

## **CHAPTER 5: SUMMARY AND RECOMMENDATIONS**

### **5.1 INTRODUCTION**

In this final chapter, the major findings and contributions of the current study, its implications for higher education institutions, directions for future research and the limitations of the present study will be presented.

### **5.2 DISCUSSION OF FINDINGS**

#### **5.2.1 Discussion of the correlation between the health risk scores and wellness behaviour levels of managers**

The first research question concerned the correlation between the health risk scores and the wellness behaviour levels of managers. The results suggested that there was no significant correlation between the mean physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness, intellectual wellness, spirituality and values sub-dimensions and the health risk scores of managers. However, there was a significant negative relationship between sexuality and emotional awareness and the health risk scores. The negative correlation indicated that with an increase in the sexuality and emotional awareness level, there would be a decrease in the health risk. There was a small negative relationship between emotional management and the health risk score. The low negative correlation indicated that with an increase in the emotional management level, there would be a decrease in the health risk. There was also a negative relationship between occupational wellness and the health risk score. The low negative correlation indicated that with an increase in the occupational wellness levels, there would be a decrease in the health risk.

### **5.2.2 Discussion of the difference between the mean wellness behaviour levels and mean health risk scores of managers at the academic university and technology university**

The second research question investigated the difference between the mean wellness behaviour levels and the mean health risk scores of managers at the academic university and technology university. The results indicated that the wellness behaviour levels and health risk scores between managers at the academic university and technology university were very similar. The p-values were all greater than 0.05, confirming the null hypothesis. This shows that there is no significant difference between the mean wellness behaviour levels and health risk scores of managers at the academic university and technology university.

### **5.2.3 Discussion of the difference between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services**

The third research question concerned the difference between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services. The results indicated that there was no significant difference in the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services. Thus, the null hypothesis postulating that there is no significant difference between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services, could not be rejected.

### **5.2.4 Discussion of the difference between the mean wellness behaviour levels and mean health risk scores of female and male managers**

This research question was aimed at establishing if there was a difference between the mean wellness behaviour levels and mean health risk scores of male and female managers. Only in one wellness behaviour sub-dimension, namely, sexuality and emotional awareness, the p-value of 0.048, was less than 0.05. Thus,

there were no significant differences between the mean scores of nine of the ten wellness behaviour levels and the mean health risk scores of female and male managers. The exception was sexuality and emotional awareness. Since there were no significant differences between the mean scores of nine of the ten wellness behaviour levels and the mean health risk scores, the null hypothesis postulating that there is no significant difference between the mean wellness behaviour levels and mean health risk scores of male and female managers could not be rejected.

#### **5.2.5 Discussion of the difference between the mean wellness behaviour levels and mean health risk scores of post-graduate and PhD graduate managers**

The fifth research question looked at the difference between the mean wellness behaviour levels and the mean health risk scores of post-graduate and PhD graduate managers. The results indicated that there were no differences between the mean physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness, sexuality and emotional awareness, occupational wellness, spirituality and values and the health risk scores. However, the exceptions were the emotional management (p-value of 0.032) and intellectual wellness (p-value of 0.004) sub-dimensions. Since the results had shown no significant difference between the mean of eight of the ten behaviour levels and the health risk scores, the null hypothesis stating that there is no significant difference between the mean wellness behaviour levels and mean health risk scores between post-graduate and PhD graduate managers could not be rejected.

#### **5.2.6 Discussion of the difference between the mean wellness behaviour levels and mean health risk scores of the three age groups**

In this respect, the difference between the mean wellness behaviour levels and mean health risk scores of managers according to their age groups were examined. There were no differences in the mean physical fitness and nutrition, medical self-care, safety, social awareness, sexuality and emotional awareness, emotional management, intellectual wellness, occupational wellness, spirituality and

values and the health risk scores. Although an ANOVA indicated that the mean environmental wellness scores of the three age groups were different, the Post-hoc tests did not indicate which age groups differed. Thus, the null hypothesis stating that there is no significant difference between the mean wellness behaviour levels and mean health risk scores, was maintained.

### **5.2.7 Discussion of the fitting of a wellness prediction model**

The last research question was aimed at establishing whether a wellness prediction model could be used, as a holistic dependant variable, to measure wellness against the independent variables such as physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness, sexuality and emotional awareness, emotional management, intellectual wellness, occupational wellness, spirituality and values and the health risk scores.

The data was of such a nature that a linear regression model could not be used, as the variables were not normally distributed. A logistical regression could only be done if a comparison was made between two groups of managers, namely, one group with high wellness behaviour levels and low health risk scores and one group with low wellness behaviour levels and high health risk scores. However, all the managers fell into one group characterised by high wellness behaviour levels and low health risk scores and as a result a comparison was not possible.

The null hypothesis postulating that it is not possible to use a wellness prediction model as a holistic dependant variable to measure wellness against all possible variables, could not be rejected.

### **5.2.8 Combined health risk scores and wellness behaviour levels of managers at the sample universities**

The results of the data analysis indicated that there was no significant difference in the health risk scores of managers. As such, the wellness behaviour levels and health risk scores of managers at the two sample universities were combined to determine their overall wellness status. The combined health risk scores were an average of 2.71 out of a possible 14 (19.36%), while the combined

average wellness behaviour levels of managers at the two sample universities was 76.80%. The combined wellness behaviour levels are shown in Table 5.1.

**Table 5.1: Combined Average Wellness Behaviour Levels of Managers at the Two Sample Universities**

Wellness sub-dimension	N	Minimum	Maximum	Mean	Std. Deviation
Physical fitness and nutrition	89	12	46	27.93	6.974
Medical self-care	89	11	49	30.35	7.395
Safety	89	26	50	44.79	5.698
Environmental wellness	89	20	50	33.51	6.762
Social awareness	89	28	50	41.44	4.836
Sexuality and emotional awareness	89	27	50	43.02	5.372
Emotional management	89	22	50	39.54	6.006
Intellectual wellness	89	26	50	42.19	5.433
Occupational wellness	89	17	49	39.20	6.821
Spirituality and values	89	22	50	42.04	6.006

Similar research studies were done to measure the extent to which wellness behaviour reflects potential health risks and hazards. The instrument, the TestWell Wellness Inventory, was used in a number of studies to measure the mean wellness behaviour levels of high school and college students (Stewart *et al.*, 2000:157-173; Owen, 1999:180-182; DiMonda, 2005). Although the target populations were different, the scores of the wellness behaviour levels of this study were compared with those of the abovementioned studies. The comparison is shown in table 5.2.

**Table 5.2: Comparison of Wellness Sub-dimension Scores**

Wellness sub-dimension	Botha (2006) Population = managers			Stewart <i>et al.</i> (2000:162) Population = high school students			Owen (1999:181) Population = college students		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Physical fitness and nutrition	89	27.93	6.974	426	30.74	7.99	184	32.67	8.36
Medical self-care	89	30.35	7.395	422	28.22	7.41	185	33.23	8.04
Safety	89	44.79	5.698	425	37.29	8.69	185	44.38	3.98
Environmental wellness	89	33.51	6.762	427	33.04	7.87	185	33.40	6.90
Social awareness	89	41.44	4.836	427	34.07	7.84	185	40.02	5.55
Sexuality and emotional awareness	89	43.02	5.372	418	40.27	6.73	185	43.05	5.91
Emotional management	89	39.54	6.006	432	39.26	7.23	185	38.90	5.30
Intellectual wellness	89	42.19	5.433	431	33.61	9.14	185	42.31	4.90
Occupational wellness	89	39.20	6.821	432	40.08	7.68	182	39.75	6.29
Spirituality and values	89	42.04	6.006	431	39.20	7.64	184	40.73	6.25

The comparison of the three research studies revealed similar mean wellness behaviour levels on the environmental wellness, emotional wellness management and occupational wellness sub-dimensions. The mean physical and nutrition levels of managers in this study are lower than those mean scores of the high school and college students in the other two research studies. A possible explanation for this trend may be a higher participation rate in physical activities and more time available for recreational activities amongst the high school and college students. The mean wellness behaviour levels on safety are similar between managers in this study and the college student population, while the mean wellness behaviour levels on safety amongst the high school population are considerably lower. A possible explanation is that adolescents or teenagers are more susceptible to risky behaviour.

The mean social awareness scores between the managerial and college student populations were similar, while the mean score of the high school population was considerably lower. A possible reason for this may be the general immaturity

and selfishness of teenagers and the lack of valuing the importance of interpersonal skills and relationships. The mean scores on the intellectual wellness sub-dimension for high school students were also lower compared to the managerial and college students' population. A possible explanation may be the fact that intellectual growth is coupled to life long learning and becomes more important when individuals join the labour market.

### **5.3 CONTRIBUTIONS OF THE CURRENT STUDY**

Firstly, this study was important in the sense that it contributed to the development of a holistic wellness behaviour and health risk model for managers at South African tertiary institutions. The model is based on the holistic wellness behaviour assessment questionnaire used in this study. The wellness behaviour of managers was measured on ten wellness sub-dimensions. The questionnaire included nine health risks assessment questions to determine the health risk score. Of these nine, only six were used to measure the health risk scores of managers. Thus, the health risk score is the eleventh independent variable influencing wellness as a dependent variable. This model is visually illustrated in figure 5.1.



**Figure 5.1: A Wellness Behaviour and Health Risk Model for Managers at South African Tertiary Institutions**



The model consists of eleven independent variables, namely, physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness, sexuality and emotional awareness, emotional management, intellectual wellness, occupational wellness, spirituality and values and the health risk score. Wellness, as a dependent variable, is a multi-dimensional construct determined by a number of variables or factors. In this study, wellness, as a dependent variable, was determined by the eleven independent variables mentioned. The theoretical foundations of the ten sub-dimensions of wellness were discussed in Chapter Two. Each sub-dimension was discussed with specific reference to the possible risk factors



associated with each, as well as individual and organisational interventions to decrease the wellness behaviour risks of managers. Chapter Two thus served as the theoretical foundation of the sub-dimensions of wellness included in the proposed model. In addition, the literature review served as an educational tool to inform and make managers aware of their wellness behaviour, health risks associated with their behaviour, possible behaviour change interventions and the advantages of healthy wellness behavioural habits.

The second major contribution of this study was the adaptation of an existing measuring instrument, the TestWell Wellness Inventory for Adults designed by the National Wellness Institute in the United States of America that measured the wellness behaviour levels and health risk scores of managers. The results of the research study provided a cross-sectional picture of the wellness status of managers at the two sample universities. It also enabled management at the two sample universities to devise and implement structured wellness interventions based on scientific verifiable and reliable data.

The third contribution was that the research findings indicated high wellness behaviour levels (average score of 76.80%) amongst managers at the two sample universities. The only exceptions were physical fitness and nutrition (average score of 56%) and, as a borderline, medical self-care (average score of 61%). In addition, the combined health risk scores of managers were very low with an average of 2.7 out of a possible score of 14 (19.36%). This indicates that the managers at the two sample universities had high levels of wellness and low levels of health risks.

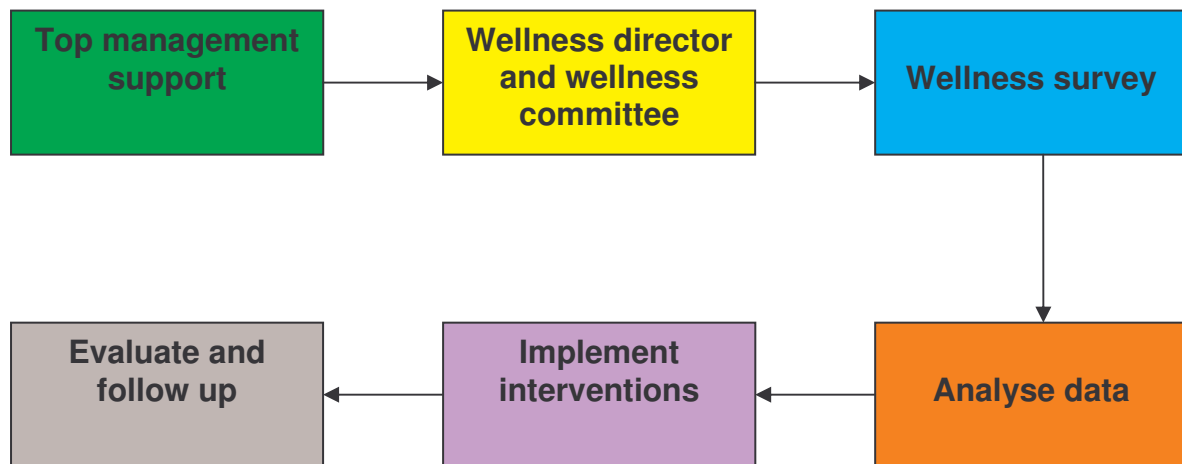
Finally, the research study identified physical fitness and nutrition (56% - less than the 60<sup>th</sup> percentile) as a wellness behaviour weakness amongst managers. This necessitates an intervention strategy. The low physical fitness and nutritional levels were also confirmed by the Body Mass Index levels of the managers. Of the 92.1% respondents who indicated their height and weight, 42% were overweight and 21% obese. The borderline score for medical self-care (61%) which includes aspects such as the updating of one's immunization record, regular self-examination of testes for men and breasts for women, tobacco smoking cessation, the use of complementary and alternative medicines for chronic diseases, adequate water intake, maintaining oral hygiene, protecting one's skin from sun damage, maintaining blood pressure at normal levels and maintaining one's blood cholesterol levels within an acceptable range also necessitates a pro-active intervention strategy.

## 5.4 IMPLICATIONS FOR HIGHER EDUCATION INSTITUTIONS

Managers at higher education institutions are supposed to be change agents who provide strategic direction and leadership to their institutions. If managers are not healthy, there may be the perception that the universities they serve may not be healthy either. To promote the health and the well-being of managers, tertiary institutions should design and implement wellness behaviour and health promotion interventions as part of their strategic human resource plans.

The wellness behaviour model, proposed in this study, can serve as a theoretical framework for such intervention programmes. The first requirement for health and wellness promotion is top management's support for the implementation, for example, of physical fitness and nutrition and medical self-care interventions. Secondly, a wellness director should be appointed and a wellness committee consisting of all role players should be established. Thirdly, a survey should be conducted to determine the wellness behaviour problems and health risks of managers. A wellness behaviour and health risk assessment questionnaire should be used to measure the wellness behaviour levels and health risks of managers. The questionnaire can consist of a demographic, health risk and wellness behaviour assessment section (see annexure A, as an example). Ideally a health risk assessment should be done by way of a physical health screening test. The next step will be to analyse the data to determine the wellness behaviour levels and to calculate the health risk scores. Wellness behaviour weaknesses based on the measurement of the wellness sub-dimension levels should be diagnosed while the health risk scores based on the measured health risk variables should be determined. Wellness behaviour and health promotion interventions should be developed and implemented. These interventions should be evaluated to quantify their impact, for example, on stress, health care costs, satisfaction and motivation, performance, turnover, absenteeism, morale, productivity, retention, loyalty and quality of life. The process of implementing the proposed interventions, emanating from the wellness behaviour and health risk model, is summarised in figure 5.2.

**Figure 5.2: Steps in the Implementation of Wellness Behaviour and Health Promotion Interventions**



Higher education institutions need to reflect on their current employee assistance and wellness programmes. Health and wellness promotion should be a part of a human resource strategy that aims at reducing the health risks of managers through planned changes in individual risk related behaviours and other organisationally related predisposing conditions. Top management should play a crucial role in creating a healthy organisational climate. The organisational climate can only be changed if the organisational culture is changed. From an organisational behaviour perspective wellness behaviour and health promotion interventions are a pro-active human resource strategy to address signs and symptoms of diseases and prevent disability amongst managers. In addition, these strategies create an awareness of and education about, leading healthy lifestyles and as a result can reduce the health risks of managers. To educate managers and to create an increasing wellness behaviour awareness amongst managers is no guarantee for their adaptation of a healthy lifestyle. To change their wellness behaviour, interventions should be based on behavioural change models such as the Cognitive Learning Theory and Transtheoretical Model (refer to section 1.3.1 – health and wellness). Top management at the academic university should take cognisance that their managerial workforce is on average older (47.2% in age group 46-55 and

41.7% in age group 56-65) than their counterparts at the technology university. The ageing managerial component at the academic university may increase the health risks of managers in the long term. Thus, to reduce the health risks and to prevent diseases and disability amongst the ageing managerial component, top management at the academic university should make wellness promotion a strategic priority.

## 5.5 DIRECTIONS FOR FUTURE RESEARCH

The current study showed that there is a relationship between the wellness behaviour levels and the health risk scores of managers. The combined wellness behaviour levels and health risk scores of managers provided a clear picture of their overall wellness status. The data analysis indicated physical fitness and nutrition and, as a borderline case, medical self-care, to be wellness behaviour weaknesses amongst managers at the sample universities. Therefore, this study was only a starting point for wellness behaviour and health promotion interventions, as well as for future research in this and related areas.

Future directions could include, amongst others:

- ❑ Longitudinal studies to measure the impact of physical fitness and nutrition and medical self-care interventions on stress, health care costs, satisfaction and motivation, performance, turnover, absenteeism, morale, productivity, retention, loyalty and quality of life.
- ❑ To gain top management's support to invest in wellness and health promotion, research should be done on the return on investment (ROI) of the proposed interventions.
- ❑ To determine the impact of environmental factors, such as social environment, on healthy wellness behaviours. The relationship between social capital and health in the South African context is also a potential topic for future research.
- ❑ To undertake research on behavioural modification theories or models such as the Cognitive Learning Theory, Transtheoretical Model and Health Belief Model.
- ❑ To enhance external validity, future research should obtain a representative sample of more tertiary institutions.

- ❑ To identify other possible independent variables that might influence and determine wellness as a dependent variable.
- ❑ Research should be done on health screening that focusses on breast cancer detection mammograms, cholesterol testing, blood pressure testing, bone density and osteoporosis, diabetics testing, cardiac health screenings, body fat analyses (BMI), peak flow oxygen saturation, pulmonary function testing, hearing tests, vision testing, ECGs and glucose screenings. In addition, research should be done on how to calculate a health risk score based on the health screening test results.
- ❑ Finally, future studies, with samples from other universities, should be conducted a factorial analysis in order to enhance the psychometric properties of the TestWell Wellness Inventory for Adults instrument.

## **5.6 LIMITATIONS OF THE STUDY**

The findings of this study should be viewed with a few limitations in mind. The questionnaire used was a pencil-and paper instrument. The respondents were self-reporting on their wellness behaviour and health risks status. This might have caused a sampling bias. The danger may also exist that the self-reported values were based on the respondents' own perceptions of their wellness behaviour and health risk status and not on factual information. In view of unreliable self-reported values, only six of the nine health risk factors were included in the analysis to calculate the health risk scores. The sampling bias was strengthened by the fact that there was an over-representation of respondents from the technology university, white males and heads of academic departments. Thus, these findings cannot be generalizable to the higher education institutions included in the sample or to the other nineteen South African higher education institutions. In view of the relatively small number of respondents a factor analysis on the TestWell's Wellness Inventory for Adults instrument could not be done.

The low response rate created a response and representative bias problem that made it difficult to generalise the results obtained to the entire managerial population of the two sample universities. This restricted the usefulness of the research survey in the sense that the results may not be deemed as representative of the whole tertiary population.

Despite these limitations, these findings will undeniably contribute to the extension of the literature and theory on variables associated with wellness. The proposed wellness model will also serve as a theoretical foundation to determine the wellness behaviour and health risk profile of managers at South African higher education institutions.

## **5.7 CONCLUSION**

This study has contributed to the growing literature on wellness and healthy lifestyle behaviour because it provides empirical evidence to support theoretical wellness models. The holistic wellness behaviour assessment provides managers at the two sample universities with an indication of their wellness behaviour levels and the areas that need improvement. This study has shown that the instrument used was valid and reliable for assessing the wellness status of managers. In addition, the instrument has identified nine health risk factors of which six were used to measure the health risk scores of managers.

However, the small sample (28% response rate) is indicative of the ignorance of managers about the importance of wellness and health. There is seemingly poor insight into and understanding of the relationship between wellness and work-life. The poor participation also shows the unwillingness of managers to reveal personal information to enable research to be undertaken that can lead to effective health management interventions. This reluctance to participate necessitates a comprehensive education effort to explain the benefits of leading a healthy lifestyle. For instance, the relationship between personal health and productivity. To retain competent and able staff, higher education institutions should focus on wellness and health promotion programmes. Because of the ageing tertiary population, people have to work longer, therefore, health becomes a crucial human resource issue in organisations.

The wellness behaviour and health risk model, proposed in this study, may serve as a theoretical framework for future scientific wellness behaviour and health promotion surveys and data analysis to devise tailor made interventions. The model postulates that wellness, as a dependent variable, is determined by eleven independent variables. These eleven independent variables are physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness,

sexuality and emotional awareness, emotional management, intellectual wellness, occupational wellness, spirituality and values and the health risk score. This study has identified the physical fitness and nutrition, and medical self-care wellness behaviour levels as weaknesses amongst managers at the two sample universities that necessitate interventions.