the occupational role questionnaire of the inventory) and the Perceived Wellness Survey.

The first questionnaire was the biographical questionnaire (Appendix C). This questionnaire was compiled by the researcher to obtain information about the demographics of the participants as well as their basic living patterns related to health. For example, questions were posed regarding whether they smoke and drink, whether they participate in exercise, how often they are absent on average per year, whether they consider their eating patterns to be healthy and whether they consider themselves to be healthy overall. These questions were posed as they may have an influencing factor on the results from the Occupational Stress Inventory and the Perceived Wellness Scale; they may serve to support or refute the results of the other questionnaires. For example, there is a question regarding whether the participant does any form of physical exercise. In addition one of the wellness dimensions considers physical wellness. Therefore these two separate results could be used to determine whether the participants do in fact consider themselves to be physically healthy. People may consider themselves healthy as they rarely visit a doctor and yet they do no form of exercise. With all of these questions the participants had to provide one word answers which were then coded.

The second questionnaire was the Occupational Role Questionnaire which is a sub-questionnaire of the revised edition of the Occupational Stress Inventory (Osipow 1998) (Appendix D). The Occupational Stress Inventory is used for two predominant reasons: (a) to develop measures to determine common occupational stressors which apply across different occupations and environments; and (b) to develop measures which provide a theoretical model integrating stress in the work environment, the psychological strains experienced by individuals as a result of work stressors, and the coping resources to deal with the stressors (Osipow, 1998). Only the Occupational Role Questionnaire was used as the research is intended to focus on whether it is aspects of the employee's roles that could be possible stressors. This dimension of stress was considered important as only recently have the employees job descriptions and roles been clearly defined (the human resource manager stated this). In addition the Human Resource Manager also stated that the employees are often expected to perform tasks out of the boundaries which they deem as reasonable. Scores on the Occupational Role Questionnaire are measured using six scales which include role overload, role insufficiency, role ambiguity, role boundary, responsibility, and physical environment

(Osipow, 1998). These six scales were chosen as they are reported to be the more common causes of stress within employees work roles (Osipow, 1998). However a word of caution is necessary as stress is a highly complex multifaceted construct and therefore this questionnaire only considers one small aspect of work related stress.

The reliability statistic for the Occupational Stress Inventory (occupational role questionnaire) was determined using test-retest reliability and was found to be .61 ( $p < .01$ ) and thus was found to be significant (Lombard, 1997 in Osipow, 1998). The validity statistic was determined through 5 main sources and was also found to be significant at .82 ( $p < .01$ ) (Osipow, 1998).

The third questionnaire was the Perceived Wellness Survey (Adams, Bezner, Garner, Woodruff, 1998) (Appendix E). This survey is “a salutogenically-oriented, multidimensional measure of perceived wellness perceptions in the physical, spiritual, psychological, social, emotional and intellectual dimensions” (Adams et al., 1998:212). The researcher also included a financial dimension which had previously been added by a fellow colleague. The essential inclusion of this dimension can be highlighted by a recent study conducted by the Education and Labour Relations Council of South Africa (Hall, Altman, Nkomo, Peltzer & Zuma, 2005). This study researched the potential factors of attrition in education. The reason rated as the highest for educator attrition and a change to alternative employment was that of wanting a ‘better salary’ (52.3% out of 24 000 educators listed a better salary as a reason for leaving the education sector) (Hall et al., 2005). However, the educators were not actually leaving their positions owing to other opportunities of employment being limited (Hall et al.). Furthermore, three-quarters of the participants stated that they were dissatisfied with the size of their remuneration package (Hall et al.). Therefore the researcher found it important to explore whether the financial situation also had an effect on the employees wellness level as it seems to affect other areas of their lives.

Each of the seven dimensions – psychological, emotional, social, physical, spiritual, intellectual and financial wellness – are represented by six items which are scored from 1, ‘very strongly disagree’ to 6, ‘very strongly agree’. Each individual dimensional score was entered into SPSS for each participant.

The reliability statistics for the Perceived Wellness Survey were determined using four separate samples and internal consistency was found. The reliability statistics ranged from .88

to .93 ( $p=.05$ ) and thus were found to be significant (Adams et al.). The face validity ( $n=36$ ) was also found to be significant ( $p=.05$ ) (Adams et al., 1998). Although significant the face validity score is relatively low and therefore this questionnaire is used with caution.

The results of this research will be delineated for all the participants as employees of Sivananda as well as comparisons will be made between the total educators and administration staff and comparisons between the educators of the different campuses. These comparisons will be made on the basis of gender, exercise, healthy eating and overall health.

A final word of caution is necessary. Both the Occupational Role Questionnaire and Perceived Wellness Scale were normed on non South African populations. Therefore this will be taken into account when analysing the results. Nevertheless there is research in South Africa to suggest that the educator's role is an important cause of stress especially the dimension of role overload (Hall et al., 2005).

### **3.4 Procedure**

Arrangements were made by the Human Resource Manager of Sivananda College for the researcher to go to the various campuses on a number of different occasions to collect the data. The completion of the questionnaires was done individually by the participants themselves in a group situation except for the staff at the central office. The participants were allowed an hour to complete the questionnaires however the majority of the participants took between 30 and 40 minutes to complete them. The participants were also asked to read the information sheet provided as well as sign the consent form (Appendix A and B). The information sheet was explained to the participants so that they had a thorough understanding of the research and to ensure that they understood that their participation was voluntary and more importantly that their results would be confidential.

The procedure at the central office was slightly different as it was impossible, owing to the staff's schedules, to get all the employees together to complete the questionnaire and therefore the questionnaire was explained to each employee individually. They were then provided with 2 weeks in which to complete the questionnaire. Problems were encountered at all of the data collection points as people forgot to come to the meetings or on arrival the relevant person(s) had not notified the staff. Therefore the data collection became extremely time-consuming as repeated visits to the various campuses had to be undertaken. Furthermore those employees



who did attend were, for the most part, reluctant to complete the questionnaires as it was time-consuming and they felt that it would be of no benefit to them.

In total 71 employees completed the questionnaires. The results were then computed and scored and entered into SPSS. Certain statistical or data analysis procedures were then used to determine the necessary results, such as frequencies, descriptives, correlations and factor analyses. Frequencies were used to determine how many participants there were in certain categories or how many chose a certain dichotomous answer. The descriptive analyses were run to describe the data. To establish whether there was any relationship between the dimensions of stress and wellness bivariate correlations were run. Finally a factor analysis was used to reduce the data by identifying any smaller related factors within the stress and wellness constructs.

## CHAPTER FOUR

### Results

#### 4.1 Introduction

The results inform the aim of the project which is to determine whether there is a relationship between stress and wellness. Statistics generated to explore this relationship include frequencies, descriptives, correlations and factor analysis. Frequencies were used to determine how many participants there were in certain categories or how many chose a certain dichotomous answer (Durrheim, 1999). The descriptive analyses were run to describe the data by investigating the range of scores and to compare the means for the stress and wellness dimensions (Durrheim, 1999). To establish whether there was any relationship between the dimensions of stress and wellness, bivariate correlations were run. A bivariate correlation is where each selected dimension is paired with each other selected dimension to determine how closely they are related (either positively or negatively correlated) (Howell, 2002). This is also used to determine the relationship of the dimensions within the stress and wellness constructs. Finally factor analysis was used to reduce the data by identifying whether or not there were any smaller related factors within the stress and wellness constructs (this was only conducted for the results of the college as a whole). In other words it is used to see if the dimensions of stress and wellness could be reduced into more meaningful representations through determining any underlying dimensions (Tredoux & Pretorius, 1999).

These statistical procedures will be applied to the college as a whole as well as to the different campuses to allow for comparisons to be made. Furthermore comparisons will also be made based on role, gender, exercise, and the perceptions of healthy eating and overall health.

Owing to the small sample it was not statistically possible to conduct all the above analyses on all the groups. Furthermore, as requested by Sivananda, anonymity is extremely important and therefore only limited results can be provided if the groups are small as this may allow for identification.

All the statistics were generated using SPSS. The results will be displayed in the form of tables and graphs, accompanied by an explanation of the relevant information in each table and graph. The statistics will first be provided for the college as whole and then various

comparisons will be made. The results only will be provided in this section. For an explanation of the findings please refer to the discussion section (Chapter five). A key explaining the various labels and abbreviations can be found in Appendix F.

#### **4.2 Sivananda FET College**

To gain an understanding of certain participant characteristics a table was compiled (Table 3) from frequencies generated in SPSS. These characteristics were chosen based on them being the areas which are going to be considered throughout the results and discussion section. Information for this table was obtained by running frequency statistics in SPSS on the participants as a whole.

	Role		Gender		Exercise		Healthy eating		Overall health	
	Educator	Admin	Female	Male	Yes	No	Yes	No	Yes	No
<b>Number</b>	46	24	37	30	36	33	52	15	60	9
<b>%</b>	64.8	33.8	52.1	42.3	50.7	46.5	73.2	22.4	84.5	12.7
<b>Missing</b>	1		4		2		4		2	

*Table 3: Summary table of frequencies for Sivananda FET College*

From this table it is evident that more educators (64.8%) participated in the research than administrative staff (33.8%). Although more females (52.1%) participated than males (42.3%) there is not a large difference between these two groups in terms of participation. The participants predominantly stated that they had healthy eating habits (73.2%) and that they considered themselves to be generally healthy (84.5%).

An analysis was then run to determine some of the descriptive statistics for the participants from Sivananda FET College. Table 4 delineates the descriptive statistics selected on the basis of relevance to this study. Firstly, from this table, it is evident that there is a large range in age of this research population. The age ranges from 19 to 65 years old, with a mean of 41.28. The next area of importance is that this population is on average only absent for three days per year (mean = 3.36). This is not an extremely high level of absenteeism, however, it must be noted that the absenteeism was self-reported and therefore there is no proof of honesty of the result.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	69	19	65	41.28	11.183
Mean days absent per year	61	0	28	3.36	4.147
Role overload	71	33	81	55.35	12.486
Role insufficiency	71	34	76	52.80	7.797
Role ambiguity	71	39	79	55.62	7.691
Role boundary	71	5	91	53.13	12.720
Responsibility	71	32	82	51.96	11.611
Physical environment	70	38	72	49.66	9.402
Psychological wellness	69	14	28	21.49	3.095
Emotional wellness	69	8	30	22.10	4.561
Social wellness	69	16	29	23.03	3.658
Physical wellness	69	13	30	22.70	4.244
Spiritual wellness	69	14	30	23.45	4.002
Intellectual wellness	69	16	30	22.00	2.839
Financial wellness	69	8	24	17.43	3.398
Valid N (listwise)	59				

*Table 4: Descriptive statistics for Sivananda FET College*

The areas of most importance with regard to the descriptives are the stress related factors (role overload, role insufficiency, role ambiguity, role boundary, responsibility and physical environment) and the wellness related factors (psychological, emotional, social, physical, spiritual, intellectual and financial wellness). The stress and wellness factors have been transferred to line graphs for easier depiction (Figure 4 & Figure 5). It can be determined from Figure 4 (and table 4) that the highest causing stress factor for Sivananda employees as a whole is role ambiguity (mean = 55.62) with the physical environment causing the least amount of stress (mean = 49.66). However, all the scores are within the range of 40T to 59T, (these are the normative T-scores) which Osipow (1998:8) contends is within one standard deviation of the mean of the normative sample. Therefore these scores should be interpreted as being within the normal range for occupational stress and psychological strain. It must however be noted that these normative scores were based on an American sample, albeit a diverse sample, in terms of gender and race (Osipow, 1998).

At this juncture it is important to state that where the researcher refers to ‘normal’ levels of stress it is with regard to the specific questions included in the occupational role questionnaire. Stress is however a perception and therefore what one person perceives as stressful in terms of these questions another may not. Thus in reality a person may be stressed and the results of

this questionnaire may not identify this construct within the person. This is because 'normal' is unique to an individual and depends on the individual's understanding of stress and their social determination of what is normal.

With regard to the wellness dimensions the highest mean level of wellness for the research sample is spiritual wellness (mean = 23.45) while the lowest level of wellness is financial wellness (mean = 17.43) (Table 4, Figure 5). Considering that the highest possible score for any dimension could be 30 (there were 6 questions for each dimension and the highest option was rated at 5) and the lowest possible score could be 6, all the wellness dimensions, except for financial wellness, are above 70% of the total. Therefore this table would suggest that the staff at Sivananda College have normal levels of work role related stress while having relatively high levels of wellness.

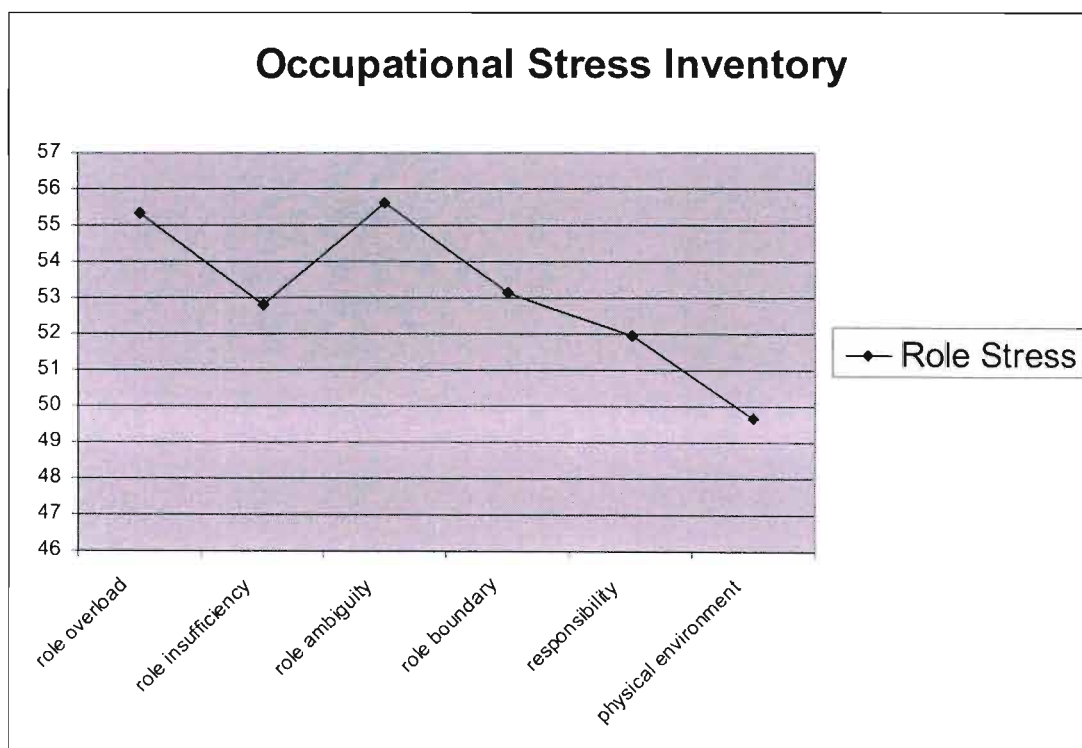


Figure 4: Line graph depicting the mean stress scores for Sivananda FET College

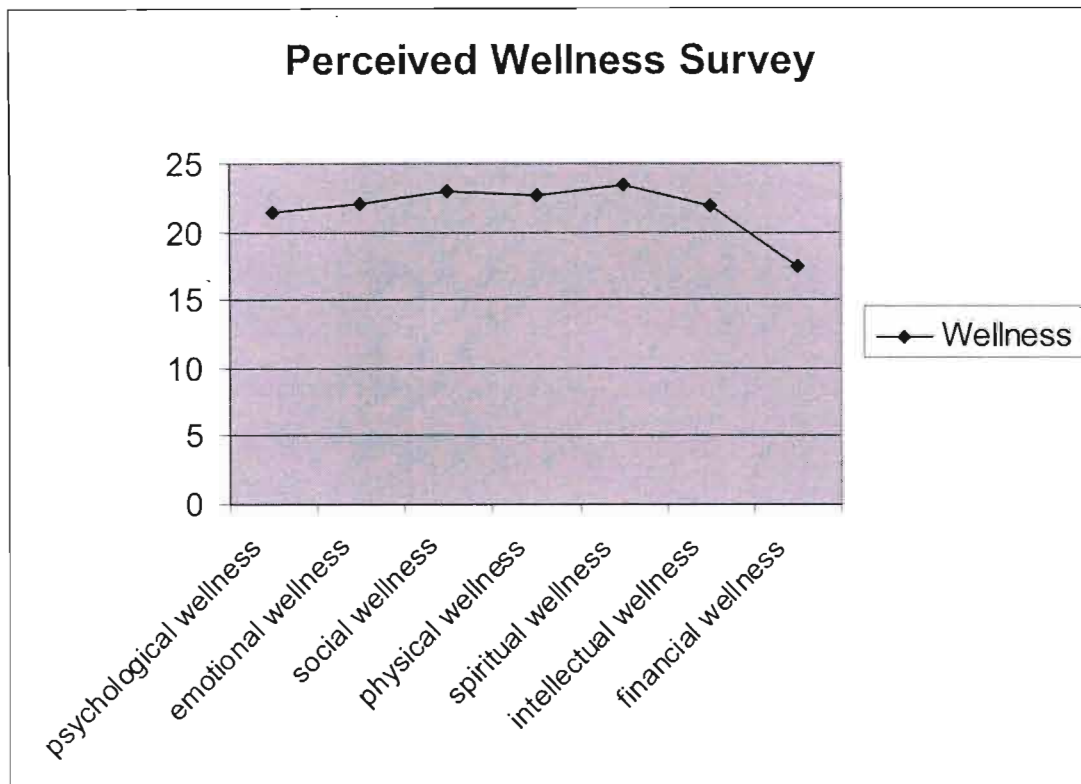


Figure 5: Line graph depicting the mean wellness scores for Sivananda FET College

The histogram below illustrates the distribution of the type of exercise which the employees participate in (Figure 6). Table 3 portrays that 36 participants stated that they are involved in some form of exercise and of these 36, 13 of the participants go to gym. Gym included weight training and any form of aerobics. As this was the most common form of exercise a line graph showing number of minutes per week the participants spent at gym is provided (Figure 7). This is however, self-reported and therefore there is no proof that these participants actually attend gym for this amount of time. The second most common form of exercise was walking and the third was running.

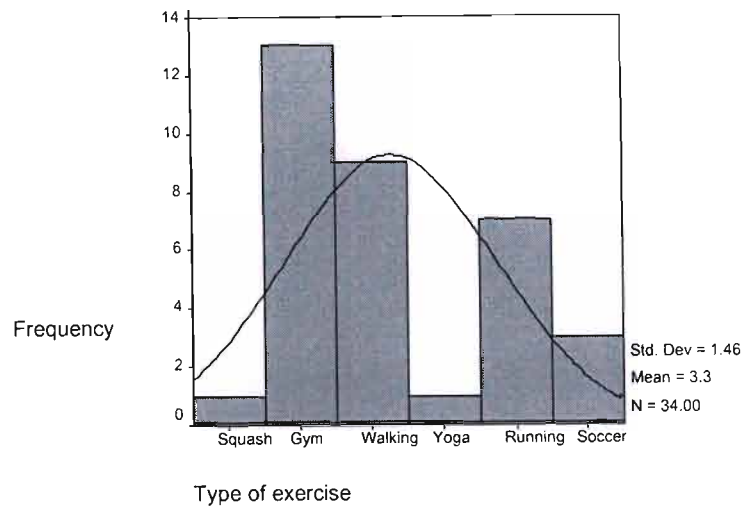


Figure 6: Histogram showing the different forms of exercise

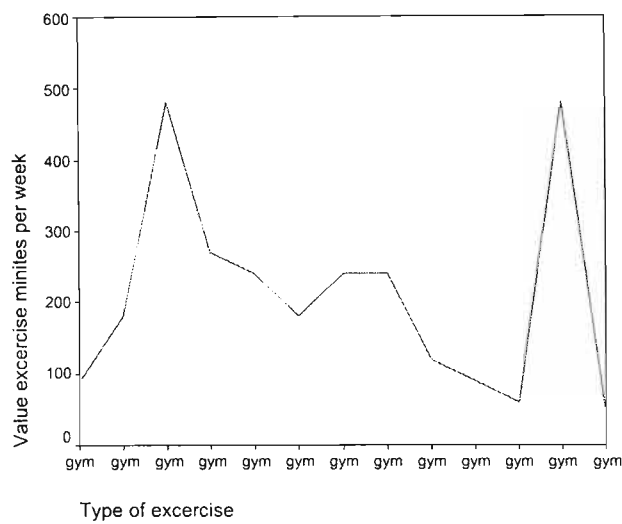


Figure 7: Line graph showing the amount of time the participant's gym per week (in minutes)

A bivariate correlation was run to determine the degree to which the dimensions of stress correlate with each other, the degree to which the dimensions of wellness correlate with each other and the degree to which the dimensions of stress correlate with the dimensions of wellness (Table 5).

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.020	.121	.323**	.556**	.319**	.019	-.033	.061	.054	.118	.035	-.021
	Sig. (2-tailed)		.869	.314	.006	.000	.007	.878	.787	.620	.658	.332	.773	.865
	N	71	71	71	71	71	70	69	69	69	69	69	69	69
role insufficiency	Pearson Correlation	.020	1	.170	.421**	-.041	.183	-.273*	-.219	-.244*	-.189	-.359**	-.136	-.073
	Sig. (2-tailed)	.869		.156	.000	.732	.130	.023	.071	.044	.120	.002	.265	.554
	N	71	71	71	71	71	70	69	69	69	69	69	69	69
role ambiguity	Pearson Correlation	.121	.170	1	.304*	.042	.314**	-.112	-.143	-.189	-.174	-.103	-.101	.065
	Sig. (2-tailed)	.314	.156		.010	.727	.008	.358	.240	.121	.153	.398	.407	.597
	N	71	71	71	71	71	70	69	69	69	69	69	69	69
role boundary	Pearson Correlation	.323**	.421**	.304*	1	.477**	.455**	-.099	-.185	.026	.015	-.059	-.015	.004
	Sig. (2-tailed)	.006	.000	.010		.000	.000	.420	.127	.832	.901	.633	.906	.973
	N	71	71	71	71	71	70	69	69	69	69	69	69	69
responsibility	Pearson Correlation	.556**	-.041	.042	.477**	1	.327**	-.113	-.008	.162	.067	.103	-.014	.021
	Sig. (2-tailed)	.000	.732	.727	.000		.006	.356	.949	.184	.583	.398	.909	.862
	N	71	71	71	71	71	70	69	69	69	69	69	69	69
physical environment	Pearson Correlation	.319**	.183	.314**	.455**	.327**	1	.062	-.116	-.080	.016	-.037	-.020	.189
	Sig. (2-tailed)	.007	.130	.008	.000	.006		.616	.347	.518	.896	.767	.870	.123
	N	70	70	70	70	70	70	68	68	68	68	68	68	68
psychological wellness	Pearson Correlation	.019	-.273*	-.112	-.099	-.113	.062	1	.538**	.530**	.314**	.582**	.417**	-.156
	Sig. (2-tailed)	.878	.023	.358	.420	.356	.616		.000	.000	.009	.000	.000	.200
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
emotional wellness	Pearson Correlation	-.033	-.219	-.143	-.185	-.008	-.116	.538**	1	.537**	.304*	.615**	.427**	-.185
	Sig. (2-tailed)	.787	.071	.240	.127	.949	.347	.000		.000	.011	.000	.000	.128
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
social wellness	Pearson Correlation	.061	-.244*	-.189	.026	.162	-.080	.530**	.537**	1	.433**	.633**	.489**	-.129
	Sig. (2-tailed)	.620	.044	.121	.832	.184	.518	.000	.000		.000	.000	.000	.291
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
physical wellness	Pearson Correlation	.054	-.189	-.174	.015	.067	.016	.314**	.304*	.433**	1	.394**	.283*	.016
	Sig. (2-tailed)	.658	.120	.153	.901	.583	.896	.009	.011	.000		.001	.018	.893
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
spiritual wellness	Pearson Correlation	.118	-.359**	-.103	-.059	.103	-.037	.582**	.615**	.633**	.394**	1	.480**	-.022
	Sig. (2-tailed)	.332	.002	.398	.633	.398	.767	.000	.000	.000	.001		.000	.857
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
intellectual wellness	Pearson Correlation	.035	-.136	-.101	-.015	-.014	-.020	.417**	.427**	.489**	.283*	.480**	1	-.076
	Sig. (2-tailed)	.773	.265	.407	.906	.909	.870	.000	.000	.000	.018	.000		.534
	N	69	69	69	69	69	68	69	69	69	69	69	69	69
financial wellness	Pearson Correlation	-.021	-.073	.065	.004	.021	.189	-.156	-.185	-.129	.016	-.022	-.076	1
	Sig. (2-tailed)	.865	.554	.597	.973	.862	.123	.200	.128	.291	.893	.857	.534	
	N	69	69	69	69	69	68	69	69	69	69	69	69	69

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 5: Bivariate correlation for Sivananda FET College



With regard to the dimensions of stress, the result exhibits a positive correlation of .323 between role overload and role boundary at the 99% level of significance. Thus as stress, as a consequence of role boundary, increases or decreases so too do the other correlated dimensions. Furthermore the result displays a positive correlation of .421, between role insufficiency and role boundary at the 99% level of significance; a positive correlation of .304 between role ambiguity and role boundary at the 95% level of significance; and a positive correlation of .319 between role overload and the physical environment at the 99% significance level. Role boundary is significantly correlated (.477) with responsibility and the physical environment (.455) at the 99% level of significance. Finally responsibility is positively correlated (.327) with the physical environment at the 99% significance level.

Where the wellness dimensions are concerned there are also a number of significant correlations. Each dimension of wellness is significantly correlated with all the other dimensions of wellness, except for financial wellness where there is no correlation with any of the other dimensions (Table 5).

When correlating the stress and wellness dimensions there is a significant result between role insufficiency which is negatively correlated with psychological wellness (-.273) and social wellness (-.244) at the 95% level of significance, while it is negatively correlated with spiritual wellness (-.359) at the 99% level of significance. Thus as the stress levels rise in the dimensions mentioned, there is a drop in the correlated wellness dimensions. This relationship can also work in reverse. This highlights that there is a degree of truth to the principle hypothesis that there is a relationship between stress and wellness.

A factor analysis was run on the dimensions for stress and wellness to determine if there were any underlying factors within the dimensions. Four factors explained 64% of the variance (Table 6). A varimax rotation was performed and again 64% of the variance was explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.629	27.914	27.914	3.629	27.914	27.914	3.444	26.493	26.493
2	2.433	18.715	46.629	2.433	18.715	46.629	1.960	15.078	41.571
3	1.217	9.359	55.987	1.217	9.359	55.987	1.838	14.141	55.712
4	1.122	8.627	64.614	1.122	8.627	64.614	1.157	8.903	64.614
5	.906	6.968	71.583						
6	.688	5.294	76.877						
7	.655	5.040	81.917						
8	.588	4.525	86.443						
9	.508	3.907	90.350						
10	.439	3.374	93.724						
11	.324	2.491	96.215						
12	.284	2.184	98.399						
13	.208	1.601	100.000						

Extraction Method: Principal Component Analysis.

*Table 6: Total variance for the participants overall*

Factor 1 (Table 7) for the normal factor analysis, can be termed the wellness factor as this factor is composed of 6 of the 7 wellness dimensions: namely, psychological, emotional, social, physical, spiritual and intellectual wellness. Factor 2 can be termed the stress factor as this factor is composed of 4 of the 6 stress dimensions: namely, role overload, role boundary, responsibility and physical environment. The third factor is termed the stress role insufficiency factor as the only significant dimension is role insufficiency. Role insufficiency, as a single dimension, constitutes 9% of the total variance (Table 7). The final factor found to be significant is termed financial wellness which constitutes just over 8.5% of the total variance (Table 7).

	Component			
	1	2	3	4
role overload	.006	.699	-.329	-.245
role insufficiency	-.484	.261	.593	-.118
role ambiguity	-.313	.341	.380	.414
role boundary	-.236	.779	.257	-.069
responsibility	-.035	.750	-.413	-.320
physical environment	-.184	.672	.077	.394
psychological wellness	.745	.076	.224	.157
emotional wellness	.767	.008	.190	-.030
social wellness	.793	.213	.045	-.078
physical wellness	.554	.166	-.131	.099
spiritual wellness	.830	.195	-.036	.118
intellectual wellness	.642	.135	.227	.090
financial wellness	-.166	.058	-.461	.742

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

*Table 7: Component matrix of the stress and wellness dimensions for all the participants*

A varimax rotation was then performed to determine, if by viewing the data from another angle, the same factors would emerge (Table 8). The only factor to make a significant change is factor three as it now incorporates 4 of the 6 dimensions of stress. Although there is some change when a varimax rotation is used, the most important aspect to note is that there is a dominant stress dimension and a dominant wellness dimension. This highlights the validity within these individual tests as the majority of the dimensions for stress are correlated with each other and so too are the dimensions for wellness.

	Component			
	1	2	3	4
role overload	.056	.803	.093	.020
role insufficiency	-.317	-.023	.623	-.421
role ambiguity	-.096	-.066	.706	.132
role boundary	-.026	.523	.656	-.172
responsibility	.002	.913	.051	.011
physical environment	.037	.346	.659	.302
psychological wellness	.787	-.124	.019	-.019
emotional wellness	.760	-.091	-.127	-.153
social wellness	.794	.159	-.128	-.100
physical wellness	.552	.144	-.116	.149
spiritual wellness	.840	.106	-.118	.104
intellectual wellness	.692	-.051	.058	-.071
financial wellness	-.118	-.014	.107	.877

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 5 iterations.

Table 8: Rotated component matrix of the stress and wellness dimensions for all participants

The factors can be graphically illustrated using a scree plot (Figure 8). The four factors, the most important factors, are those that are found on the more vertical part of the line, before it straightens horizontally and tapers off.

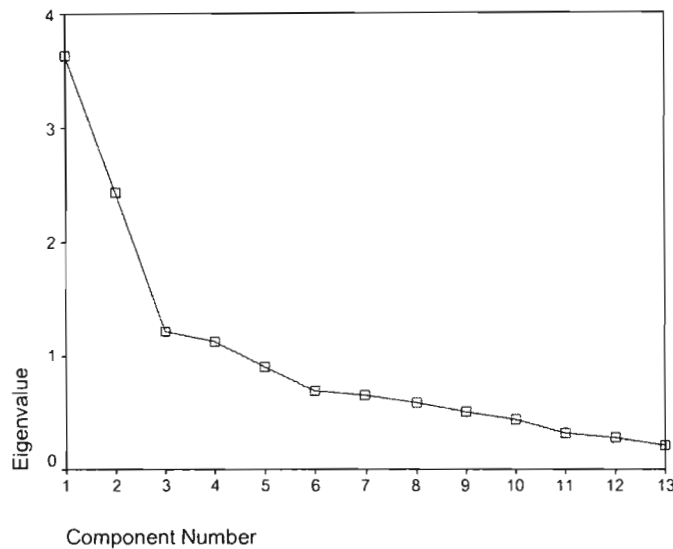


Figure 8: Scree plot for all of the participants

The data analysis now focuses on the College as a whole; however with each set of statistics some dimension is changed to see the effect. Descriptive statistics and bivariate correlations are used to show these effects. The descriptive statistics were derived using SPSS but for

comparison purposes the figures have been entered into a comparison table. This enables the reader to compare the results for the various groups in one concise table.

4.2.1 Comparison of employees who participate in exercise and those who do not

Table 9 provides the descriptive statistics for comparison between those employees who participate in some form of exercise and those employees who do not. For both the participants and non-participants in exercise, the stress scores fall within the normal range of between 40T and 59T (Osipow, 1998). Nevertheless the highest stress score for those employees who exercise is role ambiguity (mean = 55.67) and for those that do not exercise the stress score is highest for role overload (mean = 57.91). There is not much difference in the scores for these two groups as neither group scores consistently higher or lower than the other group with regard to the stress dimensions (Table 9). Nevertheless there is an indication that those employees who do participate in exercise may be slightly less stressed than those who do not. This lends itself to the hypothesis that there is a relationship between stress levels and exercise participation.

<b>DIMENSIONS</b>	<b>EXERCISE (mean)</b>	<b>DO NOT EXERCISE (mean)</b>
<b>ROLE OVERLOAD</b>	52.17	57.91
<b>ROLE INSUFFICIENCY</b>	53.28	52.09
<b>ROLE AMBIGUITY</b>	55.67	55.70
<b>ROLE BOUNDARY</b>	51.92	53.30
<b>RESPONSIBILITY</b>	49.33	53.67
<b>PHYSICAL ENVIRONMENT</b>	50.14	48.81
<b>PSYCHOLOGICAL WELLNESS</b>	22.15	20.76
<b>EMOTIONAL WELLNESS</b>	23.21	20.88
<b>SOCIAL WELLNESS</b>	23.26	22.52
<b>PHYSICAL WELLNESS</b>	23.35	21.70
<b>SPIRITUAL WELLNESS</b>	23.56	23.36
<b>INTELLECTUAL WELLNESS</b>	22.15	21.76
<b>FINANCIAL WELLNESS</b>	16.47	18.61

*Table 9: Descriptive statistics for exercise participation*

With regard to comparisons in the wellness dimensions it is important to note that all of the wellness dimensions, save the financial dimension, are lower for those employees who do not participate in any form of exercise (Table 9). This is when compared with those employees who do participate in exercise (Table 9). For both groups spiritual wellness is considered the highest level of wellness (mean = 23.56 and mean = 23.36, respectively). These results support the hypothesis that there is a relationship between exercise participation and level of wellness.

The bivariate correlation for stress for those employees who exercise, exhibits a positive correlation result of .496 between role overload and responsibility at the 99% level of significance, a positive correlation result of .410 between role insufficiency and role boundary at the 95% level of significance, a positive correlation result of .446 between role boundary and responsibility at the 99% level of significance, and a positive correlation of .339 between responsibility and the physical environment at the 95% level of significance (Table 10). Thus there is evidence of there being interdependency between many of the dimensions of stress.

Psychological wellness and emotional wellness correlate positively with all the other dimensions of wellness except for physical and financial wellness (Table 10). Social wellness correlates with all the other dimensions except for financial wellness, physical wellness only correlates significantly with social and spiritual wellness and spiritual wellness does not correlate with financial wellness (Table 10).

When viewing the correlations between stress and wellness for those employees who do participate in exercise it is evident that role insufficiency is negatively correlated (-.455) with spiritual wellness at the 99% level of significance (Table 10). Thus those employees who do some form of exercise and who have a high level of stress from role insufficiency also have a low level of spiritual wellness or vice versa. In addition those employees who exercise and have a high level of stress from responsibility also have a low level of psychological wellness or those employees who have a high level of psychological wellness have a low level of stress with regards to responsibility as the result is -.348 at the 95% level of significance (Table 10). These correlations highlight the hypothesis that there is relationship between those participants who exercise and those that do not and their stress and wellness levels in certain dimensions.

The focus now turns to the correlations for those employees who do not participate in exercise with regards to stress (Table 11). Role overload correlates positively with role boundary, responsibility and the physical environment. Role insufficiency positively correlates with role ambiguity and role boundary. Role ambiguity correlates with role boundary and the physical environment and role boundary correlates with responsibility and the physical environment.

For the wellness dimensions psychological wellness positively correlates with emotional, social and spiritual wellness (Table 11), emotional wellness positively correlates with social spiritual and intellectual wellness, social wellness correlates positively with spiritual and intellectual wellness, physical wellness correlates with spiritual wellness and spiritual wellness correlates positively with intellectual wellness. Financial wellness does not correlate with any of the other wellness dimensions.

The correlation between the stress and wellness dimensions for those employees who do not participate in any form of exercise, reveals that those employees who have a high level of stress as a result of role overload also have a high level of spiritual wellness as there is a positive correlation result of .398 at the 95% level of significance (Table 11). Furthermore those employees who do not exercise and who have a high level of stress as a result of role ambiguity also have a low level of social wellness with a result of -.441 at the 95% level of significance or in reverse, a high level of social wellness and a low level of stress from role ambiguity. The final correlation, for those employees who do not exercise, is between the physical environment and emotional wellness with a significant negative result of -.362 at the 95% level of significance.

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.163	.085	.279	.496**	.278	-.038	.010	-.005	.059	-.089	-.079	.116
	Sig. (2-tailed)	.	.341	.622	.100	.002	.100	.832	.956	.980	.739	.618	.656	.515
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
role insufficiency	Pearson Correlation	.163	1	-.062	.410*	-.045	.049	-.287	-.307	-.335	-.121	-.455**	-.183	-.009
	Sig. (2-tailed)	.341	.	.720	.013	.793	.778	.100	.077	.053	.494	.007	.299	.960
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
role ambiguity	Pearson Correlation	.085	-.062	1	.275	.027	.258	.001	-.098	.068	-.093	-.008	.022	.128
	Sig. (2-tailed)	.622	.720	.	.105	.874	.128	.997	.582	.701	.601	.966	.901	.471
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
role boundary	Pearson Correlation	.279	.410*	.275	1	.446**	.433**	-.107	-.325	-.040	-.041	-.210	-.078	.061
	Sig. (2-tailed)	.100	.013	.105	.	.006	.008	.547	.061	.822	.817	.233	.659	.732
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
responsibility	Pearson Correlation	.496**	-.045	.027	.446**	1	.339*	-.348*	-.201	-.083	-.072	-.093	-.335	.101
	Sig. (2-tailed)	.002	.793	.874	.006	.	.043	.043	.253	.640	.686	.602	.053	.570
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
physical environment	Pearson Correlation	.278	.049	.258	.433**	.339*	1	.146	-.024	.046	.106	.000	-.008	.443**
	Sig. (2-tailed)	.100	.778	.128	.008	.043	.	.411	.893	.794	.550	.999	.962	.009
	N	36	36	36	36	36	36	34	34	34	34	34	34	34
psychological wellness	Pearson Correlation	-.038	-.287	.001	-.107	-.348*	.146	1	.619**	.578**	.199	.597**	.492**	-.078
	Sig. (2-tailed)	.832	.100	.997	.547	.043	.411	.	.000	.000	.260	.000	.003	.662
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
emotional wellness	Pearson Correlation	.010	-.307	-.098	-.325	-.201	-.024	.619**	1	.451**	.287	.603**	.444**	-.194
	Sig. (2-tailed)	.956	.077	.582	.061	.253	.893	.000	.	.007	.100	.000	.009	.272
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
social wellness	Pearson Correlation	-.005	-.335	.068	-.040	-.083	.046	.578**	.451**	1	.487**	.620**	.434*	-.152
	Sig. (2-tailed)	.980	.053	.701	.822	.640	.794	.000	.007	.	.003	.000	.010	.392
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
physical wellness	Pearson Correlation	.059	-.121	-.093	-.041	-.072	.106	.199	.287	.487**	1	.433*	.307	.087
	Sig. (2-tailed)	.739	.494	.601	.817	.686	.550	.260	.100	.003	.	.010	.077	.626
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
spiritual wellness	Pearson Correlation	-.089	-.455**	-.008	-.210	-.093	.000	.597**	.603**	.620**	.433*	1	.488**	.042
	Sig. (2-tailed)	.618	.007	.966	.233	.602	.999	.000	.000	.000	.010	.	.003	.815
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
intellectual wellness	Pearson Correlation	-.079	-.183	.022	-.078	-.335	-.008	.492**	.444**	.434*	.307	.488**	1	-.081
	Sig. (2-tailed)	.656	.299	.901	.659	.053	.962	.003	.009	.010	.077	.003	.	.648
	N	34	34	34	34	34	34	34	34	34	34	34	34	34
financial wellness	Pearson Correlation	.116	-.009	.128	.061	.101	.443**	-.078	-.194	-.152	.087	.042	-.081	1
	Sig. (2-tailed)	.515	.960	.471	.732	.570	.009	.662	.272	.392	.626	.815	.648	.
	N	34	34	34	34	34	34	34	34	34	34	34	34	34

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 10: Bivariate correlation for those participants who exercise



		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	-.112	-.109	.368*	.554**	.504**	.138	.050	.065	.033	.308*	.136	-.179
	Sig. (2-tailed)	.	.535	.266	.035	.001	.003	.443	.782	.720	.857	.022	.451	.319
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
role insufficiency	Pearson Correlation	-.112	1	-.432*	-.459**	-.055	.319	-.311	-.188	-.228	-.315	-.274	-.118	-.086
	Sig. (2-tailed)	.535	.	.012	.007	.762	.076	.078	.294	.202	.074	.122	.520	.833
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
role ambiguity	Pearson Correlation	.199	-.432*	1	-.414*	.094	-.427*	-.250	-.212	-.441*	-.263	-.223	-.258	.005
	Sig. (2-tailed)	.266	.012	.	.017	.602	.015	.160	.236	.010	.139	.212	.147	.977
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
role boundary	Pearson Correlation	.368*	-.459**	-.414*	1	-.422*	-.422*	-.084	-.101	.017	.006	.115	.058	-.100
	Sig. (2-tailed)	.035	.007	.017	.	.014	.016	.642	.575	.925	.975	.523	.750	.579
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
responsibility	Pearson Correlation	.554**	-.055	.094	-.422*	1	.335	.126	.222	.301	.142	.320	.290	-.084
	Sig. (2-tailed)	.001	.762	.602	.014	.	.061	.486	.214	.089	.429	.069	.102	.643
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
physical environment	Pearson Correlation	.504**	.319	-.427*	-.422*	.335	1	-.032	-.382*	-.237	-.113	-.107	-.019	-.064
	Sig. (2-tailed)	.003	.076	.016	.016	.061	.	.861	.042	.191	.538	.560	.919	.728
	N	32	32	32	32	32	32	32	32	32	32	32	32	32
psychological wellness	Pearson Correlation	.138	-.311	-.250	-.084	.126	-.032	1	.416*	.473**	.342	.603**	.308	-.057
	Sig. (2-tailed)	.443	.078	.160	.642	.486	.801	.	.016	.005	.052	.000	.081	.752
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
emotional wellness	Pearson Correlation	.050	-.188	-.212	-.101	.222	-.382*	.416*	1	.641**	.263	.665**	.423*	-.074
	Sig. (2-tailed)	.782	.294	.236	.575	.214	.042	.016	.	.000	.140	.000	.014	.682
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
social wellness	Pearson Correlation	.085	-.228	-.441*	.017	.301	-.237	.473**	.641**	1	.312	.703**	.525**	.027
	Sig. (2-tailed)	.720	.202	.010	.925	.089	.191	.005	.000	.	.077	.000	.002	.862
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
physical wellness	Pearson Correlation	.033	-.315	-.263	.006	.142	-.113	.342	.263	.312	1	.404*	.206	.204
	Sig. (2-tailed)	.857	.074	.139	.975	.429	.538	.052	.140	.077	.	.020	.249	.256
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
spiritual wellness	Pearson Correlation	.308*	-.274	-.223	.115	.320	-.107	.603**	.665**	.703**	.404*	1	.493**	-.107
	Sig. (2-tailed)	.022	.122	.212	.523	.069	.560	.000	.000	.000	.020	.	.004	.555
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
intellectual wellness	Pearson Correlation	.136	-.118	-.258	.058	.290	-.019	.308	.423*	.525**	.206	.493**	1	.043
	Sig. (2-tailed)	.451	.520	.147	.750	.102	.919	.081	.014	.002	.249	.004	.	.813
	N	33	33	33	33	33	32	33	33	33	33	33	33	33
financial wellness	Pearson Correlation	-.179	-.086	.005	-.100	-.084	-.084	-.057	-.074	.027	.204	-.107	.043	1
	Sig. (2-tailed)	.319	.633	.977	.579	.643	.728	.752	.682	.882	.256	.555	.813	.
	N	33	33	33	33	33	32	33	33	33	33	33	33	33

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 11: Bivariate correlation for those participants who do not exercise

#### 4.2.2 Comparison of employees who eat healthily and those who do not

In examination of the descriptive statistics for those employees who eat healthily it is evident that these employees have normal levels of stress as all the scores are between 40T and 59T (Table 12) (Osipow, 1998). For those employees who do not eat healthily their stress levels are higher in each of the stress dimensions while their wellness levels are lower in each dimension (except for social wellness, mean = 23.00) when compared with those employees who do eat healthily. For both groups spiritual wellness is rated as the highest level of wellness with the mean scores 23.63 and 23.27, respectively.

<b>DIMENSIONS</b>	<b>EAT HEALTHILY (mean)</b>	<b>DO NOT EAT HEALTHILY (mean)</b>
<b>ROLE OVERLOAD</b>	54.83	55.80
<b>ROLE INSUFFICIENCY</b>	51.67	56.20
<b>ROLE AMBIGUITY</b>	55.38	56.07
<b>ROLE BOUNDARY</b>	50.60	60.13
<b>RESPONSIBILITY</b>	49.48	58.73
<b>PHYSICAL ENVIRONMENT</b>	48.47	52.73
<b>PSYCHOLOGICAL WELLNESS</b>	21.80	20.08
<b>EMOTIONAL WELLNESS</b>	22.45	21.07
<b>SOCIAL WELLNESS</b>	22.92	23.00
<b>PHYSICAL WELLNESS</b>	23.16	20.73
<b>SPIRITUAL WELLNESS</b>	23.63	23.27
<b>INTELLECTUAL WELLNESS</b>	22.10	21.73
<b>FINANCIAL WELLNESS</b>	17.59	17.33

*Table 12: Descriptive statistics for healthy eating*

The bivariate correlation contends that, for those employees who eat healthily, the stress dimensions have a positive correlation of .354 between role overload and role boundary at the 95% level of significance, a positive correlation of .571 at the 99% level of significance between role overload and responsibility and a positive correlation of .370 between role overload and the physical environment at the 99% level of significance (Table 13). There are also positive correlations between role insufficiency and role boundary and between role boundary, responsibility and the physical environment.

For the wellness dimensions, for those employees who eat healthily, there are firstly correlations between psychological wellness and emotional, social, spiritual and intellectual wellness (Table 13). Secondly, there are positive correlations between emotional and social, physical, spiritual and intellectual wellness. Interestingly there is a negative correlation between emotional and financial wellness. Thirdly, social wellness correlates positively with physical, spiritual and intellectual wellness. Fourthly, physical wellness correlates positively with spiritual and intellectual wellness and finally spiritual wellness correlates positively with intellectual wellness (Table 13).

This correlation table provides the results that those employees who eat healthily and who have a high level of stress as a result of role insufficiency also have low levels of social and spiritual wellness (-.358 and -.466, respectively at the 99% level of significance) or high levels of social and spiritual wellness and low levels of stress from role insufficiency (Table 13). The results also exhibit that there is a negative correlation of -.333, -.288 and -.306 between role ambiguity and emotional, social and spiritual wellness, respectively, at the 95% level of significance (Table 13). Therefore as the stress dimension drops or rises so the wellness dimensions move in the opposite direction. Finally there is a negative correlation of -.352 between role boundary and emotional wellness at the 95% level of significance (Table 13). Thus those employees who stated that they eat healthily and have high levels of stress as a result of role boundary also have a low level of emotional wellness. These results suggest that there is a relationship between perceived healthy eating and stress with special reference to certain of the stress and wellness dimensions.

Table 14 illustrates that for those employees who do not eat healthily, role ambiguity correlates positively with role boundary and the physical environment and role boundary further positively correlates with responsibility (Table 14). The wellness dimensions correlate better with each other than with the stress dimensions for the participants who do not eat healthily. In table 14 it is illustrated that psychological wellness is positively correlated with emotional and spiritual wellness, emotional wellness is positively correlated with spiritual and intellectual wellness and spiritual wellness is positively correlated with intellectual wellness.

In correlating the stress and wellness dimensions there is only one significant correlation. This correlation of -.535 is between financial wellness and responsibility at the 95% level of significance (Table 14).

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.014	.107	.354*	.571**	.370**	-.019	-.084	-.015	.057	.105	-.127	-.143
	Sig. (2-tailed)		.921	.451	.010	.000	.008	.895	.656	.915	.689	.464	.376	.318
	N	52	52	52	52	52	51	51	51	51	51	51	51	51
role insufficiency	Pearson Correlation	.014	1	.196	.359**	-.233	.166	-.268	-.188	-.358**	-.189	-.466**	-.186	.010
	Sig. (2-tailed)	.921		.104	.009	.007	.246	.057	.188	.010	.185	.001	.192	.944
	N	52	52	52	52	52	51	51	51	51	51	51	51	51
role ambiguity	Pearson Correlation	.107	.196	1	.252	.024	.224	-.224	-.333*	-.288*	-.182	-.306*	-.225	.038
	Sig. (2-tailed)	.451	.164		.071	.865	.115	.114	.040	.040	.201	.029	.113	.789
	N	52	52	52	52	52	51	51	51	51	51	51	51	51
role boundary	Pearson Correlation	.354*	.359**	.252	1	.308*	.407**	-.135	-.352*	-.130	.031	-.212	-.116	.110
	Sig. (2-tailed)	.010	.009	.071		.027	.003	.344	.011	.364	.828	.135	.417	.442
	N	52	52	52	52	52	51	51	51	51	51	51	51	51
responsibility	Pearson Correlation	.571**	-.233	.024	.308*	1	.238	-.123	-.036	.077	.079	.089	-.113	.211
	Sig. (2-tailed)	.000	.097	.865	.027		.093	.389	.802	.590	.582	.536	.429	.138
	N	52	52	52	52	52	51	51	51	51	51	51	51	51
physical environment	Pearson Correlation	.370**	.166	.224	.407**	.238	1	.135	-.232	-.087	.140	-.125	-.028	.258
	Sig. (2-tailed)	.008	.248	.115	.003	.093		.352	.105	.643	.334	.387	.845	.070
	N	51	51	51	51	51	51	51	50	50	50	50	50	50
psychological wellness	Pearson Correlation	-.019	-.268	-.224	-.135	-.123	.135	1	.499**	.563**	.263	.562**	.410**	-.257
	Sig. (2-tailed)	.895	.057	.114	.344	.389	.352		.000	.000	.062	.000	.003	.089
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
emotional wellness	Pearson Correlation	-.084	-.188	-.333*	-.352*	-.036	-.232	.499**	1	.572**	.325*	.596**	.336*	-.396**
	Sig. (2-tailed)	.656	.186	.017	.011	.802	.105	.000		.000	.020	.000	.016	.004
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
social wellness	Pearson Correlation	-.015	-.358**	-.288*	-.130	.077	-.067	.563**	.572**	1	.489**	.630**	.468**	-.169
	Sig. (2-tailed)	.915	.010	.040	.364	.590	.643	.000	.000		.000	.000	.001	.234
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
physical wellness	Pearson Correlation	.057	-.189	-.182	.031	.079	.140	.263	.325*	.489**	1	.485**	.360**	.072
	Sig. (2-tailed)	.689	.185	.201	.828	.582	.334	.062	.020	.000		.000	.010	.616
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
spiritual wellness	Pearson Correlation	.105	-.466**	-.306*	-.212	.089	-.125	.562**	.596**	.630**	.485**	1	.402**	-.097
	Sig. (2-tailed)	.464	.001	.029	.135	.536	.387	.000	.000	.000	.000		.003	.500
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
intellectual wellness	Pearson Correlation	-.127	-.186	-.225	-.116	-.113	-.028	.410**	.336*	.468**	.360**	.402**	1	-.097
	Sig. (2-tailed)	.376	.192	.113	.417	.429	.845	.003	.016	.001	.010	.003		.499
	N	51	51	51	51	51	50	51	51	51	51	51	51	51
financial wellness	Pearson Correlation	.143	.010	.038	.110	.211	.258	-.257	-.396**	-.169	.072	-.097	-.097	1
	Sig. (2-tailed)	.318	.944	.789	.442	.138	.070	.069	.004	.234	.616	.500	.499	
	N	51	51	51	51	51	50	51	51	51	51	51	51	51

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 13: Bivariate Correlation for those participants who eat healthily

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	-.108	.210	.213	.505	.284	.165	.158	.125	-.268	.298	.489	-.348
	Sig. (2-tailed)		.703	.453	.446	.055	.306	.558	.575	.656	.334	.280	.064	.206
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
role insufficiency	Pearson Correlation	-.108	1	.095	.485	.242	.046	-.188	-.233	.069	.032	.032	.040	-.316
	Sig. (2-tailed)	.703		.735	.067	.385	.870	.502	.403	.807	.909	.909	.888	.251
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
role ambiguity	Pearson Correlation	.210	.095	1	.623*	.107	.537*	.449	.430	.129	-.047	.452	.235	.139
	Sig. (2-tailed)	.453	.735	.013		.708	.039	.093	.110	.646	.867	.091	.400	.622
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
role boundary	Pearson Correlation	.213	.485	.623*	1	.633*	.351	.165	.309	.367	.143	.419	.274	-.323
	Sig. (2-tailed)	.446	.067	.013		.011	.199	.557	.262	.179	.612	.120	.323	.240
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
responsibility	Pearson Correlation	.505	.242	.107	.633*	1	.379	.119	.266	.329	.273	.352	.333	-.535*
	Sig. (2-tailed)	.055	.385	.706	.011		.163	.672	.338	.231	.324	.198	.225	.040
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
physical environment	Pearson Correlation	.284	.046	.537*	.351	.379	1	.223	.289	-.110	-.159	.290	.156	-.085
	Sig. (2-tailed)	.306	.870	.039	.199	.163		.425	.297	.695	.571	.295	.578	.762
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
psychological wellness	Pearson Correlation	.165	-.188	.449	.165	.119	.223	1	.673**	.363	.212	.648**	.300	.273
	Sig. (2-tailed)	.558	.502	.093	.557	.672	.425		.006	.147	.447	.009	.278	.325
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
emotional wellness	Pearson Correlation	.158	-.233	.430	.309	.266	.289	.673**	1	.463	.055	.651**	.672**	.386
	Sig. (2-tailed)	.575	.403	.110	.262	.338	.297	.006		.082	.846	.009	.006	.155
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
social wellness	Pearson Correlation	.125	.069	.129	.367	.329	-.110	.393	.463	1	.019	.739**	.499	.194
	Sig. (2-tailed)	.656	.807	.646	.179	.231	.695	.147	.082		.947	.002	.058	.489
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
physical wellness	Pearson Correlation	-.268	.032	-.047	.143	.273	-.159	.212	.055	.019	1	.031	-.161	.033
	Sig. (2-tailed)	.334	.909	.867	.612	.324	.571	.447	.846	.947		.913	.566	.906
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
spiritual wellness	Pearson Correlation	.298	.032	.452	.419	.352	.290	.648**	.651**	.739**	.031	1	.663**	.129
	Sig. (2-tailed)	.280	.909	.091	.120	.198	.295	.009	.009	.002	.913		.007	.647
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
intellectual wellness	Pearson Correlation	.489	.040	.235	.274	.333	.156	.300	.672**	.499	-.161	.663**	1	.073
	Sig. (2-tailed)	.064	.888	.400	.323	.225	.578	.278	.000	.058	.566	.007		.797
	N	15	15	15	15	15	15	15	15	15	15	15	15	15
financial wellness	Pearson Correlation	-.346	-.316	.139	-.323	-.535*	-.085	.273	.386	.194	.033	.129	.073	1
	Sig. (2-tailed)	.206	.251	.622	.240	.040	.782	.325	.155	.489	.906	.647	.797	
	N	15	15	15	15	15	15	15	15	15	15	15	15	15

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 14: Bivariate correlation for those participants who do not eat healthily

4.2.3 Comparison of employees who perceive themselves to be healthy and those who do not

All the scores for the stress dimensions for those employees who do not believe that they are healthy are higher than for those employees who believe that they are healthy (Table 15). Within each group the highest score for stress for the healthy employees is role ambiguity (mean = 55.20) and for the unhealthy employees is role overload (mean = 59.44). Furthermore all the scores for the wellness dimensions are lower for those employees who perceive they are not healthy compared with those employees who do perceive themselves to be healthy. As with the other groups considered up to this point the spiritual wellness is higher for both groups (mean = 23.53 and mean = 23.00 respectively).

<b>DIMENSIONS</b>	<b>HEALTHY (mean)</b>	<b>NOT HEALTHY (mean)</b>
<b>ROLE OVERLOAD</b>	54.23	59.44
<b>ROLE INSUFFICIENCY</b>	52.45	54.44
<b>ROLE AMBIGUITY</b>	55.20	58.89
<b>ROLE BOUNDARY</b>	52.35	54.11
<b>RESPONSIBILITY</b>	50.47	57.67
<b>PHYSICAL ENVIRONMENT</b>	49.49	49.67
<b>PSYCHOLOGICAL WELLNESS</b>	21.60	20.56
<b>EMOTIONAL WELLNESS</b>	22.07	22.00
<b>SOCIAL WELLNESS</b>	22.91	22.78
<b>PHYSICAL WELLNESS</b>	23.36	17.22
<b>SPIRITUAL WELLNESS</b>	23.53	23.00
<b>INTELLECTUAL WELLNESS</b>	21.86	22.56
<b>FINANCIAL WELLNESS</b>	17.62	16.89

*Table 15: Descriptive statistics for overall health*

The bivariate correlation for those employees who perceive themselves to be healthy suggests that there is a positive correlation between role overload and responsibility and the physical environment (Table 16). There are also positive correlations between role insufficiency and role boundary (.363), between role ambiguity and role boundary (.287), between role boundary and responsibility (.340) and physical environment (.363) and finally, between responsibility and the physical environment (.286) (Table 16).

When considering the wellness dimensions, there are positive correlations between all the dimensions of wellness except for financial wellness. This dimension does not correlate with any of the other wellness dimensions (Table 16).

In this bivariate correlation the stress dimension for role insufficiency correlates negatively with all the wellness dimensions except for the financial one (Table 16). These negative correlations are all at the 95% level of significance except for spiritual wellness which is negatively correlated (-.456) at the 99% level of significance (Table 16). Furthermore there is also a negative correlation of -.325 between emotional wellness and role boundary at the 95% level of significance (Table 16). Thus, in line with the hypothesis, there is evidence that there is a relationship between healthy people, stress and wellness dimensions.

Table 17 shows the correlations for those employees who do not perceive themselves to be healthy. Role overload correlates positively with role boundary, role insufficiency correlates positively with role boundary and the physical environment and role boundary correlates positively with responsibility and the physical environment.

For the wellness dimensions there are positive correlations between emotional and social wellness at the 95% level of significance with emotional wellness negatively correlating with financial wellness and the 99% level of significance. Furthermore there are positive correlations with social and spiritual wellness.

There are no correlations between the stress and wellness dimensions for this group. This is based on the standard 95% and 99% levels of significance.

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	-.031	.095	.251	.515**	.353**	.018	-.040	-.056	.078	.120	-.049	.036
	Sig. (2-tailed)		.817	.471	.053	.000	.006	.895	.788	.674	.559	.370	.715	.789
	N	60	60	60	60	60	59	58	58	58	58	58	58	58
role insufficiency	Pearson Correlation	-.031	1	.116	.363**	-.175	.105	-.278*	-.268*	-.334*	-.273*	-.456**	-.264*	-.079
	Sig. (2-tailed)	.817		.379	.004	.181	.428	.035	.042	.010	.038	.000	.045	.554
	N	60	60	60	60	60	59	58	58	58	58	58	58	58
role ambiguity	Pearson Correlation	.095	.116	1	.287*	-.039	.316*	-.104	-.135	-.205	-.177	-.127	-.144	.019
	Sig. (2-tailed)	.471	.379	.026	.028	.765	.015	.436	.311	.122	.184	.342	.281	.886
	N	60	60	60	60	60	59	58	58	58	58	58	58	58
role boundary	Pearson Correlation	.251	.363**	.287*	1	.340**	.363**	-.115	-.325*	-.135	-.107	-.187	-.165	-.024
	Sig. (2-tailed)	.053	.004	.026		.008	.005	.391	.013	.313	.423	.161	.215	.860
	N	60	60	60	60	60	59	58	58	58	58	58	58	58
responsibility	Pearson Correlation	.515**	-.175	-.039	.340**	1	.286*	-.181	-.115	.033	.064	.069	-.162	.114
	Sig. (2-tailed)	.000	.181	.765	.008		.028	.174	.391	.804	.034	.000	.226	.395
	N	60	60	60	60	60	59	58	58	58	58	58	58	58
physical environment	Pearson Correlation	.353**	.105	.316*	.363**	.286*	1	.114	-.167	-.156	.003	-.107	-.086	.133
	Sig. (2-tailed)	.006	.428	.015	.005	.028		.397	.214	.248	.983	.428	.524	.325
	N	59	59	59	59	59	59	59	57	57	57	57	57	57
psychological wellness	Pearson Correlation	.018	-.278*	-.104	-.115	-.181	.114	1	.542**	.527**	.326*	.593**	.470**	-.117
	Sig. (2-tailed)	.895	.035	.436	.391	.174	.397		.000	.000	.013	.000	.000	.383
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
emotional wellness	Pearson Correlation	-.040	-.268*	-.135	-.325*	-.115	-.167	.542**	1	.517**	.350**	.620**	.419**	-.118
	Sig. (2-tailed)	.788	.042	.311	.013	.391	.214	.000		.000	.007	.000	.001	.379
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
social wellness	Pearson Correlation	-.056	-.334*	-.205	-.135	.033	-.156	.527**	.517**	1	.495**	.830**	.478**	-.043
	Sig. (2-tailed)	.674	.010	.122	.313	.804	.248	.000	.000		.000	.000	.000	.748
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
physical wellness	Pearson Correlation	.078	-.273*	-.177	-.107	.064	.003	.326*	.350**	.495**	1	.498**	.364**	.080
	Sig. (2-tailed)	.559	.038	.184	.423	.634	.983	.013	.007	.000		.000	.005	.552
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
spiritual wellness	Pearson Correlation	.120	-.456**	-.127	-.187	.069	-.107	.593**	.620**	.630**	.498**	1	.488**	-.020
	Sig. (2-tailed)	.370	.000	.342	.161	.606	.428	.000	.000	.000	.000		.000	.882
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
intellectual wellness	Pearson Correlation	-.049	-.204*	-.144	-.165	-.162	-.086	.470**	.419**	.478**	.364**	.488**	1	.043
	Sig. (2-tailed)	.715	.045	.281	.215	.226	.524	.000	.001	.000	.005	.000		.747
	N	58	58	58	58	58	57	58	58	58	58	58	58	58
financial wellness	Pearson Correlation	.036	-.079	.019	-.024	.114	.133	-.117	-.118	-.043	.080	-.020	.043	1
	Sig. (2-tailed)	.789	.554	.886	.860	.395	.325	.383	.379	.748	.552	.882	.747	
	N	58	58	58	58	58	57	58	58	58	58	58	58	58

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 16: Bivariate correlation for those participants who are healthy



Correlations

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.195	.295	.716*	.666	.392	-.033	.032	.452	.098	.301	.277	.207
	Sig. (2-tailed)	.	.615	.442	.030	.050	.296	.932	.936	.222	.803	.432	.470	.592
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
role insufficiency	Pearson Correlation	.195	1	.631	.794*	.545	.774*	-.232	.114	-.171	.524	.381	.610	.099
	Sig. (2-tailed)	.615	.	.069	.011	.129	.014	.549	.770	.659	.148	.312	.081	.800
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
role ambiguity	Pearson Correlation	.295	.631	1	.658	.535	.505	-.020	-.200	-.025	.594	.150	.129	.521
	Sig. (2-tailed)	.442	.069	.	.054	.138	.166	.959	.606	.949	.002	.701	.740	.150
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
role boundary	Pearson Correlation	.716*	.794*	.658	1	.862**	.732*	-.030	.240	.503	.542	.528	.801	.120
	Sig. (2-tailed)	.030	.011	.054	.	.003	.025	.939	.534	.168	.131	.144	.087	.759
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
responsibility	Pearson Correlation	.666	.545	.535	.862**	1	.504	.300	.512	.581	.833	.451	.544	-.156
	Sig. (2-tailed)	.050	.129	.138	.003	.	.167	.432	.158	.101	.067	.224	.130	.689
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
physical environment	Pearson Correlation	.392	.774*	.505	.732*	.504	1	-.141	-.008	.322	.145	.363	.483	.338
	Sig. (2-tailed)	.296	.014	.166	.025	.167	.	.717	.988	.398	.709	.337	.188	.374
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
psychological wellness	Pearson Correlation	-.033	-.232	-.020	-.030	.300	-.141	1	.623	.549	.010	.562	.137	-.311
	Sig. (2-tailed)	.932	.549	.959	.939	.432	.717	.	.073	.128	.980	.115	.728	.416
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
emotional wellness	Pearson Correlation	.032	.114	-.200	.240	.512	-.006	.623	1	.765*	.409	.592	.580	-.811**
	Sig. (2-tailed)	.936	.770	.608	.534	.158	.988	.073	.	.016	.274	.093	.102	.008
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
social wellness	Pearson Correlation	.452	.171	-.025	.503	.581	.322	.549	.765*	1	.207	.831**	.500	-.336
	Sig. (2-tailed)	.222	.659	.949	.168	.101	.398	.128	.016	.	.593	.005	.170	.377
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
physical wellness	Pearson Correlation	.098	.524	.594	.542	.633	.145	.010	.409	.207	1	.108	.313	-.241
	Sig. (2-tailed)	.803	.148	.092	.131	.067	.709	.980	.274	.593	.	.782	.412	.533
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
spiritual wellness	Pearson Correlation	.301	.381	.150	.528	.451	.363	.562	.592	.831**	.108	1	.556	-.163
	Sig. (2-tailed)	.432	.312	.701	.144	.224	.337	.115	.093	.005	.782	.	.120	.675
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
intellectual wellness	Pearson Correlation	.277	.610	.129	.801	.544	.483	.137	.580	.500	.313	.556	1	-.510
	Sig. (2-tailed)	.470	.081	.740	.087	.130	.188	.728	.102	.170	.412	.120	.	.161
	N	9	9	9	9	9	9	9	9	9	9	9	9	9
financial wellness	Pearson Correlation	.207	.099	.521	.120	-.156	.338	-.311	-.811**	-.336	-.241	-.163	-.510	1
	Sig. (2-tailed)	.592	.800	.150	.759	.689	.374	.416	.008	.377	.533	.675	.161	.
	N	9	9	9	9	9	9	9	9	9	9	9	9	9

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 17: Bivariate correlation for those participants who are not healthy

### 4.3 Comparison between all the educators and all the administration staff

The results below are for the educators and administration staff for the college as a whole. The results for each individual statistical procedure will be placed together to make for easy comparisons between the two groups.

The first statistics provide information on the frequencies for certain dimensions for the educators and then for the administration staff. From the tables below (Table 18 and 19) the evidence suggests that the educators (58.7%) participate more in exercise than the administration staff (37.5%), however they only eat slightly more healthily (76.1% and 70.8% respectively), furthermore the administration staff seem overall to be slightly more healthy than the educators (87.5% and 84.8% respectively). In both groups the evidence would suggest that the employees live fairly healthy lives as more employees eat healthily and perceive themselves as being healthy than do not. These scores are however based on self-report and are therefore very subjective based on how the participants view healthy eating and overall health. Furthermore, more educators exercise than do not, however, more administration staff appear to refrain from exercise than participate in it.

	Role	Gender		Exercise		Healthy eating		Overall health	
	Educator	Female	Male	Yes	No	Yes	No	Yes	No
<b>Number</b>	46	20	25	27	19	35	10	39	7
<b>%</b>		43.5	54.3	58.7	41.3	76.1	21.7	84.8	15.2
<b>Missing</b>	1	1		0		1		0	

*Table 18: Summary table of frequencies for the educators at Sivananda FET College*

	Role	Gender		Exercise		Healthy eating		Overall health	
	Administration	Female	Male	Yes	No	Yes	No	Yes	No
<b>Number</b>	24	17	5	9	14	17	5	21	2
<b>%</b>		70.8	20.8	37.5	58.3	70.8	20.8	87.5	8.3
<b>Missing</b>	0	2		1		2		1	

*Table 19: Summary table of frequencies for the administration staff at Sivananda FET College*

The table below provides descriptive statistics for the educators and administration staff (Table 20).

<b>DIMENSIONS</b>	<b>EDUCATORS (mean)</b>	<b>ADMIN STAFF (mean)</b>
<b>ROLE OVERLOAD</b>	55.09	54.79
<b>ROLE INSUFFICIENCY</b>	52.39	53.46
<b>ROLE AMBIGUITY</b>	55.78	55.37
<b>ROLE BOUNDARY</b>	50.70	57.58
<b>RESPONSIBILITY</b>	50.89	53.38
<b>PHYSICAL ENVIRONMENT</b>	49.89	49.52
<b>PSYCHOLOGICAL WELLNESS</b>	21.76	20.87
<b>EMOTIONAL WELLNESS</b>	22.29	21.78
<b>SOCIAL WELLNESS</b>	23.40	22.04
<b>PHYSICAL WELLNESS</b>	23.04	21.70
<b>SPIRITUAL WELLNESS</b>	23.87	22.70
<b>INTELLECTUAL WELLNESS</b>	22.18	21.52
<b>FINANCIAL WELLNESS</b>	17.58	17.48

*Table 20: Descriptive statistics for the educators and administration staff*

What is important to determine from these statistics is which dimension of stress and which dimension of wellness the educators and administration staff score the highest on. From table 20 it is evident that the educators scored the highest for role ambiguity with a mean T-score of 55.78. If we compare this to the highest scoring stress dimension for the administration staff it is evident that their highest cause of occupational role stress is role boundary with a mean T-score of 57.58. For both groups the lowest cause of stress is the physical environment. However, all the scores are, as Osipow (1998) contends, within the normal range for occupational stress and psychological strain. There is no consistent difference between the stress levels for these two groups.

In terms of the wellness construct, the evidence suggests that the educator's highest level of wellness is in the spiritual dimension (mean score of 23.87) while their lowest level of wellness is in the financial dimension (mean score of 17.58). In comparison the administrative staff too have their highest level of wellness in the spiritual dimension (mean score of 22.70)

with their lowest level again in the financial dimension (mean score of 17.48). However, all of the scores for both the educators and administrative staff indicate that their wellness levels in all dimensions are above the mean wellness level (15). The administrative staff consistently score lower on the wellness dimensions than the educators.

The results now proceed to the bivariate correlations for the educators and administration staff. These results can be viewed in table 21 and 22 respectively. Table 21 contends that there are positive correlations between role overload and role boundary, responsibility and the physical environment, between role insufficiency and role boundary, between role ambiguity, role boundary and the physical environment and between role boundary, responsibility and the physical environment. The wellness dimensions for the educators show positive correlations for psychological wellness with emotional, social, spiritual and intellectual wellness, for emotional wellness with social, physical, spiritual and intellectual wellness, for social with physical, spiritual and intellectual wellness, for physical with spiritual and intellectual wellness and for spiritual with intellectual wellness.

For the educators (Table 21) there was evidence of a negative correlation of -.327, -.412, -.403, -.422, between role insufficiency and psychological wellness (95% level of significance), emotional wellness (99% correlation), social wellness (99% correlation) and spiritual wellness (99% correlation) respectively. Thus when certain educators have high stress as a result of role insufficiency, they will also have a significant chance of having a low level of psychological, emotional, social and spiritual wellness. There was also a negative correlation of -.364 between role boundary and emotional wellness at the 95% level of significance. Finally there is a negative correlation of -.313 between responsibility and intellectual wellness at the 95% level of significance.

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.043	.035	.303*	.561**	.341*	-.088	-.188	-.086	.073	-.052	-.223	.164
	Sig. (2-tailed)	.	.777	.820	.041	.000	.020	.564	.217	.574	.633	.737	.141	.280
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
role insufficiency	Pearson Correlation	.043	1	.103	.345*	-.165	.086	-.327*	-.412**	-.403**	-.243	-.422**	-.211	.056
	Sig. (2-tailed)	.777	.	.494	.019	.272	.570	.028	.005	.006	.107	.004	.165	.716
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
role ambiguity	Pearson Correlation	.035	.103	1	.369*	.100	.367*	-.121	-.198	-.136	-.167	-.132	-.238	.078
	Sig. (2-tailed)	.820	.494	.	.012	.510	.012	.428	.191	.374	.273	.387	.115	.609
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
role boundary	Pearson Correlation	.303*	.345*	.369*	1	.392**	.407**	-.061	-.364*	.000	.048	-.125	-.092	.096
	Sig. (2-tailed)	.041	.019	.012	.	.007	.005	.692	.014	1.000	.754	.413	.546	.529
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
responsibility	Pearson Correlation	.561**	-.165	.100	.392**	1	.284	-.197	-.253	-.080	.060	-.062	-.313*	.208
	Sig. (2-tailed)	.000	.272	.510	.007	.	.055	.194	.093	.600	.696	.083	.036	.171
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
physical environment	Pearson Correlation	.341*	.086	.367*	.407**	.284	1	.004	-.208	-.153	-.006	-.066	-.120	.280
	Sig. (2-tailed)	.020	.570	.012	.005	.055	.	.982	.171	.316	.967	.066	.433	.063
	N	46	46	46	46	46	46	45	45	45	45	45	45	45
psychological wellness	Pearson Correlation	-.088	-.327**	-.121	-.061	-.197	.004	1	.622**	.586**	.241	.665**	.482**	-.184
	Sig. (2-tailed)	.564	.028	.428	.692	.194	.962	.	.000	.000	.110	.000	.001	.227
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
emotional wellness	Pearson Correlation	-.188	-.412**	-.198	-.364*	-.253	-.208	.622**	1	.555**	.355*	.609**	.494**	-.120
	Sig. (2-tailed)	.217	.005	.191	.014	.093	.171	.000	.	.000	.017	.000	.001	.433
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
social wellness	Pearson Correlation	-.086	-.403**	-.136	.000	-.080	-.153	.586**	.555**	1	.423**	.660**	.405**	-.112
	Sig. (2-tailed)	.574	.006	.374	1.000	.600	.316	.000	.000	.000	.004	.000	.006	.462
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
physical wellness	Pearson Correlation	.073	-.243	-.167	.048	.060	-.006	.241	.355*	.423**	1	.478**	.317*	.088
	Sig. (2-tailed)	.633	.107	.273	.754	.696	.967	.110	.017	.004	.	.001	.034	.657
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
spiritual wellness	Pearson Correlation	-.052	-.422**	-.132	-.125	-.062	-.066	.665**	.609**	.660**	.478**	1	.455**	-.081
	Sig. (2-tailed)	.737	.004	.387	.413	.683	.666	.000	.000	.000	.001	.	.002	.595
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
intellectual wellness	Pearson Correlation	-.223	-.211	-.238	-.092	-.313*	-.120	.482**	.494**	.405**	.317*	.455**	1	-.082
	Sig. (2-tailed)	.141	.165	.115	.546	.036	.433	.001	.001	.006	.034	.002	.	.593
	N	45	45	45	45	45	45	45	45	45	45	45	45	45
financial wellness	Pearson Correlation	.164	.056	.078	.096	.208	.280	-.184	-.120	-.112	.068	-.081	-.082	1
	Sig. (2-tailed)	.280	.716	.609	.529	.171	.063	.227	.433	.462	.657	.595	.593	.
	N	45	45	45	45	45	45	45	45	45	45	45	45	45

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 21: Bivariate correlation for the educators

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	-.037	.321	.397	.516**	.399	.212	.308	.241	-.217	.481*	.354	-.257
	Sig. (2-tailed)	.	.863	.126	.055	.010	.059	.331	.152	.268	.319	.020	.097	.236
	N	24	24	24	24	24	23	23	23	23	23	23	23	23
role insufficiency	Pearson Correlation	-.037	1	.274	.511*	.079	.389	-.223	.027	-.055	-.152	-.279	-.065	-.258
	Sig. (2-tailed)	.863	.	.195	.011	.714	.067	.305	.901	.802	.489	.197	.768	.234
	N	24	24	24	24	24	23	23	23	23	23	23	23	23
role ambiguity	Pearson Correlation	.321	.274	1	.244	-.042	.188	-.103	-.042	-.325	-.231	-.071	.094	.013
	Sig. (2-tailed)	.126	.195	.	.250	.847	.390	.639	.849	.130	.289	.748	.670	.954
	N	24	24	24	24	24	23	23	23	23	23	23	23	23
role boundary	Pearson Correlation	.397	.511*	.244	1	.593**	.663**	-.095	.161	.208	.061	.147	.147	-.152
	Sig. (2-tailed)	.055	.011	.250	.	.002	.001	.667	.463	.341	.781	.502	.504	.488
	N	24	24	24	24	24	23	23	23	23	23	23	23	23
responsibility	Pearson Correlation	.516**	.079	-.042	.593**	1	.530**	.070	.489*	.656**	.043	.452*	.385	-.268
	Sig. (2-tailed)	.010	.714	.847	.002	.	.009	.751	.018	.001	.846	.030	.069	.215
	N	24	24	24	24	24	23	23	23	23	23	23	23	23
physical environment	Pearson Correlation	.399	.389	.188	.663**	.530**	1	.284	.101	.185	.203	.003	.197	-.188
	Sig. (2-tailed)	.059	.067	.390	.001	.009	.	.200	.656	.409	.365	.989	.380	.403
	N	23	23	23	23	23	23	22	22	22	22	22	22	22
psychological wellness	Pearson Correlation	.212	-.223	-.103	-.095	.070	.284	1	.347	.308	.472*	.415*	.281	.009
	Sig. (2-tailed)	.331	.305	.639	.667	.751	.200	.	.105	.153	.023	.049	.193	.967
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
emotional wellness	Pearson Correlation	.308	.027	-.042	.161	.489*	.101	.347	1	.555**	.204	.626**	.350	-.422*
	Sig. (2-tailed)	.152	.901	.849	.463	.018	.656	.105	.	.006	.350	.001	.102	.045
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
social wellness	Pearson Correlation	.241	-.055	-.325	.208	.656**	.185	.308	.555**	1	.297	.614**	.592**	-.002
	Sig. (2-tailed)	.268	.802	.130	.341	.001	.409	.153	.006	.	.168	.002	.003	.991
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
physical wellness	Pearson Correlation	-.217	-.152	-.231	.061	.043	.203	.472*	.204	.297	1	.229	.145	.109
	Sig. (2-tailed)	.319	.489	.289	.781	.846	.365	.023	.350	.168	.	.294	.509	.621
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
spiritual wellness	Pearson Correlation	.481*	-.279	-.071	.147	.452*	.003	.415*	.626**	.614**	.229	1	.525*	.063
	Sig. (2-tailed)	.020	.197	.748	.502	.030	.989	.049	.001	.002	.294	.	.010	.776
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
intellectual wellness	Pearson Correlation	.354	-.065	.094	.147	.385	.197	.281	.350	.592**	.145	.525*	1	.021
	Sig. (2-tailed)	.097	.768	.670	.504	.069	.380	.193	.102	.003	.509	.010	.	.924
	N	23	23	23	23	23	22	23	23	23	23	23	23	23
financial wellness	Pearson Correlation	-.257	-.258	.013	-.152	-.268	-.188	.009	-.422*	-.002	.109	.063	.021	1
	Sig. (2-tailed)	.236	.234	.954	.488	.215	.403	.967	.045	.991	.621	.776	.924	.
	N	23	23	23	23	23	22	23	23	23	23	23	23	23

\*\* : Correlation is significant at the 0.01 level (2-tailed).

\* : Correlation is significant at the 0.05 level (2-tailed).

Table 22: Bivariate correlation for the administrator staff

Table 22 is the correlation table for the administration staff. The correlations for the stress dimensions are significant (at the 95% and 99% level of significance) and positive between role overload and responsibility, between role insufficiency and role boundary, between role boundary, responsibility and the physical environment and between responsibility and the physical environment. In the wellness dimensions there are positive correlations between psychological wellness and physical and social wellness, between emotional and social and spiritual wellness (with a negative correlation between emotional and financial wellness), between social and spiritual and intellectual wellness and between spiritual and intellectual wellness.

In correlating the stress and wellness dimensions the highest correlation for the administrative staff (Table 22) is a correlation of .481 between role overload and spiritual wellness at the 95% level of significance. This is a positive correlation which means that as stress increases with regards to role overload so too does spiritual wellness. There is also a 95% significant positive correlation between stress resulting from responsibility and emotional (.489), social (.656) and spiritual wellness (.452). Therefore as either the stress or wellness level increases or decreases so too does the other construct. In making a comparison, it can be stated that, while educator stress is negatively correlated with wellness, administrative staff stress is positively correlated with wellness.

#### **4.4 Comparison between all the female and male participants**

Table 23 delineates the stress and wellness means for the males and females from the College as a whole. The greatest cause of stress for the female staff is role overload (mean = 56.70) whereas for the males the greatest cause of stress is role ambiguity (mean = 57.70). The evidence suggests that male staff are more stressed than female staff as they score higher in four of the six dimensions. Of particular notice is the male score for the physical environment as a cause of stress (mean = 52.53) as this has been the highest score for this dimension so far.

In the wellness construct both the females and males have the highest level of wellness for the spiritual dimension (mean = 23.42 and mean = 23.7) (Table 23). The female participants have the highest scores for emotional, social, physical and intellectual wellness. The males have the highest levels of wellness for the other dimensions, namely, psychological, spiritual and financial wellness.

DIMENSIONS	FEMALES (mean)	MALES (mean)
ROLE OVERLOAD	56.70	53.00
ROLE INSUFFICIENCY	51.95	53.60
ROLE AMBIGUITY	53.78	57.70
ROLE BOUNDARY	51.32	54.47
RESPONSIBILITY	51.84	51.20
PHYSICAL ENVIRONMENT	46.86	52.53
PSYCHOLOGICAL WELLNESS	21.14	22.10
EMOTIONAL WELLNESS	22.50	21.70
SOCIAL WELLNESS	23.19	22.63
PHYSICAL WELLNESS	22.67	22.53
SPIRITUAL WELLNESS	23.42	23.70
INTELLECTUAL WELLNESS	22.03	22.00
FINANCIAL WELLNESS	17.11	18.03

*Table 23: Descriptive statistics for the female and male staff*

In following the trend of the thesis a bivariate correlation was run on the results from the females and males. These results are presented in table 24 and 25 respectively. Table 24 exhibits the correlations for the female staff. The stress dimensions correlate positively for role overload with role ambiguity, role boundary, responsibility and the physical environment, for role insufficiency with role boundary and the physical environment, for role ambiguity with role boundary, for role boundary with responsibility and the physical environment and for responsibility with the physical environment.

The significant positive wellness correlations between the dimensions of wellness are for psychological wellness with emotional, social, spiritual and intellectual wellness, for emotional wellness with spiritual and intellectual wellness (with a negative correlation with financial wellness), social wellness with spiritual and intellectual wellness and spiritual wellness with intellectual wellness (Table 24)

The results for the females, when correlating the stress and wellness dimensions, illustrate that there is a negative correlation of  $-0.367$  between role insufficiency and spiritual wellness at the 95% level of significance (Table 24).



		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	.180	.397*	.449**	.614**	.535**	-.174	.011	-.054	-.006	.100	.072	.066
	Sig. (2-tailed)	.	.285	.015	.005	.000	.001	.310	.949	.753	.972	.268	.076	.701
	N	37	37	37	37	37	36	36	36	36	36	36	36	36
role insufficiency	Pearson Correlation	.180	1	-.128	.528**	.059	.359*	-.239	-.144	-.229	-.206	-.367*	-.109	-.216
	Sig. (2-tailed)	.285	.	.450	.001	.730	.032	.160	.402	.180	.229	.028	.527	.207
	N	37	37	37	37	37	36	36	36	36	36	36	36	36
role ambiguity	Pearson Correlation	.397*	.128	1	.344*	.180	.321	-.103	.080	-.130	-.129	-.005	.128	-.143
	Sig. (2-tailed)	.015	.450	.	.037	.286	.056	.552	.643	.449	.453	.979	.456	.406
	N	37	37	37	37	37	36	36	36	36	36	36	36	36
role boundary	Pearson Correlation	.449**	.528**	.344*	1	.430**	.491**	-.187	-.197	-.171	-.092	-.100	.020	-.027
	Sig. (2-tailed)	.005	.001	.037	.	.008	.002	.274	.250	.320	.595	.562	.906	.874
	N	37	37	37	37	37	36	36	36	36	36	36	36	36
responsibility	Pearson Correlation	.614**	.059	.180	.430**	1	.496**	-.220	.048	.037	.015	.087	.028	.152
	Sig. (2-tailed)	.000	.730	.286	.008	.	.002	.197	.782	.831	.929	.614	.869	.375
	N	37	37	37	37	37	36	36	36	36	36	36	36	36
physical environment	Pearson Correlation	.535**	.359*	.321	.491**	.496**	1	-.025	-.142	-.152	.086	-.108	.022	.023
	Sig. (2-tailed)	.001	.032	.056	.002	.002	.	.889	.417	.383	.625	.537	.901	.897
	N	36	36	36	36	36	36	36	35	35	35	35	35	35
psychological wellness	Pearson Correlation	-.174	-.239	-.103	-.187	-.220	-.025	1	.612**	.706**	.170	.632**	.401*	-.283
	Sig. (2-tailed)	.310	.160	.552	.274	.197	.889	.	.000	.000	.323	.000	.015	.094
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
emotional wellness	Pearson Correlation	.011	-.144	.080	-.197	.048	-.142	.612**	1	.708**	.136	.634**	.396*	-.398*
	Sig. (2-tailed)	.949	.402	.643	.250	.782	.417	.000	.	.000	.429	.000	.017	.016
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
social wellness	Pearson Correlation	-.054	-.229	-.130	-.171	.037	-.152	.706**	.708**	1	.233	.708**	.491**	-.209
	Sig. (2-tailed)	.753	.180	.449	.320	.831	.383	.000	.000	.	.171	.000	.002	.221
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
physical wellness	Pearson Correlation	-.006	-.206	-.129	-.092	.015	.086	.170	.136	.233	1	.327	.050	.121
	Sig. (2-tailed)	.972	.229	.453	.595	.929	.625	.323	.429	.171	.	.052	.773	.480
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
spiritual wellness	Pearson Correlation	.100	-.367*	-.005	-.100	.087	-.108	.632**	.634**	.706**	.327	1	.436**	-.073
	Sig. (2-tailed)	.268	.028	.979	.562	.614	.537	.000	.000	.000	.052	.	.008	.672
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
intellectual wellness	Pearson Correlation	.072	-.109	.128	.020	.028	.022	.401*	.396*	.491**	.050	.436**	1	-.106
	Sig. (2-tailed)	.676	.527	.456	.906	.869	.901	.015	.017	.002	.773	.008	.	.530
	N	36	36	36	36	36	35	36	36	36	36	36	36	36
financial wellness	Pearson Correlation	.066	-.216	-.143	-.027	.152	.023	-.283	-.398*	-.209	.121	-.073	-.106	1
	Sig. (2-tailed)	.701	.207	.406	.874	.375	.897	.094	.016	.221	.480	.672	.539	.
	N	36	36	36	36	36	35	36	36	36	36	36	36	36

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 24: Bivariate correlation for the female participants

		role overload	role insufficiency	role ambiguity	role boundary	responsibility	physical environment	psychological wellness	emotional wellness	social wellness	physical wellness	spiritual wellness	intellectual wellness	financial wellness
role overload	Pearson Correlation	1	-.190	-.049	.186	.443*	.349	.300	-.108	.069	.005	.082	-.083	.071
	Sig. (2-tailed)		.316	.796	.326	.014	.058	.107	.571	.718	.977	.666	.664	.709
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
role insufficiency	Pearson Correlation	-.190	1	.177	.218	-.289	-.001	-.412*	-.304	-.300	-.213	-.378*	-.190	.082
	Sig. (2-tailed)	.316		.349	.246	.121	.997	.024	.103	.107	.039	.039	.315	.668
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
role ambiguity	Pearson Correlation	-.049	.177	1	.331	-.104	.224	-.114	-.303	-.189	-.174	-.221	-.324	.218
	Sig. (2-tailed)	.796	.349		.074	.588	.233	.550	.104	.316	.359	.240	.080	.252
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
role boundary	Pearson Correlation	.186	.218	.331	1	.464**	.392*	-.053	-.297	.314	.085	-.019	-.135	-.003
	Sig. (2-tailed)	.326	.246	.074		.010	.032	.781	.110	.091	.656	.922	.478	.989
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
responsibility	Pearson Correlation	.443*	-.289	-.104	.464**	1	.227	.057	-.167	.251	.011	.194	-.152	-.077
	Sig. (2-tailed)	.014	.121	.586	.010		.229	.765	.376	.180	.952	.305	.421	.685
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
physical environment	Pearson Correlation	.349	-.001	.224	.392*	.227	1	.173	-.089	.034	.004	.025	.015	.215
	Sig. (2-tailed)	.058	.997	.233	.032	.229		.360	.640	.857	.982	.894	.938	.253
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
psychological wellness	Pearson Correlation	.300	-.412*	-.114	-.053	.057	.173	1	.486**	.293	.459*	.473**	.363*	-.023
	Sig. (2-tailed)	.107	.024	.550	.781	.765	.300		.006	.117	.011	.008	.048	.905
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
emotional wellness	Pearson Correlation	-.108	-.304	-.303	-.297	-.167	-.089	.486**	1	.293	.519**	.593**	.473**	.047
	Sig. (2-tailed)	.571	.103	.104	.110	.376	.640	.006		.116	.003	.001	.008	.805
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
social wellness	Pearson Correlation	.069	-.300	-.189	.314	.251	.034	.293	.293	1	.630**	.577**	.441*	.099
	Sig. (2-tailed)	.718	.107	.316	.091	.180	.857	.117	.116		.000	.001	.015	.604
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
physical wellness	Pearson Correlation	.005	-.213	-.174	.085	.011	.004	.459*	.519**	.630**	1	.554**	.560**	.011
	Sig. (2-tailed)	.977	.259	.359	.656	.952	.982	.011	.003	.000		.001	.001	.953
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
spiritual wellness	Pearson Correlation	.082	-.378*	-.221	-.019	.194	.025	.473**	.593**	.577**	.554**	1	.568**	.001
	Sig. (2-tailed)	.666	.039	.240	.922	.305	.894	.008	.001	.001	.001		.001	.996
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
intellectual wellness	Pearson Correlation	-.083	-.190	-.324	-.135	-.152	.015	.363*	.473**	.441*	.560**	.568**	1	.036
	Sig. (2-tailed)	.664	.315	.080	.478	.421	.938	.048	.008	.015	.001	.001		.849
	N	30	30	30	30	30	30	30	30	30	30	30	30	30
financial wellness	Pearson Correlation	.071	.082	.216	-.003	-.077	.215	-.023	.047	.099	.011	.001	.036	1
	Sig. (2-tailed)	.709	.668	.252	.989	.685	.253	.905	.805	.604	.953	.996	.849	
	N	30	30	30	30	30	30	30	30	30	30	30	30	30

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 25: Bivariate correlation for the male participants

The final correlation table is Table 25 which is for the male employees of Sivananda. This table delineates that role overload is positively correlated with responsibility and role boundary is positively correlated with responsibility and the physical environment. The wellness dimensions show positive correlations for psychological wellness with emotional, physical, spiritual and intellectual wellness, for emotional wellness with physical, spiritual and intellectual wellness, for social wellness with physical, spiritual and intellectual wellness, for physical wellness with spiritual and intellectual wellness and for spiritual wellness with intellectual wellness. In terms of the correlations between the stress and wellness dimensions the males have a negative correlation of  $-.378$  between role insufficiency and spiritual wellness as well as a negative correlation of  $-.412$  between role insufficiency and psychological wellness at the 95% level of significance (Table 25).

#### **4.5 Campus comparisons**

The results in this section focus on comparing each campus overall, the administration staff from each campus, the education staff from each campus, as well as the males and females, those staff who eat healthily and those that do not, and those staff that define themselves as healthy overall and those that are not. Descriptive statistics will be used to perform these comparisons. The descriptive statistics, generated by SPSS, have been placed in a table to allow for easy comparison.

##### **4.5.1 Total campus comparisons**

It is important, first of all, to compare which dimensions of stress and which dimensions of wellness are found to be the highest for each campus included in the study.

Table 26 allows for easy comparison, between the campuses, of the different dimensions of stress and wellness. Pinetown campus consistently scores lower on all of the dimensions of stress compared with the other three campuses. In addition Pinetown campus scores highest for the wellness dimensions, save for the intellectual and financial dimensions. Kwa Mashu campus predominantly scores the highest for the stress construct. The central office stated that their highest mean cause of stress was due to role overload (mean = 63.40T). This places them in the 'mild levels of maladaptive stress and strain' category which is higher than previously noted for the comparisons above (Osipow, 1998). All the other dimensions of stress fall within the normal range (40T to 59T) for occupational stress, for all the campuses (Osipow, 1998). The highest mean level of stress for Kwa Mashu campus is for role ambiguity (mean =

58.92); role boundary is the highest mean cause of stress for the employees of Ntuzuma campus (mean = 56.38); and finally the highest mean cause of stress for the Pinetown campus is for role overload (mean = 53.08).

With regard to the wellness dimensions there are no extreme results (Table 26). All the campuses rated that their financial wellness was their lowest level of wellness. The central office had their highest mean score for wellness equally for spiritual (mean = 23.20) and intellectual wellness (mean = 23.20). The Kwa Mashu staff also had the highest mean level of wellness for the spiritual dimension (mean = 23.17). The staff at Ntuzuma stated that their mean highest score for wellness was in the physical dimension (mean = 23.06). Finally Pinetown campus scored the highest level of wellness for the social dimension (mean = 24.54).

<b>DIMENSIONS</b>	<b>CENTRAL OFFICE (mean)</b>	<b>KWAMASHU (mean)</b>	<b>NTUZUMA (mean)</b>	<b>PINETOWN (mean)</b>
<b>ROLE OVERLOAD</b>	63.40	56.20	55.06	53.08
<b>ROLE INSUFFICIENCY</b>	52.00	55.40	52.63	50.48
<b>ROLE AMBIGUITY</b>	54.80	58.92	55.13	52.80
<b>ROLE BOUNDARY</b>	53.40	57.00	56.38	47.12
<b>RESPONSIBILITY</b>	51.20	57.84	50.37	47.24
<b>PHYSICAL ENVIRONMENT</b>	45.25	53.60	53.44	44.00
<b>PSYCHOLOGICAL WELLNESS</b>	21.20	20.38	21.88	22.42
<b>EMOTIONAL WELLNESS</b>	23.20	21.21	21.19	23.38
<b>SOCIAL WELLNESS</b>	22.40	22.58	22.25	24.54
<b>PHYSICAL WELLNESS</b>	22.60	22.04	23.06	23.12
<b>SPIRITUAL WELLNESS</b>	23.20	23.17	22.44	24.46
<b>INTELLECTUAL WELLNESS</b>	23.20	21.42	22.06	22.29
<b>FINANCIAL WELLNESS</b>	15.40	18.46	18.81	15.92

*Table 26: Descriptive statistics for the different campuses*

#### 4.5.2 Educator campus comparisons

As the research is focused predominantly on educators the following statistics are only for the educators at Sivananda FET College. A further reason for eliminating the administration staff at this point is because they represent only 33.8% of the total number of participants which translates into their results being very unrepresentative. When divided by campus the educators also constitute a small sample of respondents and therefore their results should only be taken as an indication of the stress and wellness levels.

Table 27 illustrates how many educators from each campus participated in the research.

	<b>KwaMashu</b>	<b>Ntuzuma</b>	<b>Pinetown</b>
<b>No of educators</b>	16	10	20

*Table 27: Number of educators who participated in the research for each campus*

To view the comparison of the stress and wellness dimensions for the educators of the various campuses Table 28 has been provided.

<b>DIMENSIONS</b>	<b>KWAMASHU (mean)</b>	<b>NTUZUMA (mean)</b>	<b>PINETOWN (mean)</b>
<b>ROLE OVERLOAD</b>	56.13	56.00	53.80
<b>ROLE INSUFFICIENCY</b>	53.06	53.40	51.35
<b>ROLE AMBIGUITY</b>	59.50	55.50	52.95
<b>ROLE BOUNDARY</b>	53.50	54.60	46.50
<b>RESPONSIBILITY</b>	58.69	47.30	46.45
<b>PHYSICAL ENVIRONMENT</b>	53.13	55.90	44.15
<b>PSYCHOLOGICAL WELLNESS</b>	20.25	22.50	22.63
<b>EMOTIONAL WELLNESS</b>	20.31	22.60	23.79
<b>SOCIAL WELLNESS</b>	22.19	23.00	25.16
<b>PHYSICAL WELLNESS</b>	22.31	24.40	22.95
<b>SPIRITUAL WELLNESS</b>	23.25	23.70	24.47
<b>INTELLECTUAL WELLNESS</b>	20.88	23.20	22.74
<b>FINANCIAL WELLNESS</b>	18.57	19.90	15.26

*Table 28: Descriptive statistics for the educators of the different campuses*

This table (Table 28) illustrates that all the campuses fall within the normal stress range according to Osipow (1998). However the average educator from Kwa Mashu campus is bordering on the line for mild maladaptive levels of stress for role ambiguity (mild maladaptive stress is anything between 60T and 70T) (Osipow, 1998). In comparison the educators at Ntuzuma appear to feel the most stress as a result of role overload (mean score of 56.00) (Table 28). Nevertheless all the scores for the stress dimensions are still within the normal range. Finally with regard to the Pinetown campus, the educators here state that their biggest cause of stress is due to role overload (mean = 53.80). It is however also evident that in general their stress levels are lower in all the dimensions than those of the educators on the other two campuses.

With regard to the wellness dimensions, the educators at Kwa Mashu and Ntuzuma campuses display evidence that they have the highest level of wellness in the spiritual dimension (Table 28). The highest wellness dimension for the educators at Pinetown campus is in the social dimension (mean = 25.16) (Table 28). Generally the educators at Pinetown campus score the highest level of wellness in all of the dimensions except for physical and financial wellness.

#### 4.5.3 Educator campus comparison based on gender

This section allows for comparison of the female educators from each campus and the male educators from each campus. This analysis is provided to add support to findings above. It is based solely on gender as these were the groups where there are the largest numbers and therefore results can be more representative.

##### 4.5.3.1 Educator campus comparison based on female educators

Only Kwa Mashu and Pinetown campuses are included here as only male educators from Ntuzuma participated in the research. The highest dimension for stress at Kwa Mashu for the female educators is role overload (mean = 68.00) (Figure 9). Not far below this is the stress dimension for responsibility (mean = 67.00) (Figure 9). Although this is only for 4 educators it does suggest that the female educators at Kwa Mashu may be suffering from stress, as these scores, although still within the mild levels of maladaptive stress (60T-69T), are bordering on the category of a strong probability of maladaptive stress, debilitating strain, or both (this would be at 70T and above) (Osipow, 1998). The female educators at Pinetown campus are less stressed and all dimensions fall comfortably in the normal range for stress (Figure 10). Their highest cause of stress is however also role overload (mean = 55.00). These scores must

be accepted with caution as the samples are small and therefore further examination is required to reach a more reliable and valid conclusion.

In terms of wellness it can be evidenced that the female educators at Kwa Mashu campus rated their highest level of wellness in the physical domain (mean = 28.00) (Figure 9). For the Pinetown female educators it was the social domain that emerged as the highest scoring wellness dimension (mean = 25.00) (Figure 10). The results suggest that, in general, the female educators at Pinetown campus have higher levels of wellness than the female educators at KwaMashu campus.

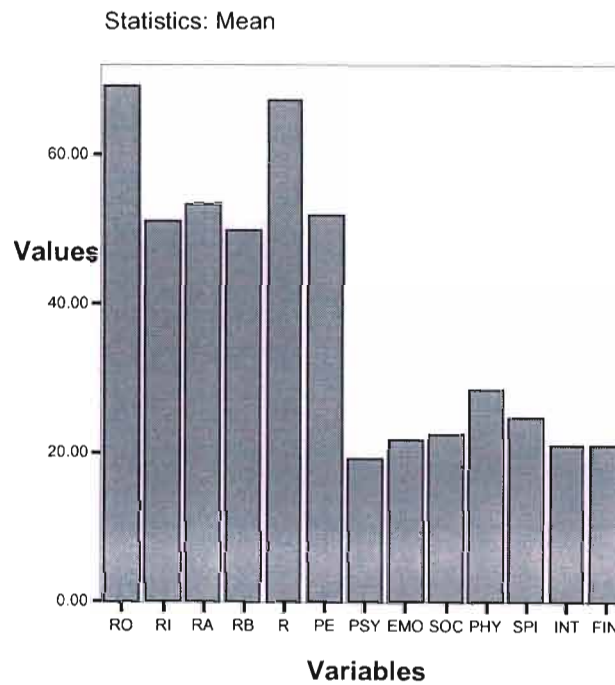
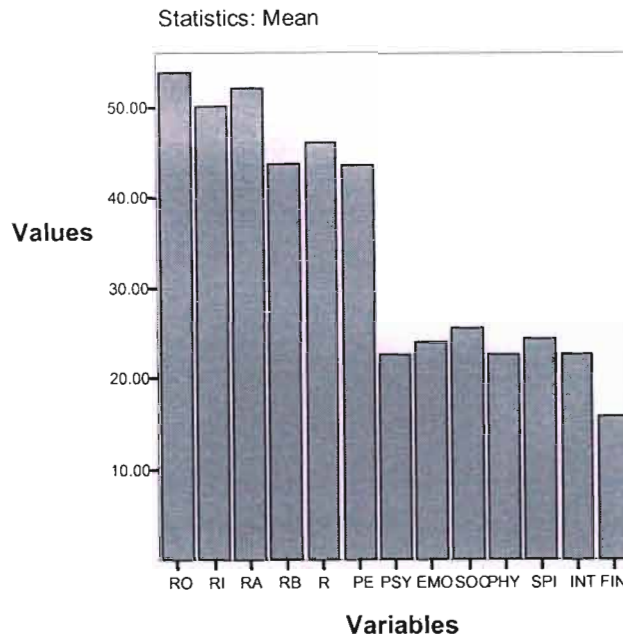


Figure 9: Bar graph comparing results for female educators at the KwaMashu campus



*Figure 10: Bar graph comparing results for female educators of Pinetown campus*

#### 4.5.3.2 Educator campus comparison based on male educators

With regards to comparison between the male educators there are three campuses to compare, as Ntuzuma can now be included. The male educators at KwaMashu campus rate role ambiguity as the highest cause of stress with a mean score of 61T (Figure 11). This falls just inside the mild levels of maladaptive stress (Osipow, 1998). In comparison the male educators from Ntuzuma campus state that their highest cause of stress is from both role ambiguity and the physical environment (Figure 12). However all the scores on the stress dimensions fall within the normal range (Osipow, 1998). The male educators at Pinetown campus also differ in that their highest level of stress is a result of role boundary (Figure 13).

It would appear that the male educators at KwaMashu score the lowest in terms of the wellness dimensions except for the financial dimension which is lowest for the Pinetown male educators.



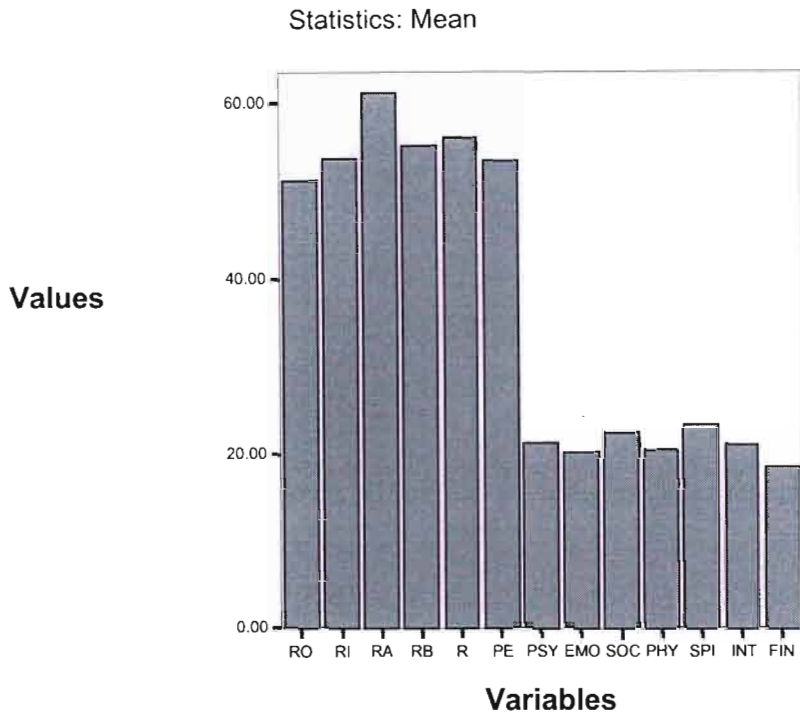


Figure 11: Bar graph comparing results for male educators of KwaMashu campus

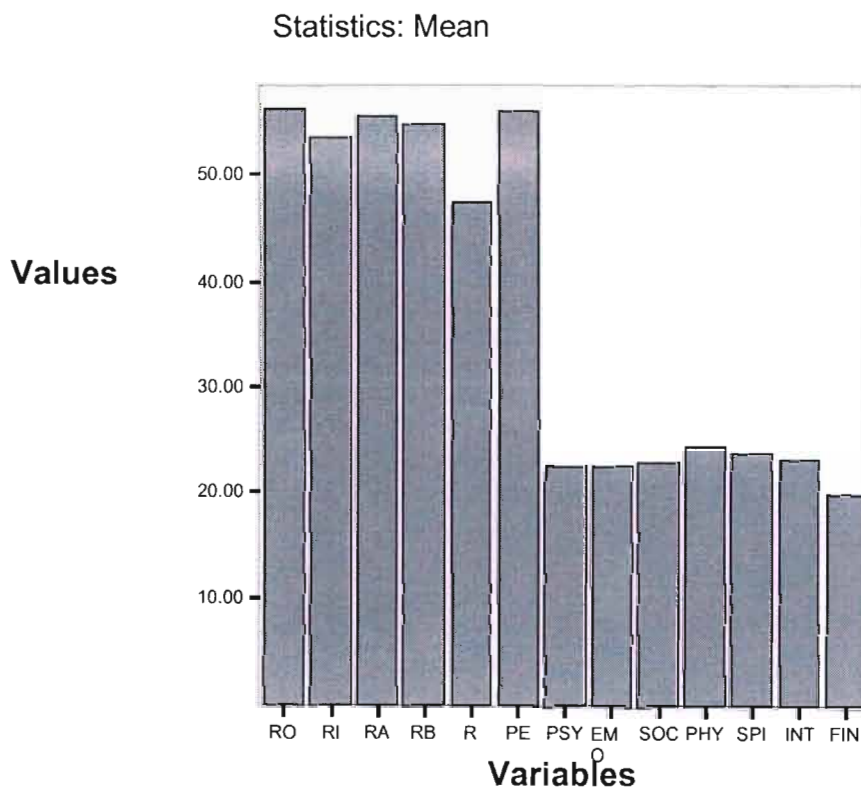
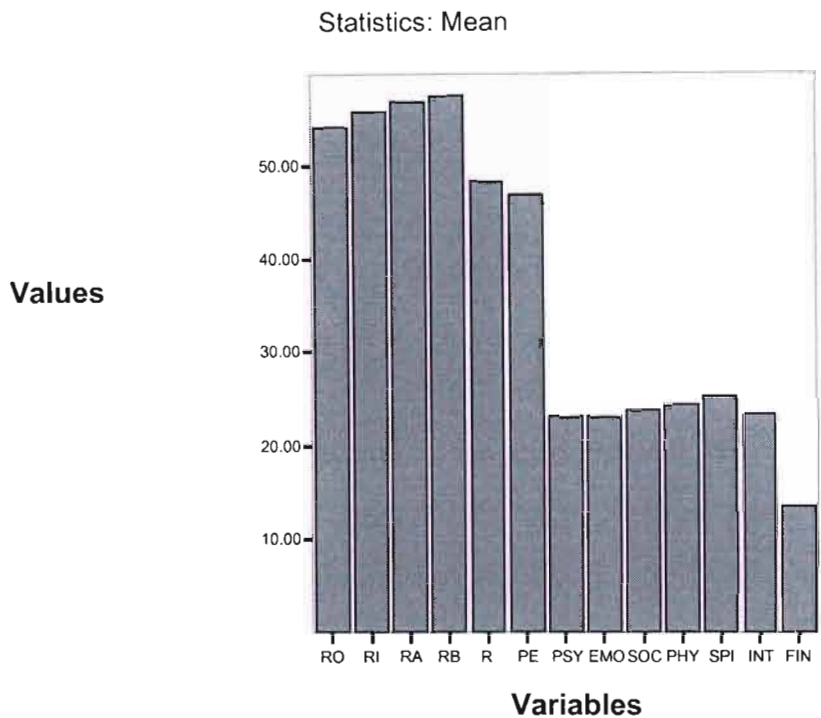


Figure 12: Bar graph comparing results for male educators of Ntuzuma Campus



*Figure 13: Bar graph comparing results for male educators of Pinetown campus*

**4.6 Comparison between those employees who exercise, eat healthy and have overall health with those employees who do not exercise, eat healthy and have overall health**

A final comparison was done to determine if there was a significant difference between those employees who exercise, eat healthily and perceive themselves to be healthy overall and those employees who do not exercise, do not eat healthily and do not perceive themselves to be generally healthy (Table 29). There is a large difference in the levels of stress of these two groups. Those employees who exercise, eat healthily and perceive themselves to have good overall health consistently have lower levels of stress in all the dimensions compared with the group who are predominantly unhealthy. In fact the group of employees neither exercise, nor eat healthily, nor have good overall health, have levels of stress either within the maladaptive range of stress (60T-70T) or are bordering on this level (Osipow, 1998).

Interestingly there is no clear pattern between the groups in respect of the dimensions of wellness (Table 29). There is a large difference, however, between those who are healthy and

those who are not on the physical wellness dimension (mean = 24.12 and mean = 16.67, respectively).

<b>DIMENSIONS</b>	<b>EXERCISE, EAT HEALTHILY, OVERALL HEALTH (mean)</b>	<b>NO EXERCISE, EAT UNHEALTHILY, POOR OVERALL HEALTH (mean)</b>
<b>ROLE OVERLOAD</b>	52.73	65.00
<b>ROLE INSUFFICIENCY</b>	53.08	59.33
<b>ROLE AMBIGUITY</b>	55.62	59.67
<b>ROLE BOUNDARY</b>	49.88	65.00
<b>RESPONSIBILITY</b>	46.85	62.33
<b>PHYSICAL ENVIRONMENT</b>	50.15	60.00
<b>PSYCHOLOGICAL WELLNESS</b>	22.56	19.67
<b>EMOTIONAL WELLNESS</b>	23.40	22.33
<b>SOCIAL WELLNESS</b>	23.44	24.33
<b>PHYSICAL WELLNESS</b>	24.12	16.67
<b>SPIRITUAL WELLNESS</b>	23.72	24.33
<b>INTELLECTUAL WELLNESS</b>	22.44	25.33
<b>FINANCIAL WELLNESS</b>	16.44	17.00

*Table 29: Comparison of employees for exercise, eating habits and overall health*

#### **4.7 Conclusion**

In conclusion the results predominantly suggest that the stress levels for the staff at Sivananda FET College are within the normal range while the wellness levels are generally above the mean. There is also evidence of there being a negative relationship between many of the dimensions of stress and wellness. None of the various groups that were used for comparisons show any extreme differences. On the whole, Pinetown campus appears to have the lowest levels of stress and the highest levels of wellness while the male staff members, across the College, seem to have higher stress levels than the female staff. In addition those employees who perceive themselves to be healthy (in terms of exercise, nutrition and overall health) display lower levels of stress. Explanations for these results will be provided in the following chapter. The results will be explained using existing literature to support or refute the findings.

## CHAPTER FIVE

### DISCUSSION

#### 5.1 Introduction

The discussion takes the reader through an explanation of the main findings derived from the results section. To gain an understanding of what the results imply, they will be linked to, supported by or refute the literature on this topic. Furthermore, the discussion intends to achieve the aim of the project which is to explore the relationship between stress and wellness. At various intervals in the discussion possible explanations for the results, based on tentative observations at the College, are provided. As stated, these are only possible explanations and more research is needed to determine the plausibility and fact value of the explanations.

The discussion will be presented according to the order of the dimensions of stress and wellness which have been used throughout this project. By screening the results within the discussion, an understanding of the interdependent impact of all the various dimensions (such as gender, role, eating habits, and perception of health) can be acquired.

The factor analysis which was conducted using all the results illustrates four predominant underlying dimensions for stress and wellness. The four factors include stress, wellness, role insufficiency and financial wellness. These findings increase the validity of this research as they inform the reader that there is a correlation between the various dimensions of stress, save for role insufficiency, and also a correlation between the various dimensions of wellness, save for financial wellness, for the employees of Sivananda FET College. However, the results from the factor analysis do not answer the central question of the research – the relationship between stress and wellness. The bivariate correlations were used for this purpose.

#### 5.2 Stress at Sivananda FET College

Consistently the results for the College as a whole, as well as for the individual groups, suggest that there is not a large concern with stress amongst the employees who participated. This conclusion is drawn from the fact that the scores predominantly fell in the ‘normal range’ for stress (between 40T and 59T) (Osipow, 1998). At this point, however, some of the cautions in understanding the results should be noted. Firstly, ‘normal range’ is what Osipow (1998) contends is normal in that all the scores are within one standard deviation of the mean

of the normative sample. A participant who scores in this range is considered to have standard levels of occupational stress. This then leads to the second caution: the normative sample consists of an extremely western, American sample. The third caution is that the stress scores are only for six dimensions of stress. Therefore, the participants may be stressed but not on the dimensions assessed. All of these cautions will influence the understanding of the results; particularly as the results appear counter-intuitive.

Nevertheless, the assumption is that the most common stress scores for all groups are for either role ambiguity and/or role overload. According to the definition of these two dimensions, the employees of Sivananda FET College, are assumed to be stressed owing to their job demands exceeding their personal and workplace resources, this then impacts on the degree to which they can accomplish their workloads (Osipow, 1998). In addition the employees appear to be stressed as they are not clear on what their priorities, expectations and evaluation criteria are (Osipow, 1998).

The female participants consistently appear to be stressed as a result of role overload whereas the men appear to be more stressed from role ambiguity. A plausible explanation for the female participants may be that they have other commitments to concern themselves with besides their work, such as informal expectations (raising children; house work) (Cartwright & Cooper, 1997). The mean age of the female participants is 42 which may be considered the age for having teenage children who require much of the parent's time as they are not necessarily old enough to do certain things by themselves, for example drive. Therefore their personal resources may be stretched between work and home. This work-family balance is cited as being more stressful in dual-career families which could give an indication of the higher stress levels for males in the role ambiguity dimension (Cartwright & Cooper, 1997). Males have predominantly been considered the parent who works and brings in the money. However, due to the increase in the number of working women, men are taking on more family responsibility (Williams, 2003). Therefore they may experience a sense of uncertainty as to whether their priorities should be at work or at home. Furthermore at Sivananda College, the impression was gained that the male employees passed much of their work to the female employees. This was observed predominantly at the KwaMashu campus on various occasions. A credible explanation for this – the cultural belief that the women do the menial work while the men carry out, what is considered, the more significant role. Therefore the male

employees pass the more administrative duties onto the female staff who then become overloaded as they have their own roles to perform as well as those of other employees’.

In general the physical environment (the individual is exposed to high levels of environmental toxins or extreme physical conditions) was the lowest cause of stress (Osipow, 1998). However, for the male educators at Ntuzuma Campus this was one of the highest causes. The logical reason for this would be that these educators are working in workshop situations where they teach subjects such as mechanics, building and plumbing which could result in high levels of noise and a dirty environment.

All the significant maladaptive, or bordering on maladaptive, results for stress were for KwaMashu campus. These results were for role ambiguity, role overload and responsibility (the individual has, or feels, that they are responsible for the performance and welfare of others when on the job) (Osipow, 1998). These results may have been obtained because this is a larger campus in terms of student numbers as it comprises of a high school and not only a further education and training college; it was perceived (this was only through informal conversation and therefore is not necessarily true) that the campus has been through high levels of turmoil and disorganization; there have been a number of changes in the heads of the campus due to a death and employees stepping down from their senior positions and finally, there have been a number of COSATU strikes recently which have also affected the employees’ attendance at work.

The Pinetown campus consistently had the lowest levels of stress when compared with the other campuses. Furthermore, the Pinetown campus has predominantly white employees where-as KwaMashu and Ntuzuma campuses have predominantly Black employees. Helman (2001) contends that the degree to which human beings experience stress and react to various stressors is intricately linked to their individual culture. Therefore the fact that Blacks find their occupational roles more stressful than do whites, may be linked to their culture. Alternatively, the occupational role questionnaire may not have been sensitive to cultural differences, and more importantly, the many different South African cultures. This is not to say that our race determines our culture as race only constitutes a minimal amount of a person’s entire culture (Sunde & Bozalek, 1993), nevertheless, there could be some relationship between the variables of culture and stress. The conclusion cannot be drawn that the Pinetown employees are definitely less stressed than the employees from the other

campuses, only that their culture may be more in line with the sample population that the test was normed on. Thus, culture does not necessarily determine the stress level but how the different groups' experience and manifest this construct.

Alternatively, the difference in the campus stress levels may be the result of the campus culture or environment which impacts on the stress levels. Important to the environment of the organisation is the organisational structure. The organisational structure refers to the task and reporting relationships that the employees use to achieve their goals (Jones, George & Hill, 1998). It has been found that a flat structure is more positively perceived by employees as they have a higher level of autonomy and less close supervision. The degree of value placed on autonomy is, however, person specific and therefore this is only a general conclusion and not a universal conclusion, applicable to all people. This structure requires more of a supportive kind of management in comparison with the directive form of management needed when the employees are having trouble completing tasks and performing appropriately (Jones et al., 1998). At the Pinetown campus the culture is more relaxed and supportive as the employees value the autonomy and perform their work with little problem and without the need of a directive supervisor. On the other hand while the employees at KwaMashu, may value autonomy owing to their behaviour, they require a more directive form of leadership which has been known to cause stress (Jones et al.). Their behaviour was witnessed, on many occasions, to be characteristic of coming late to work, poor attendance at meetings and missing important and necessary deadlines. Therefore, they must be more directed by management as they can not be left to perform on their own.

Lazarus and Folkman (1984, as cited in Matthews, 2001) contend that the appraisal of a possible stressor is mediated by the environment and the subjective person. That is stress results not from just the environment or just the person, but from a certain environment in combination with a certain person. Thus, as stress is conceptualised, understood and experienced differently by every individual, one person may perceive the form of organisational structure as stressful while another may not. Therefore, this may explain the variability in the scores for the various dimensions of stress between gender, culture and campus. It can be concluded therefore, that the difference in the campus stress levels may be a result of the combination of the individual employee's culture and the context in which they work. These factors influence the employee's perception which then determines their stress levels.

One of the more common occupational theories of stress, the person-environment fit theory, alludes to the interdependent concept of stress within an organisational setting. The assumption of the person-environment fit theory is that stress is not the result of just the person or just the environment but instead influenced by the degree of congruence between these constructs (Edwards et al., 2000). That is, if there is low congruence between the person and the environment then stress is more likely to occur. This theory makes a number of distinctions, one of which considers two different types of person-environment fit: the fit between the demands of the environment (for example job requirements) and the person's abilities (for example whether the person has the skills to meet the demands of the job) and the fit between the needs (biological and psychological requirements) of the person and whether there are supplies (extrinsic and intrinsic resources to fulfil these needs, for example money) in the person's environment to meet these needs (Edwards et al., 2000).

In the light of the first type of person-environment fit, the fit between the demands of the environment and the person's abilities, certain of the results for the Sivananda employees can be explained. The predominant causes of stress for the employees were due to role overload and role ambiguity. Role ambiguity and role overload can be explained in terms of both the 'person's abilities' category and the 'demands of the environment' category. According to the person-environment fit theory this explanation would translate into not having the personal and/or environmental resources to cope with the demands placed on them and in addition their working environment would be characterised by unclear expectations and evaluation criteria. Thus owing to their personal characteristics and their environment these employees are, according to the person-environment fit theory, stressed for common occupational stress reasons. In addition, according to Cartwright and Cooper's (1997) stimulus-based model of stress, role ambiguity and, even more so, role boundary are two of the more common dimensions of occupational stress. The reason for role overload becoming more evident, presently in organisations, is because of the increase in global competition, reorganisation of the companies (mergers and acquisitions) and in the process redesigning of the job (Cartwright & Cooper, 1997). With specific reference to educators, role overload as well as lack of recognition (from poor evaluation criteria) have been found to be, internationally, two of the most common sources of stress for educators in the tertiary and further education sector (Gillespie, Walsh, Winefield et al., 2001 in Winefield, 2002). Within South Africa, specifically with regard to educators, the increased workload and job overload are ranked as some of the highest reasons for dissatisfaction and high levels of stress (Hall et al., 2005).



The results suggest that those employees who eat healthily are less stressed than those who do not, those who are healthy are also less stressed than those who are not, those who exercise are less stressed than those who do not, and, finally employees who exercise and eat healthily and are healthy overall are less stressed than those who do not exercise and who do not eat healthily and who are not healthy overall. There is no indication of the direction of these relationships, as this information could be obtained only over a longitudinal study of the employees. Also, these findings are only as a result of a correlation and therefore do not suggest causality between the constructs. For example employees who are less stressed may just be able to find more time to exercise and eat healthier meals, rather than these variables actually leading to a decrease in stress levels. In other words the results do not provide evidence of whether the employees were stressed first and then stopped eating healthily, exercising and feeling healthy, or whether the employees stopped exercising, eating healthily and feeling healthy and so became stressed. The same can be said for the relationship between low stress and the healthy employees. Furthermore the results cannot provide evidence of whether there is any relationship between stress and these other constructs; however it would appear that there is a relationship as there is such a difference between the healthy employees and the unhealthy employees. Nevertheless, if it is assumed that there is a relationship then the results can fit neatly into the second part of the stimulus-based model of stress by Cartwright and Cooper (1997).

The second part of the model states that stress can lead to biological, affective and behavioural problems of which not exercising, feeling unhealthy and not eating properly could constitute aspects of these problems (Drafke & Kossen 2002). With regard to educators within South Africa, it has been determined that in public schools the most frequent diagnosis for educators who have consulted a doctor is due to stress-related illnesses such as high blood pressure (15.6%), stomach ulcers (9.1%) and diabetes (4.5%) (Study of demand, 2005). This model does not however state the direction of the relationship but only that there is a correlation. The high levels of stress could impact further on the stress levels. In other words it becomes a cycle. Those employees who are feeling stressed and who are not having some form of relaxation such as exercising or eating healthily (both of which have been stated in the literature to be moderators of stress) (Detherage & Mandle, 1998), may then start to behave differently. For example, they may not feel as though they can complete their work as their emotions are ones of a low sense of accomplishment (role overload); this may in turn lead to them feeling that they do not possess the necessary skills to perform their jobs (role

insufficiency). If they are feeling ill they may be absent regularly and therefore their stress levels are high due to their role boundaries as they are torn between their personal priorities and their job priorities and what is expected from them at work (role ambiguity). These forms of behaviour and emotions may then lead to higher levels of stress. This gives an indication of how all the dimensions could possibly be interrelated.

Lastly it is important to note that the dimensions of stress do not appear in isolation from each other. Although the relationships vary between the dimensions for the various groups in the research, if any of the correlation tables are viewed, there is evidence that there are many positive correlations between various stress dimensions: as one area of stress either increases or decreases so too do other areas of stress. This illustrates the interdependence of the stress dimensions. Osipow (1998) supports this finding as he contends that stress is not a linear construct in that it is the result of many interacting stressors which may illicit a stressful response for the employee (Osipow, 1998). To illustrate this interaction, the correlation table for all the participants will be used (Table 5). This table states that role boundary has a 99% correlation with role overload, role insufficiency, responsibility and the physical environment, with a 95% correlation with role ambiguity. Thus all the dimensions are significantly correlated to role boundary. For example an employee of Sivananda may be finding it difficult to complete their work as the demands of the job are exceeding their resources (role overload) and therefore is finding that their various roles are conflicting as they cannot perform all the necessary roles (role boundary). Furthermore, they may not have had the necessary experience to perform all the various roles as they spend too much time trying to understand each one (role insufficiency) which again could lead to conflict over which role to focus on. In addition, the employee may be responsible for other employees (responsibility) and is finding it difficult to balance this role with their other roles. If, in addition to all these personal job conflicts, the employee is surrounded by noise this may impact on the employee trying to work and resolve the conflicts (work environment). This is just a fictional indication of how the dimensions of stress could be related for an employee.

Therefore the results, with regard to stress for the educators of Sivananda FET College, are supported by and fit neatly into the selected theories of stress. In addition the results also parallel other recent research on educators throughout South Africa and replicate the findings that Hall et al. (2005) produced.

### 5.3 Wellness at Sivananda FET College

The predominant finding for the wellness construct in respect of this specific research population is that spiritual wellness is scored as the highest level of wellness. The other high wellness areas include social and physical wellness. Also, consistently, financial wellness was scored as the lowest level of wellness. Although there were no extremely high levels of wellness all the wellness scores, except for the scores on the financial dimension, were well above mean. This is in line with the global trend that people are concentrating more on staying healthy in all areas of their lives rather than trying to fix a problem when things go wrong (Crabb, 2004). This approach is however further influenced by an individuals, culture and belief of what is healthy as well as the degree to which they have access to, for example, effective health care systems and exercise facilities. To support these findings relevant literature will be cited.

Those employees who stated that they did some form of exercise showed higher levels of wellness than those who do not exercise. These findings were in all the dimensions except for financial wellness. A possible explanation is that those employees who are participating in exercise have to pay for this exercise which could impact on their financial position. Exercise can become costly, whether it is the fees for the gym you are attending or the running shoes you have to buy.

Also, those employees who are healthy eaters showed higher levels of wellness than those employees who are not healthy eaters. Again these findings were consistent except for the social wellness dimension where the scores were lower for those employees who eat healthily. Social wellness incorporates the perception of having support available from family or friends in times of need and the perception of being a valued support provider (Adams et al., 1997). With regard to the employees who eat healthily, social wellness correlated negatively with role insufficiency and role ambiguity (Table 13). This means that those employees who have this low level of social wellness have higher levels of stress as a result of not having the skills to perform their jobs as well as they are not clear on their expectations. Thus the healthy eating habits may in actual fact have nothing to do with the social wellness level and may just have been coincidence. Alternatively stated, the degree to which employees eat or do not eat healthily may have no relevance to social wellness and the social wellness may be low or high based on a multitude of other factors. For example those employees who have low levels of wellness in all the other dimensions except for the social dimension may value their friends

and family highly as they perceive that none of the other dimensions are 'well' in their personal lives.

In general those employees who perceive themselves to be generally healthy are the same employees who have higher levels of wellness than those who do not. The only dimension which differed on this was the intellectual dimension. Intellectual wellness is considered to be the perception of being internally energised by an optimal amount of intellectually stimulating activity (Adams et al., 1997). In trying to explain this, the researcher suggests that those employees who have high levels of wellness in all the other dimensions do not set aside adequate time for intellectually stimulating events. For example they may be too focused on physical wellness (the mean score for the healthy employees was 23.36 where as for the unhealthy employees it was 17.22 – Table 15) than on spending time reading. However, the difference in the intellectual wellness results was only 0.70 different (Table 15) which could have been a result of the difference in sample numbers between the groups. Therefore this explanation may not be correct.

There was no consistency in the comparisons between the male and female educators in respect of wellness. This may be due to the more modern and westernised perception that males and females are equal in all areas of life. Therefore, the females also focus, for example, on their physical and intellectual wellness (Corbin & Lindsey, 1997). It is no longer their position to remain inferior to men in these areas while being predominantly a child raiser.

When discussing the findings on stress it was noted that the employees of the Pinetown campus have lower levels of stress when compared with the other campuses. The results for wellness state that these same employees have higher levels of wellness than those employees from the other campuses (Table 26). A possible explanation for this could be that individuals' personality differences are affected by the environment in which they live (Nolen-Hoeksema & Rusting, 1999). Thus, what constitutes wellness is socially and culturally determined. Therefore this finding in difference between Pinetown and the other campuses may be due to the better working and living conditions in which these employees survive. As Adams et al., (1997) contend any models of wellness must or should include cultural, environmental and or organisational factors. In addition the Perceived Wellness Scale is normed on a westernised American population. As the employees at the Pinetown campus are predominantly from the traditional South African, westernised white population their wellness levels may be better

measured by this survey. For those employees at the other campuses, predominantly Black employees, their wellness levels might be higher were different wellness dimensions to be measured or was each dimension to be focused on different aspects. For example a characteristic of African society is that it values and relies on others as an influencing factor in having a high level of wellness and also causing illness (Mkhize, 2004). This could be linked to the findings by Wissing & van Eeden (2002), in conducting research on psychological wellness in South Africa. They noted that Black South Africans' scored lower on certain aspects of psychological well-being than White South Africans. In respect of this research the results also show that the employees at KwaMashu and Ntuzuma campuses received lower scores for psychological wellness than the employees at Pinetown campus.

The difference in scores could be attributed to the questions used to measure psychological wellness. The six questions relating to psychological wellness in the Perceived Wellness Survey are based on individual perceptions and do not involve the effect that others could have on this dimension of wellness. Certain African societies would however believe that others in the community could impact on their psychological wellness. For example the first statement on psychological wellness is: 'I am always optimistic about my future'. If the question had stated, for example, 'I am always optimistic about my future, provided I do well for my community' there may have been higher scores for those African employees. Thus the test may not be reliable and valid for a South African population.

The results showed that there was very little consistency between those employees who were generally healthier, in terms of exercising, eating healthily and overall health had higher levels of wellness than those employees who are not this way inclined (Table 29). More over the evidence suggests that those employees who do not consider themselves healthy have higher wellness scores as they score higher in four of the seven dimensions. However, there is no clear indication as to whether the combination of these variables within a person has an affect on their wellness levels. The wellness dimensions in which the healthy employees did score higher levels include psychological, emotional and physical wellness. There is no means of deducing from these results whether the employees have high levels of wellness which leads them to exercise and eat better, or whether those employees who eat better and exercise regard themselves as having high levels of wellness. What can be deduced is that there is a relationship between the chosen factors and certain wellness dimensions. In other words these results can be looked at from a systems perspective as Adams et al. (1997),

suggests. A system perspective states that each part of the system is an independent system but also an essential component of the larger system. Dunn (1961 as cited in Adams et al., 1997) stated that an individual requires all the wellness dimensions to function for homeostasis to be maintained. A change in one dimension will initiate adaptation in other dimensions as all the dimensions are interrelated and equally dependent on each other. A systems perspective diagram can be used to explain those employees who are generally healthy (Figure 14).

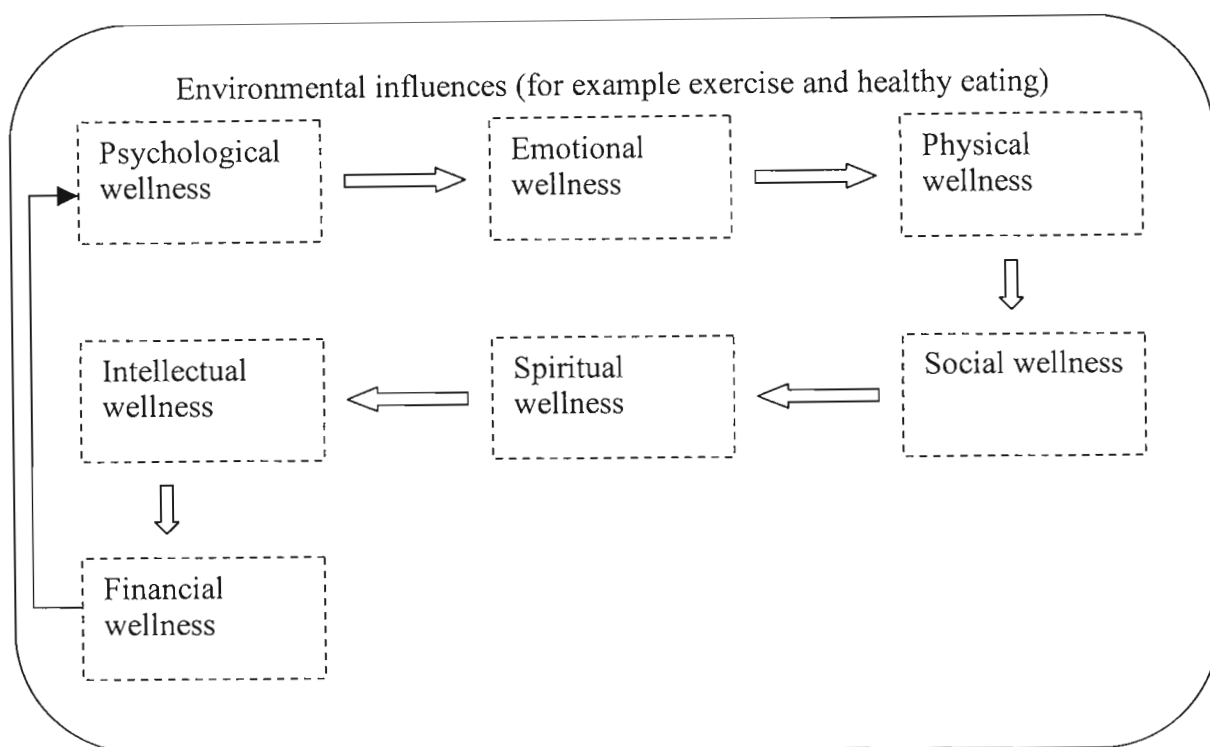


Figure 14: A systems perspective for those employees who eat healthy

This diagram portrays an extremely simplified system for a possible explanation for those employees who eat healthily at Sivananda FET College. It must be remembered that in reality the different dimensions are all interrelated and have a large impact on each other as well as each of them being heavily influenced by the external environment (Adams et al., 1997). However, for easier understanding, this simple diagram will be used. The employee has a high level of psychological wellness in that they experience outcomes of events in life in a positive manner. Owing to this positive view they also have a high level of emotional wellness as their self-esteem is intricately entwined into the events in their life which are positive. Owing to their positive thoughts and moods they view themselves as healthy and they have the energy to participate in exercise. However, they have neither the support of their family, nor the

belief that there is some greater power that helps them to make sense of the world, thus these levels of wellness are low. Furthermore, they are so involved in their self-esteem and physical self that they do not pay much attention to intellectual wellness such as reading or administrative duties such as organising their finances and therefore their levels of wellness are also lower in this area. If this situation were to continue the low financial wellness and the loss of family support could begin to affect the high levels of wellness. This is only a hypothetical illustration of the systems perspective of the dimensions of wellness.

The dimension of wellness that was consistently at a high level was spiritual wellness. Globally spirituality is increasingly being considered as an important dimension to people's overall health (Toronto Star, 2005, p.10). Spirituality is defined as, "a belief in a unifying force, an integrative force between the mind and body, or as a positive meaning and purpose in life" (Adams et al., 1997:210). Thus spirituality, with regard to wellness, does not necessarily have to be the belief in a greater power but rather having a personal understanding of why you are who you are and how you fit in society. Many of the participants at Sivananda may have this sense of where they fit in society, not because of choice, but because of the imposition of the environment when they were growing up. The average age of the participants is 41 which suggests that many of these participants chose their careers during times of race and gender oppression. At this time one of the few career fields available to African people and females was teaching (Crankshaw, 1997). Thus, their place in society was culturally, socially and legally defined and because of these limitations they know where they fit in society (Crankshaw, 1997).

Social wellness was also noted as one of the higher levels of wellness, especially amongst the staff at Pinetown campus. Traditionally in research, social support, and more specifically the emotional aspect, that is, the emotional concern people feel for each other, has been found to be the most important wellness dimension (House, 1981 in Williams & House, 1985). This may be regarded as an important dimension within some of the African cultures as they value social support highly and believe that they need others to survive (Mkhize, 2004). This is interesting however, in that the results are higher for the employees at the Pinetown campus, who are predominantly white. This result may be due to the wording of the questions. The questions pertaining to the social dimension of wellness focus predominantly on family and friends (Adams et al., 1997). The researcher is not implying that family and friends are not important to African people, on the contrary, they are more important than the questions

express. The African culture considers the entire community as family and African people rely heavily on the support of their communities at all times and not just in times of trouble (Mkhize, 2004). This further illustrates that the Perceived Wellness Scale may not have been the most appropriate measure, or it should be normed on a South African population before use on a population of this nature.

Evidence from research into well-being shows that paid employment has a considerable impact on the well-being of the majority of adults (Warr, 1999). Adults hope to gain, from employment, aspects such as an income and satisfaction from their job. Although all the employees that participated in the research are being paid for their work they still scored very low on the financial dimensions of wellness. Furthermore this was one of the areas noted in the study by Hall et al., (2005) as one of the highest causes of dissatisfaction and stress for educators in South Africa. Thus the employees at Sivananda exhibit that they are not content with their financial situation which supports the trend amongst educators throughout South Africa.

In computing the correlations for the wellness dimensions, for example in Table 5, the results suggest that the dimensions of wellness are integrated. Furthermore, these integrations are positively correlated in nature. In other words, as one wellness dimension changes so too do various other wellness dimensions, in the same direction. This finding can be supported by a definition of wellness by Corbin and Lindsey (1997:5), who state that wellness, is “the integration of all parts of health and fitness (mental, social, emotional, spiritual, and physical) that expand one’s potential to live and work effectively and to make a significant contribution to society. Wellness reflects how one feels (a sense of well-being) about life as well as one’s ability to function effectively.” Baltus (1988) also supports this concept of interrelatedness and states that when one of these dimensions is experiencing problems then it affects the individuals’ total well-being.

Although there was no consistency in the degree to which certain dimensions are more correlated with other dimensions, it was noticeable that in a number of groups’ emotional wellness correlated negatively with financial wellness. In other words when one changes the other also changes but in the opposite direction. This can be illustrated by using the example of Table 17 which illustrates the correlations for those employees who do not perceive themselves as healthy. The employees who stated that they do not perceive themselves as



healthy and who have a high level of possession of a secure self-identity and a positive sense of self-regard (emotional wellness) (these constitute aspects of self-esteem) also have a low ability in managing their personal finances without incurring large debts (financial wellness). This is difficult to explain as there is not much literature on this and yet it is an interesting finding as it occurred more than once in the correlations. A possible explanation is that educators are not considered to earn the highest salaries and in other recent research have stated that this is one of the reasons for wanting to leave the education employment sector (Hall et al., 2005). Furthermore, it was unanimously the lowest wellness score throughout this research. However, to explain the negative correlation between financial and emotional wellness a focus can be placed on Argyle (1999). Argyle (1999) states that the effect of receiving an income or not receiving an income will have some form of impact on an individual, but, this impact will depend greatly on the degree to which the individual values money. The employees at Sivananda may have come to accept the salaries they earn. It cannot be concluded that they would not prefer higher salaries but that with accepting that this is what they are going to earn, they do not let their self esteem and identity be impacted on by their financial situation. Furthermore, it could be argued that money does not buy a high self-esteem and therefore people may have this high self-esteem without having money.

Thus in conclusion, with regard to the wellness of the employees of Sivananda FET College, their results are consistent with the concept of the interrelationships between wellness dimensions. Their low levels in the financial dimension reiterate the findings in a recent national study of educators, that educators' salaries are not considered adequate (Hall et al., 2005). The high consistent spiritual wellness level is somewhat interesting in that there has not been much research on this area previously; however it is in keeping with current global trends which show an increased focus on this wellness dimension.

#### **5.4 The relationship between stress and wellness**

To determine the relationship between stress and wellness, bivariate correlations were used. The results of the correlations are provided in Tables 5, 10, 11, 13, 14, 16, 17, 21, 22, 24 and 25 for the various selected groups. The overall most correlated dimension of stress with the wellness dimensions is role insufficiency. Out of the 11 groups selected for the bivariate correlations significant negative correlations were exhibited for four groups between role insufficiency and psychological wellness, for two groups between role insufficiency and

emotional wellness, for five groups between role insufficiency and social wellness, and for six groups between role insufficiency and spiritual wellness.

In the factor analysis, role insufficiency was found to be a factor all on its own (Table 7). Thus it appears that role insufficiency has an extremely significant negative correlation with the construct of wellness. More specifically when the appropriateness of an individual's training, education, skills and experience change in terms of their job requirements (role insufficiency) (Osipow, 1998), so too there is a 95% or greater chance that there will be a change in the opposite direction in terms of psychological wellness (general perception that one will experience positive outcomes to the events and circumstances of life), emotional wellness (possession of a secure self-identity and a positive sense of self-regard), social wellness (perception of having support available from family or friends in times of need and the perception of being a valued support provider) and/or spiritual wellness (a belief in a unifying force, an integrative force between the mind and body or as a positive perception of meaning and purpose in life) (Adams et al., 1997).

In reality this negative relationship could make sense. For example, an individual may have a high level of occupational stress as a result of not having the adequate skills and experience to perform the necessary requirements. This could then impact on their levels of wellness as they start to feel that life is not positive, their self-esteem may drop as they do not feel that they are good at their job and what they considered to be their purpose in life may no longer seem so. Furthermore, if their social support is not stable or existent the stress will generally have a larger impact on them (Helman, 2001 and Corbin & Lindsey, 1997). It must however always be emphasised that these stress, wellness relationships are dependant on the person's culture and beliefs (Persaud, 2004). For example, it may be the social supports that are the stressors, such as having parents that are HIV positive and therefore social support may not contribute to a high level of wellness. This is from the perspective that the stress occurs first. There is however no proof, from this research, that the stress does in fact come first and therefore it could be argued that low levels in the wellness dimensions makes an individual more susceptible to stress. Therefore someone with no social support and a negative view on life may feel as though they cannot perform their job well as they do not have the confidence to do this.

It is interesting to note that this research did not elicit any significant relationship between stress and physical wellness. This has however commonly been studied by theorists such as Myers et al., 2000 (as cited in Deggas-White et al., 2003). The reason may be that the participants in this research were not extremely stressed and generally had high levels of wellness.

A further correlation was found specifically for the administrative staff of Sivananda FET College. The interest in this correlation is because for this group the stress dimension of responsibility is positively correlated with the emotional, social and spiritual dimensions of wellness. This was the most significant positive correlation for all the groups between stress and wellness. This correlation means that when there is a change in responsibility there is also a change in the emotional, social and spiritual dimensions in the same direction. The administrative staff received a score for responsibility in the normal range for stress (mean = 53.38, Table 20). This relationship between stress and wellness sounds logical as it is supported by the concept of eustress (Seyle as cited in Drafke & Kossen 2002). Individuals value a degree of responsibility, the feeling that they have an impact on the performance of others (Hunter, 2000). Thus people, such as the administration staff, have a normal level of responsibility stress (the extent to which the individual has, or feels, a great deal of responsibility for the performance and welfare of others on the job) and therefore they may be at the level where they value the responsibility which impacts on the degree to which they have a high self-esteem, that they have the support from friends, family and the employees they are responsible for and they have a sense of meaning in their lives.

In viewing the relevant correlation tables there are other instances of correlations between stress and wellness. Thus the aim of the research, to explore the relationship between stress and wellness, was achieved in that it is evident that there is a relationship between these two constructs, however, the direction of this relationship remains unknown. This is specifically true for the employees at Sivananda FET College who participated in the research. Thus the project supports the scarce previous research on this topic. For example research conducted by Newton et al. (1996), Cartwright and Cooper (1997) and Corbin and Lindsey (1997). These researchers all contend that people who have a higher level of wellness have a lower level of stress.

### 5.5 Limitations to this study and suggestions for further research

Although the results for this research are to a degree significant in determining a relationship between stress and wellness there are also a number of limitations to this study and the resulting findings. However the findings provide an opening for further research to be undertaken to support and reaffirm the findings of this project.

The first limitation is that the sample size was small. This means that the results can be generalised only to the educators at Sivananda FET College. To gain more valid and reliable results future research should have a larger sample to gain a more significant understanding of the relationship between stress and wellness. A sample such as the one used by Hall et al. (2005) in their research on educators in South Africa would go much further in determining the relationship between stress and wellness and also work in relation to this recent study.

At this point it should be reiterated that the questionnaires used were not normed on a South African population or on educators. Thus the results used for the comparison from Osipow (1998) and Adams et al. (1997) may not be relevant to the South African sample used for this research. As has been mentioned, the environmental factors (culture and personality) impact on both wellness and stress and therefore what constitutes stress and wellness for these participants may be completely different from the populations that the studies were normed on and also between these participants. Therefore in no study of this nature can it be assumed that all participants experience and describe these constructs in the same way. It is important to never study these constructs in isolation but to include the broader environment.

In conducting the research there was a concern about the language of the questionnaires (Table 1). The majority of the participants do not use English as their first language and therefore they may not have completely understood all the questions. This concern rose during the administration of the questionnaires when participants asked for clarification on certain of the questions.

Although this research did give an indication that there is a relationship between stress and wellness the direction and nature of this relationship is not known. Thus the aim of the research, to explore the relationship, was to a small degree achieved, however further exploration is needed. Exploration should involve determining whether the constructs impact on each other and the degree to which they impact as well as the direction of this impact.

In further research stress and wellness should continue to be examined at the level of the individual. However, the role that the organisation plays in this relationship requires further examination. People spend a large amount of their time at work and therefore the work environment will invariably impact on both stress and wellness. Also within the constructs of stress and wellness both at and away from work there are many other possible dimensions which could be considered, in particular, more culturally relevant dimensions.

Finally, in future research, it is suggested that qualitative data be collected relating to the participants understanding of both stress and wellness. This will help support the quantitative results and will also help to overcome some of the other limitations. For example what other dimensions individuals find important in influencing their levels of stress and wellness.

## CHAPTER SIX

### CONCLUSION

The predominant aim of this research was to explore the relationship between stress and wellness. To discover this relationship a quantitative, structured questionnaire research method was used on employees of Sivananda FET College. Although the sample was small and the questionnaires were not normed on a diverse South African population the results did give some indication of the relationship between stress and wellness.

The literature regarding the constructs of stress and wellness is vast when considering them individually. There are many models and theories which can be used to gain a thorough understanding of these constructs. However, the literature on the relationship between these constructs is somewhat absent and superficial. Therefore this project was undertaken in an attempt to improve the understanding of this relationship.

To explore the relationship employees, predominantly educators, from Sivananda FET College were used. Out of a possible 139 participants 71 completed the questionnaires. These participants are diverse in terms of gender, age, culture and level of health. For the results these employees were broken down into their roles, gender, the degree to which they exercise, their eating habits and their perceived overall health. Various statistical procedures including, frequencies, descriptive analyses, correlations and factor analyses were run on the data.

The results of the research differed according to all the individual groups and comparisons. Furthermore, the results predominantly suggest that the stress levels for the staff at Sivananda FET College are in the normal range while the wellness levels are generally above average. There is also evidence of there being a negative relationship between many of the dimensions of stress and wellness. With caution it can therefore be stated that there is a suggestion of a relationship between stress and wellness. Consequently, the nature and degree of this relationship were not determined and further exploration needs to be conducted. This would entail a more in-depth study, including qualitative research, over a longer period of time and with more participants.

Other significant and interesting results were also obtained. For example the common high level of spiritual wellness as well as the differing scores from the campuses (although not explicitly determined this translates into cultural differences owing to the predominant differences in demographics of the employees at these campuses). These results provide the grounding and starting points for further research.

In conclusion the results of this research cannot be overlooked and ignored despite their limitations as they do provide a foundation for interesting future research. The degree, to which they inform a relationship between stress and wellness although existent, must be understood with caution. For any significant conclusions to be made on the relationship between stress and wellness, specifically in the direction and nature of this relationship, further studies must be conducted. This research provides the questions; the answers now need to be determined.

## References

- Adams, T., Bezner, J., & Steinhardt, M. (1997). The conceptualisation and measurement of perceived wellness: Integrating balance across and within dimensions. American Journal of Health Promotion, Inc, 11 (3), 208-218.
- Adams, T., Bezner, J., Garner, L., & Woodruff, S. (1998). Construct validation of the perceived wellness survey. American Journal of Health Studies, 14 (4), pp. 1-15.
- Aldana, S.G., Merrill, R.M., Price, K., Hardy, A., & Hager, R. (2005). Financial impact of a comprehensive multisite workplace health promotion program. Preventative Medicine, 40 (2), 131-137.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener & N. Schwarz (Eds.), Well-being: The foundations of hedonic psychology (pp. 354-373). New York: Russell Sage Foundation.
- Arnold, K.A., & Barling, J. (2003). Prostitution: An illustration of occupational stress in 'dirty work'. In M.F. Dollard, A.H. Winefield & H.R. Winefield (Eds.), Occupational stress in the service professions (pp. 261-280). London: Taylor & Francis.
- Baker, D.B., & Karasek, R.A. (1995). Occupational stress. In B.S. Levy & D.H. Wegman (Eds.), Occupational Health: Recognising and preventing work-related disease (3<sup>rd</sup> ed), (pp.381-406). Boston: Little, Brown & Company.
- Baltus, R.K. (1998). Personal psychology for life and work (3<sup>rd</sup> ed). New York: McGraw-Hill Book Co.
- Carroll, M. (1999). Workplace counselling: a systematic approach to employee care. London: SAGE Publications.
- Cartwright, S. & Cooper, C.L. (1997). Managing workplace stress. Thousand Oaks: SAGE Publications, Inc



- Cohen, J. (1998). Holistic health strategies. In C.L. Edelman & C.L. Mandle (Eds.), Health promotion throughout the lifespan (4<sup>th</sup> ed), (pp. 333-356). St. Louis: Mosby.
- Complete manual of fitness and well-being, the (1990). Cape Town: The Readers Digest Association South Africa (Pty) Ltd.
- Conway, C., & MacLeod, A. (2002). Well-being: its importance in clinical practice and research. Clinical psychology, 16, 26-30.
- Cooper, C.L. & Cartwright, S. (2001). A strategic approach to organisational stress management. In P.A. Hancock & P.A. Desmond (Eds.), Stress, workload and fatigue (pp. 235-248). New Jersey: Erlbaum Associates, Inc.
- Corbin, C.B., & Lindsey, R. (1997). Concepts of fitness and wellness: with laboratories (2<sup>nd</sup> ed). Madison: Brown & Benchmark Publishers.
- Crabb, S. (2004). Foreword: the PM guide to wellness at work. [On-line]. Available: <http://www.peoplemanagement.co.uk/pm/articles/forewordwellness>. Accessed: 10 February 2005.
- Crankshaw, O. (1997). Race, Class and the changing division of labour under apartheid. London: Routledge.
- Crute, S. (2004). Stressed out. NEA Today, 22 (4), 34-35.
- Degges-White, S., Myers, J.E., Adelman, J.U., & Pastoor, D.D. (2003). Examining counselling needs of headache patients: An exploratory study of wellness and perceived stress. Journal of Mental Health Counselling, 25 (4), 271-290.
- Detherage, K.S., & Mandle, C.L. (1998). Stress management & crisis intervention. In C.L. Edelman & C.L. Mandle (Eds.), Health promotion throughout the lifespan (4<sup>th</sup> ed), (pp.309-332). St. Louis: Mosby.

- Dollard, M.F. (2003). Introduction: Context, theories and intervention. In M.F. Dollard, A.H. Winefield & H.R. Winefield (Eds.), Occupational stress in the service professions (pp. 1-42). London: Taylor & Francis.
- Drafke, M., & Kossen, S. (2002). The human side of organisations (8<sup>th</sup> ed). New Jersey: Prentice Hall.
- Durrheim, K. (1999). Research design. In M. Terre Blanche & K. Durrheim (Eds.), Research in Practice (pp. 29-53). Cape Town: University of Cape Town Press.
- Durrheim, K. (1999). Quantitative analysis. In M. Terre Blanche & K. Durrheim (Eds.), Research in Practice (pp. 96-122). Cape Town: University of Cape Town Press.
- Edelman, C.L., & Fain, J.A. (1998). Health defined: Objectives for promotion and prevention. In C.L. Edelman & C.L. Mandle (Eds.), Health promotion throughout the lifespan (4<sup>th</sup> ed), (pp.3-24). St. Louis: Mosby.
- Eagle, G., Hayes, G., & Sibanda, T. (1999). Standpoint methodologies: Marxist, feminist and black scholarship perspectives. In M. Terre Blanche & K. Durrheim (Eds.), Research in practice (pp. 438-461). Cape Town: University of Cape Town Press.
- Edwards, J.R. (2000). Cybernetic theory of stress, coping and well-being: review and extension to the work and family. In C.L. Cooper (Ed.), Theories of organisational stress (pp. 122-152). Oxford: Oxford University Press.
- Edwards, J.R., Caplan, R.D., & Harisson, R.V. (2000). Person-environment fit theory: conceptual foundations, empirical evidence and directions for future research. In C.L. Cooper (Ed.), Theories of organisational stress (pp. 28-67). Oxford: Oxford University Press.
- Gatchel, R.J. (1996). Stress and coping. In A.W. Colman (Ed.), Companion encyclopedia of psychology, volume 1 (pp.560-579). London: Routledge.

- Hall, E., Altman, M., Nkomo, N., Peltzer, K., & Zuma, K. (2005). Potential attrition in education: The impact of job satisfaction, morale, workload and HIV/AIDS. Cape Town: HSRC Press.
- Hart, P.M., & Cooper, C.L. (2001). Occupational Stress: Toward a more integrated framework. In N. Anderson, D.S. Ores, H.K. Sinangil & C. Viswesvaran (Eds.), Handbook of industrial, work and organisational psychology. Volume 11 – Organisational Psychology. London: SAGE Publications Ltd.
- Helman, C.G. (2001). Culture, health and illness (4<sup>th</sup> ed). London: Arnold.
- Howell, D. C. (2002). Statistical methods for psychology (5<sup>th</sup> ed). Pacific Grove: Duxbury.
- Hunter, C. (2000). Managing people in South Africa (2<sup>nd</sup> ed). Pietermaritzburg: University of Natal.
- Jack, R. (2004). How to implement a wellness strategy. [On-line]. Available: <http://www.peoplemanagement.co.uk/pm/articles/howtoimplementawellnessstrategywellness>. Accessed: 10 February 2005.
- Jones, G.R., George, J.M., & Hill, C.W.L. (1998). Contemporary Management. Boston: Irwin/McGraw-Hill.
- Jonge, J., & Dorman, C. (2003). The DISC Model: Demand-Induced Strain Compensation Mechanisms in job stress. In M.F. Dollard, A.H. Winefield & H.R. Winefield (Eds.), Occupational stress in the service professions (pp. 43-74). London: Taylor & Francis.
- Kirk, A.A., & Brown, D.F. (2003). Employee assistance programs: a review of the management of stress and wellbeing through workplace counselling and consulting. Australian Psychologist, 38 (2), 138-143.
- Kompier, M., & Cooper, C. (1999). Introduction: Improving work, health and productivity through stress prevention. In M. Kompier & C. Cooper (Eds.), Preventing stress, improving productivity (pp.1-8). London: Routledge

- Levinson M.H. (2004). Managing organisational stress through general semantics. ETC: A review of general semantics, *61*(2), 245-253.
- MacLeod, A.K., & Moore, R. (2000). Positive thinking revisited: Positive cognitions, well-being and mental health. Clinical Psychology and Psychotherapy, *7*, 1-10.
- Manocha, R. (2004). Well adjusted. [On-line]. Available:  
<http://www.peoplemanagement.co.uk/pm/articles/welladjustedwellness>. Accessed: 10 February 2005.
- Matthews, G. (2001). Levels of transaction: A cognitive science framework for operator stress. In P.A. Hancock & P.A. Desmond (Eds.), Stress, workload and fatigue (pp. 5-33). New Jersey: Erlbaum Associates, Inc.
- McKee-Ryan, F.M., Song, Z., Wanberg, C.R., & Kinicki, A.J. (2005). Psychological and physical well-being during unemployment: A meta-analytic study. Journal of Applied Psychology, *90* (1), 53-76.
- Mkhize, N. (2004). Psychology: An African perspective. In D. Hook, N. Mkhize, P. Kiguwa & A. Collins (Eds.), Critical Psychology. Lansdowne: UCT Press.
- Newton, T., Handy, J., & Fineman, S. (1996). Managing stress-emotion and power at work. London: SAGE Publications Ltd.
- Nhundu, T.J. (1998). Determinants and prevalence of occupational stress among Zimbabwean school administrators. Journal of educational administration, *37* (3), 256-272.
- Nolen-Hoeksema, S., & Rusting, C.L. (1999). Gender differences in well-being. In D. Kahneman, E. Diener & N. Schwarz (Eds.), Well-being: The foundations of hedonic psychology (pp. 330-350). New York: Russell Sage Foundation.

- Oliver, J., & Brough, P. (2002). Cognitive appraisal, negative affectivity and psychological well-being. New Zealand journal of psychology. [On-line]. Available: [http://www.findarticles.com/p/articles/mi\\_qa3848/is\\_200206/ai\\_n9102415](http://www.findarticles.com/p/articles/mi_qa3848/is_200206/ai_n9102415)  
Accessed: 4 August 2005.
- Osipow, S.H. (1998). Occupational stress inventory. Revised edition (OSI-R). Lutz: Psychological Assessment Resources, Inc.
- Persaud, J. (2004). Healthy staff on tap. [On-line]. Available: <http://www.peoplemanagement.co.uk/pm/articles/healthystaffontapwellness>. Accessed: 10 February 2005.
- Plaut, V.C., Markus, H.R., & Lachman, M.E. (2002). Place Matters: Consensual features and regional variation in American well-being and self. Journal of personality and social psychology, 83 (1), 160-184.
- Probyn, M. (2001). Teachers' voices: Teachers' reflections on learning and teaching through the medium of English as an additional language in South Africa. International Journal of Bilingual Education and Bilingualism, 4 (4), 249-266.
- Rest, K.M. (1995). Ethics in occupational and environmental health. In B.S. Levy & D.H. Wegman (Eds.), Occupational Health: Recognising and preventing work-related disease (3<sup>rd</sup> ed), (pp.241-258). Boston: Little, Brown & Company.
- Riipinen, M. (1997). The relationship between job involvement and well-being. The Journal of Psychology, 13 (1), 81-89.
- Roberts, Z. J. (2004). Referred pain. [On-line]. Available: <http://www.peoplemanagement.co.uk/pm/articles/referredpainwellness>. Accessed: 10 February 2005.

- Schonfeld, I.S. (1992). Assessing stress in teachers: depressive symptoms scales and neutral self-reports of the work environment. In J.C. Quick, L.R. Murphy, & J.J. Hurrell (Eds.), Stress and well-being at work (pp. 270-285). Washington, DC: American Psychological Association.
- Scully, D., Kremer, J., Meade, M.M., Graham, R., & Dudgeon, K. (1998). Physical exercise and psychological well-being: a critical review. British journal of sports medicine, *32*, 111-120.
- Singleton, T. (1981). Ergonomics and man-machine systems. In P.B. Warr (Ed.), Psychology at work (2<sup>nd</sup> ed). (pp. 76-96). Middlesex: Penguin Books Ltd.
- Spirituality is essential to wholeness. (2005, June 04). Toronto Star, pp10-11.
- Staudinger, U.M., Fleeson, W., & Baltes, P.B. (1999). Predictors of subjective physical health and global well-being: Similarities and differences between the United States and Germany. Journal of personality and social psychology, *76* (2), 305-319.
- Stratton, P., & Hayes, N. (1999). A student's dictionary of psychology (3<sup>rd</sup> ed). London: Arnold.
- Study of demand and supply of educators in South African public schools: potential for attrition (2005). Education Labour Relations Council. [On-line]. Available: [http://www.elrc.co.za/news\\_view.asp?id=10](http://www.elrc.co.za/news_view.asp?id=10). Accessed: 18 July 2005.
- Study of demand and supply of educators in South African public schools: potential for attrition (2005). Human Sciences Research Council. [On-line]. Available: <http://www.hsrc.ac.za/media/2005/3/20050331/FactSheet1.html>. Accessed: 18 July 2005.
- Sunde, J., & Bozalek, V. (1993) (Re)searching difference. Agenda *19*.

- Tredoux, C., & Pretorius, T. (1999). Reducing and understanding complexity: multivariate data analysis. In M. Terre Blanche & K. Durrheim (Eds.), Research in Practice (pp. 355-378). Cape Town: University of Cape Town Press.
- Van Vuuren, D., & Maree, A. (1999). Survey methods in market and media research. In M. Terre Blanche & K. Durrheim (Eds.), Research in Practice (pp. 269-286). Cape Town: University of Cape Town Press.
- Warr, P. (1999). Well-being and the workplace. In D. Kahneman, E. Diener & N. Schwarz (Eds.), Well-being: The foundations of hedonic psychology (pp. 392-412). New York: Russell Sage Foundation.
- Williams, D.R., & House, J.S. (1985). Social support and stress reduction. In C.L. Cooper & M.J. Smith (Eds.), Job stress and blue collar work (pp.207-224). Chichester: John Wiley & Sons Ltd.
- Williams K. (2003). Has the future of marriage arrived? A contemporary examination of gender, marriages and psychological well-being. Journal of health and social behaviour, 44 (1), 470-487.
- Winefield, A.H. (2002). Unemployment, underemployment, occupational stress and psychological well-being. Australian journal of management, 27, 137-148.
- Wissing, M.P., & van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. South Africa journal of psychology, 32 (1), 32-44.

## Appendix A

### Information sheet for participants

My name is Ceridwen Neilson (student number: 200269078). I am an Industrial Psychology Masters student at the University of KwaZulu-Natal, Howard College campus. As part of my master's degree I have to complete a thesis. The topic of my thesis is, 'An exploratory study of the relationship between wellness and stress in the workplace.'

I will be collecting data from all Sivananda's employees, and Shelly Korn – HR Manager will be overseeing the process. My research combines three questionnaires:

- The Perceived Wellness Survey (aiming to obtain information on dimensions, such as your spiritual and physical wellness),
- The Occupational Stress Inventory (to determine what aspects of your job causes stress) and
- A biographical questionnaire.

The completion of the 3 questionnaires should take about an hour, and complete anonymity will be ensured. There will be no way to identify whose questionnaire is whose and thus it is not possible for you as an employee to be implicated in any way for the answers which you give. However, to meet ethical requirements, you will have to sign an informed consent sheet, however, this sheet will be completely separate from the questionnaire you are submitting, to ensure there will be no way to identify whose questionnaire is whose.

The aim of the research is to identify Sivananda's specific needs to allow and create a meaningful non-financial motivation and reward system for the college. May I therefore take this opportunity to urge you to answer honestly. My academic supervisor (Brandon Pleaner) and I will be the only people to see the completed questionnaires and as soon as the study is completed the questionnaires will be destroyed. No one else from Sivananda will have access to them. The results of the study will be provided to the organisation in the form of a report and will be given as overall findings and not individual results.

This research is not compulsory and you are free to withdraw at any time should you wish. Should you have any queries you are free to contact my supervisor, Brandon Pleaner. His email address is [pleanerb@ukzn.ac.za](mailto:pleanerb@ukzn.ac.za). I hope that you will be available and willing to participate in my research. I would like to thank you for your cooperation in this research.



## Appendix B

### Informed consent

I hereby agree that I have read the information sheet attached to this questionnaire. I understand that the research provides complete anonymity and that the results will only be seen by Ceridwen Neilson and her supervisor, Brandon Pleaner.

I will answer the questionnaires honestly and to the best of my ability. I understand that the results will be provided to the organisation as an overall finding and not as my individual results. I further understand that at the end of the study the completed questionnaires will be destroyed.

Signature \_\_\_\_\_

Date \_\_\_\_\_

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Appendix C

**Biographical questionnaire**

1. Educator/Support Staff \_\_\_\_\_
  
2. Age \_\_\_\_\_
3. Gender \_\_\_\_\_
  
4. Marital Status: Single/Married/Divorced/Widow \_\_\_\_\_
5. Do you have any children? \_\_\_\_\_
6. If yes, what is their age(s)? \_\_\_\_\_
7. If yes, what is their gender(s)? \_\_\_\_\_
  
8. What is your home language? \_\_\_\_\_
  
9. Do you exercise? \_\_\_\_\_
10. If yes, what form of exercise? \_\_\_\_\_
11. How many times per week? \_\_\_\_\_ for how long each time? \_\_\_\_\_
  
12. How many days are you absent on mean per year? \_\_\_\_\_
  
13. Would you describe your eating patterns as healthy? \_\_\_\_\_
  
14. Do you smoke? \_\_\_\_\_
15. If yes, how many cigarettes, on mean, per day? \_\_\_\_\_
  
16. Do you drink alcoholic beverages? \_\_\_\_\_
17. If yes, how many drinks on mean per week? \_\_\_\_\_
  
18. On the whole would you consider yourself to be healthy at this present time (Yes/No)?  
\_\_\_\_\_

## Appendix D

### Occupational Role Questionnaire

#### **Directions**

Read each statement carefully. For each statement, fill in the circle with the number which fits you best.

Fill in 1 if the statement is *rarely* or *never* true.

Fill in 2 if the statement is *occasionally* true.

Fill in 3 if the statement is *often* true.

Fill in 4 if the statement is *usually* true.

Fill in 5 if the statement is true *most of the time*.

For example if you believe that a statement is often true about you, you would fill the '3' circle for that statement on your rating sheet.

#### **Example**



Fill in only one circle for each statement. Fill in a circle for all of the statements.

#### **Questions**

1. At work I am expected to do too many different things
2. I feel that my job responsibilities are increasing
3. I am expected to perform tasks on my job for which I have never been trained
4. I have to take work home with me
5. I have the resources I need to get my job done
6. I'm good at my job
7. I work under tight deadlines
8. I wish that I had more help to deal with the demands placed upon me at work
9. My job requires me to work in several equally important areas at once
10. I am expected to do more work than is reasonable

11. My career is progressing about as I hoped it would
12. My job fits my skills and interests
13. I am bored with my job
14. I feel I have enough responsibility on my job
15. My talents are being used on my job
16. My job has a good future
17. I am able to satisfy my needs for success and recognition in my job.
18. I feel overqualified for my job
19. I learn new skills in my work
20. I have to perform tasks that are beneath my ability
21. My supervisor provides me with useful feedback about my performance
22. It is clear to me what I have to do to get ahead
23. I am uncertain about what I am supposed to accomplish in my work
24. When faced with several tasks I know which should be done first
25. I know where to begin a new project when it is assigned to me
26. My supervisor asks for one thing, but really wants another
27. I understand what is acceptable personal behaviour on my job (e.g., dress, interpersonal relations, etc.)
28. The priorities if my job are clear to me
29. I have a clear understanding of how my boss wants me to spend my time
30. I know the basis on which I am evaluated
31. I feel conflict between what my employer expects me to do and what I think is right or proper
32. I feel caught between factions at work.
33. I have more than one person telling me what to do
34. I know where I fit in my organisation
35. I feel good about the work I do
36. My supervisors have conflicting ideas about what I should be doing
37. My job requires working with individuals from several departments or work areas
38. It is clear who really runs things where I work
39. I have divided loyalties on my job
40. I frequently disagree with individuals from other work units or departments
41. I deal with more people during the day than I prefer
42. I spend time concerned with the problems others at work bring to me
43. I am responsible for the welfare of subordinates
44. People on-the-job look to me for leadership
45. I have on-the-job responsibility for the activities of others
46. I worry about whether the people who work for/with me will get things done properly

47. My job requires me to make important decisions
48. If I make a mistake in my work, the consequences for others can be pretty bad
49. I worry about meeting my job responsibilities
50. I like the people I work with
51. On my job I am exposed to high levels of noise
52. On my job I am exposed to high levels of wetness
53. On my job I am exposed to high levels of dust
54. On my job I am exposed to temperature extremes
55. On my job I am exposed to bright light
56. My job is physically dangerous
57. I have an erratic work schedule
58. I work all by myself
59. On my job I am exposed to unpleasant odors
60. On my job I am exposed to poisonous substance

## Appendix E

### Perceived Wellness Survey

The following statements are designed to provide information about your wellness perceptions. Please carefully and thoughtfully consider each statement, and then ring the one response option with which you most agree with. 1 = very strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree.

		Very Strongly Disagree		Very Strongly Agree		
1. I am always optimistic about my future	1	2	3	4	5	
2. There have been times when I felt inferior to most of the people I knew	1	2	3	4	5	
3. Members of my family come to me for support	1	2	3	4	5	
4. My physical health has restricted me in the past	1	2	3	4	5	
5. I believe there is a real purpose for my life	1	2	3	4	5	
6. I will always seek out activities that challenge me to think and reason	1	2	3	4	5	
7. I am satisfied with the amount of money I am able to save	1	2	3	4	5	
8. I rarely count on good things happening to me	1	2	3	4	5	
9. In general, I feel confident about my abilities	1	2	3	4	5	
10. Sometimes I wonder if my family will really be there for me when I am in need	1	2	3	4	5	
11. My body seems to resist physical illness very well	1	2	3	4	5	
12. Life does not hold much future promise for me	1	2	3	4	5	
13. I avoid activities which require me to concentrate	1	2	3	4	5	
14. I worry about how much money I owe	1	2	3	4	5	
15. I always look on the bright side of things	1	2	3	4	5	
16. I sometimes think I am a worthless individual	1	2	3	4	5	
17. My friends know they can always confide in me and ask me for advice	1	2	3	4	5	
18. My physical health is excellent	1	2	3	4	5	
19. Sometimes I don't understand what life is all about	1	2	3	4	5	
20. Generally, I feel pleased with the amount of intellectual stimulation I receive in my daily life	1	2	3	4	5	
21. When I think of my financial situation I am optimistic about the future	1	2	3	4	5	
22. In the past, I have expected the best	1	2	3	4	5	
23. I am uncertain about my ability to do things well in the future	1	2	3	4	5	

	Very Strongly Disagree			Very Strongly Agree	
24. My family has been available to support me in the past	1	2	3	4	5
25. Compared to people I know, my past physical health has been excellent	1	2	3	4	5
26. I feel a sense of mission about my future	1	2	3	4	5
27. The amount of information that I process in a typical day is just about right for me (i.e., not too much and not too little)	1	2	3	4	5
28. I have a weekly or monthly budget that I follow	1	2	3	4	5
29. In the past, I hardly ever expected things to go my way	1	2	3	4	5
30. I will always be secure with who I am	1	2	3	4	5
31. In the past, I have not always had friends with whom I could share my joys and sorrows	1	2	3	4	5
32. I expect to always be physically healthy	1	2	3	4	5
33. I have felt in the past that my life was meaningless	1	2	3	4	5
34. In the past, I have generally found intellectual challenges to be vital to my overall well-being	1	2	3	4	5
35. I worry about being able to pay my monthly expenses	1	2	3	4	5
36. Things will not work out the way I want them to in the future	1	2	3	4	5
37. In the past, I have felt sure of myself amongst strangers	1	2	3	4	5
38. My friends will be there for me when I need help	1	2	3	4	5
39. I expect my physical health to get worse	1	2	3	4	5
40. It seems that my life has always had purpose	1	2	3	4	5
41. My life has often seemed void of positive mental stimulation	1	2	3	4	5
42. I often buy goods on credit	1	2	3	4	5

## Appendix F

### Key

<b>DIMENSION</b>	<b>ABR.</b>	<b>LABEL</b>	<b>MEANING</b>
<b>Stress</b>	RO	Role Overload	The extent to which job demands exceed resources and the degree to which the employee can accomplish the workload
	RI	Role Insufficiency	The extent to which the individuals training, education, skills and experience are appropriate to the job requirements
	RA	Role Ambiguity	The degree to which priorities, expectations and evaluation standards are clear to the employee
	RB	Role Boundary	The degree to which the individual is experiencing conflicting role demands and loyalties in the work setting
	R	Responsibility	The extent to which the individual has, or feels, a great deal of responsibility for the performance and welfare of others on the job
	PE	Physical Environment	The degree to which the individuals are exposed to high levels of environmental toxins or extreme physical conditions
<b>Wellness</b>	Psy	Psychological Wellness	General perception that one will experience positive outcomes to the events and circumstances of life.
	Emo	Emotional Wellness	Possession of a secure self-identity and a positive sense of self-regard (these constitute aspects of self-esteem).
	Soc	Social Wellness	Perception of having support available from family or friends in times of need and the perception of being a valued support provider.
	Phy	Physical Wellness	Positive perception and expectation of physical health.
	Spi	Spiritual Wellness	A belief in a unifying force, an integrative force between the mind and body or as a positive perception of meaning and purpose in life.
	Int	Intellectual Wellness	The perception of being internally energized by an optimal amount of intellectually stimulating activity.
	Fin	Financial Wellness	The perception of being able to manage personal finances and not experience large debt.
<b>Exercise</b>	1	Squash	
	2	Gym	
	3	Walking	
	4	Yoga	
	5	Running	
	6	Soccer	

*The meanings for the stress and wellness dimensions were derived from Osipow (1998) and Adams et al., (1997) respectively.*