CHAPTER FOUR: RESEARCH FINDINGS

4.1 INTRODUCTION

The main aim of this research study was to develop a holistic wellness model for managers at higher education institutions. The secondary aims were to measure the wellness behaviour levels of managers by focussing on the various wellness sub-dimensions, to identify their health risk factors, to calculate the health risk scores and to propose wellness interventions based on the measurement of wellness behaviour levels and the health risk scores. To accomplish these research aims or objectives, this study was designed to explore the following research questions:

1) What is the correlation between the health risk scores and the wellness behaviour levels of managers?
2) Is there a difference between the mean wellness behaviour levels and mean health risk scores of managers at the academic university and the technology university?
3) Is there a difference between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services?
4) Is there a difference between the mean wellness behaviour levels and mean health risk scores of male and female managers?
5) Is there a difference between the mean wellness behaviour levels and mean health risk scores of post-graduate and PhD graduate managers?
6) Is there a difference between the mean wellness behaviour levels and mean health risk scores of managers according to their age groups?
7) Can a wellness prediction model be used, as a holistic dependant variable, to measure wellness against all possible independent variables?

The psychometrically measured variables, as well as the demographic and health risk variables to be used in further analysis are shown in Table 4.1.

Table 4.1: Variables Included in the Analysis

VARIABLES	DESCRIPTION
Demographic variables	
A1	At which university are you employed
A5	Gender
A7	Age
A8	Level of education
A9	Job title
Health risk variables included to calculate health risk scores	
A14	Smoking status
A16	Visits to doctors or health care professionals
A17	Hours sleep per night
A18	Physical health status
A20	Family history of medical conditions (high blood pressure, diabetes, heart attack or angina, stroke and high blood cholesterol)
A21	Diagnosed with medical conditions (high blood pressure, diabetes, heart attack or angina, stroke and high blood cholesterol)
A14-A21 = HRS	Health risk scores
Wellness sub-dimension variables	
PFN	Physical fitness and nutrition
MSC	Medical self-care
STY	Safety
EW	Environmental wellness
SA	Social awareness
SEX	Sexuality and emotional awareness
EM	Emotional management
IW	Intellectual wellness
OW	Occupational wellness
SV	Spirituality and values

4.2 RESULTS

4.2.1 Correlation between the health risk scores and wellness behaviour levels of managers

Research question 1: What is the correlation between the health risk scores and the wellness behaviour levels of managers? The Pearson product moment correlation coefficient was used to determine the relationship between the wellness behaviour levels and the health risk scores of managers. The results are shown in table 4.2.

Table 4.2: Correlation between the Wellness Behaviour Levels and Health Risk Scores of Managers

Wellness sub-dimension	Health risk scores Pearson product moment correlation coefficient Value of *(r)*	P-values
Physical fitness and nutrition	-.140	0.189
Medical self-care	.068	0.528
Safety	-.042	0.697
Environmental wellness	-.026	0.808
Social awareness	-.162	0.130
Sexuality and emotional awareness	-.401**	0.000
Emotional management	-.297**	0.005
Intellectual wellness	-.073	0.497
Occupational wellness	-.323**	0.002
Spirituality and values	-.195	0.067

There was no correlation between the mean physical fitness and nutrition, medical self-care, safety, environmental wellness, social awareness, intellectual wellness, spirituality and values and the health risk scores of managers. There was a significant negative relationship between sexuality and emotional awareness and the health risk scores. The negative correlation indicates that with an increase in the sexuality and emotional awareness level, there will 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 indicates that with an increase in the emotional management level, there will be a decrease in the health risk. In addition, there was a negative relationship between occupational wellness and health risk. The low negative correlation indicates that with an increase in the occupational wellness level, there will be a decrease in the health risk.

4.2.2 Comparison between the mean wellness behaviour levels and mean health risk scores of managers at the academic university and technology university

Research question 2: Is there a difference between the mean wellness behaviour levels and mean health risk scores of managers at the academic university and the technology university? To compare the mean wellness behaviour

levels and mean health risk scores of managers at the academic university and the technology university, a *T*-test was used to compare the mean scores. The results are shown in table 4.3.

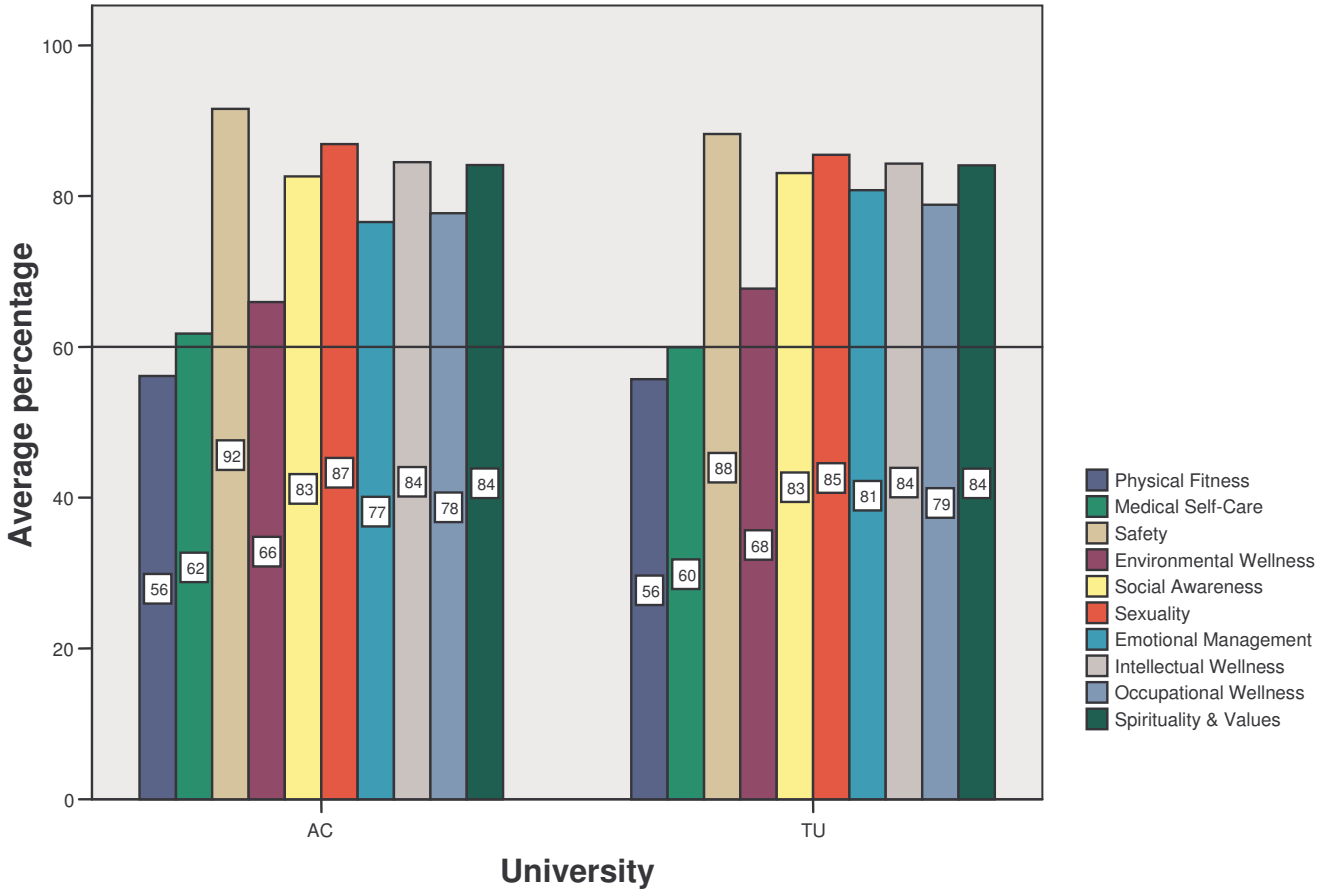
Table 4.3: *T*-test of Mean Scores between the Wellness Behaviour Levels and Health Risk Scores of Managers at the Academic University and Technology University

Wellness sub-dimension	Academic University		Technology University		
	Mean	SD	Mean	SD	P-value
Physical fitness and nutrition	28.06	7.034	27.85	6.998	0.892
Medical self-care	30.89	6.907	29.98	7.752	0.573
Safety	45.78	5.504	44.11	5.780	0.178
Environmental wellness	32.97	6.217	33.87	7.144	0.543
Social awareness	41.31	5.047	41.53	4.734	0.833
Sexuality and emotional awareness	43.44	5.289	42.74	5.460	0.544
Emotional management	38.28	5.844	40.40	6.017	0.103
Intellectual wellness	42.25	4.819	42.15	5.859	0.933
Occupational wellness	38.86	6.634	39.43	6.999	0.700
Spirituality and values	42.06	7.059	42.04	5.244	0.989
Health risk scores	2.56	1.796	2.85	2.397	0.534

The mean scores on the wellness behaviour levels and health risk between managers at the academic university and technology university were very similar, with the exception of emotional management. The average score on emotional management for the technology university managers was 40.40 out of a possible 50 (80.8%), while the average score for managers at the academic university was 38.28 out of a possible 50 (76.56%). On average the emotional management score of the technology managers was 4.24% higher than their counterparts at the academic university.

Since all the p-values are greater than 0.05, the null hypothesis of no difference between the mean scores could not be rejected. Thus, the observed means of the two universities did not differ significantly.

Figure 4.1: Mean Scores of Wellness Behaviour Levels of Managers at the Academic University and Technology University



4.2.3 Comparison between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services

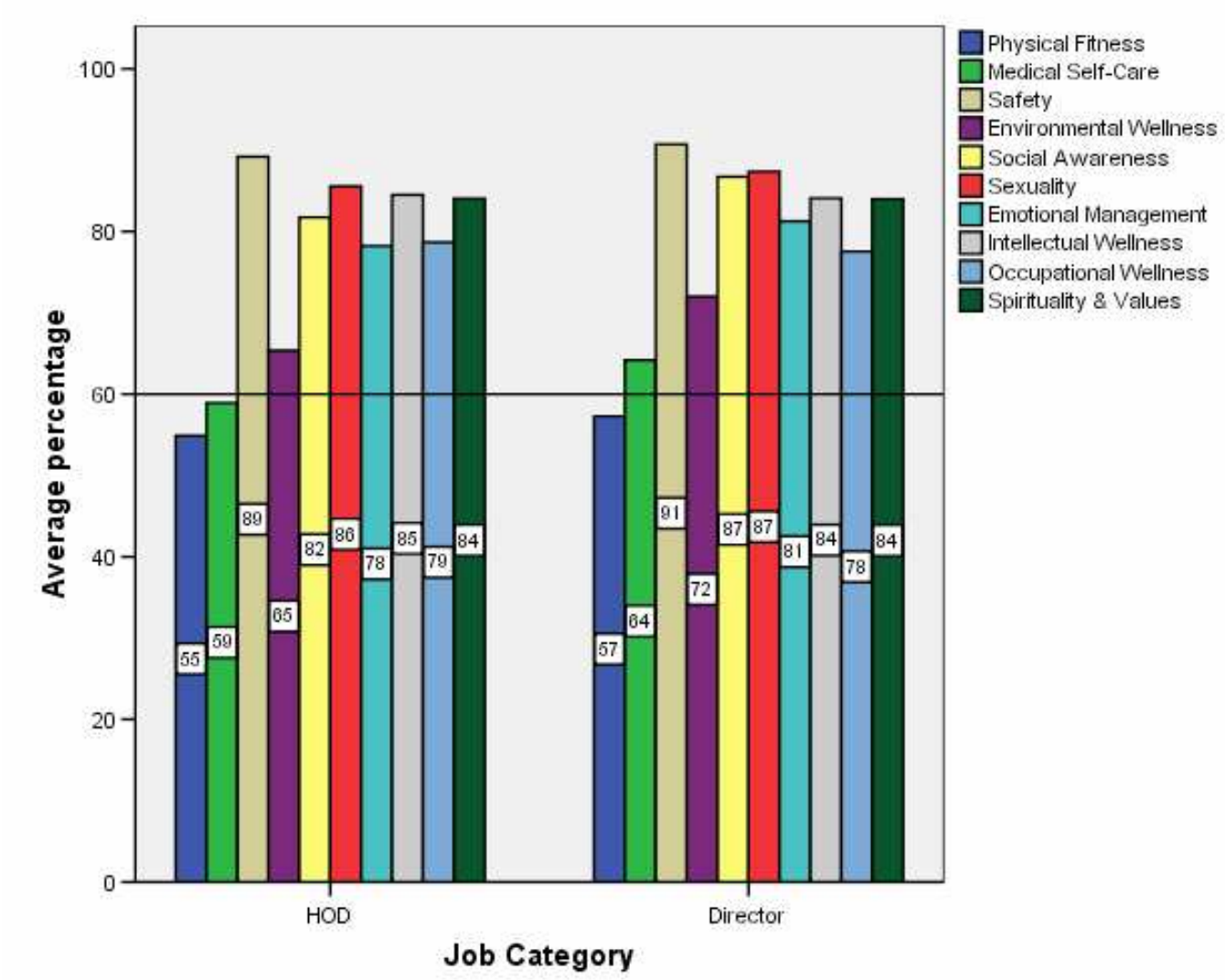
Research question 3: Is there a difference between the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services? To compare the mean wellness behaviour levels and mean health risk scores of heads of academic departments and directors of support services, a *T*-test was done to compare the mean scores. The results are shown in table 4.4.

Table 4.4: *T*-test of Mean Scores between the Wellness Behaviour Levels and Health Risk Scores of Heads of Academic Departments and Directors of Support Services

Wellness sub-dimension	Heads of Academic Departments		Directors of Support Services		
	Mean	SD	Mean	SD	P-value
Physical fitness and nutrition	27.54	6.892	29.18	7.513	0.347
Medical self-care	29.95	6.967	31.68	8.632	0.347
Safety	44.82	5.769	44.86	5.784	0.973
Environmental wellness	32.74	6.389	35.64	7.719	0.085
Social awareness	41.05	4.728	42.41	5.234	0.259
Sexuality and emotional awareness	42.75	5.417	43.59	5.509	0.534
Emotional management	38.95	5.991	40.82	6.037	0.211
Intellectual wellness	42.32	5.403	41.64	5.835	0.615
Occupational wellness	38.98	6.639	39.77	7.445	0.642
Spirituality and values	42.11	6.011	41.45	6.224	0.663
Health risk scores	2.88	2.240	2.23	1.998	0.231

Since all the p-values were greater than 0.05, the null hypothesis of no difference between the mean scores could not be rejected. Thus, the observed means of heads of academic departments and directors of support services did not differ significantly.

Figure 4.2: Mean Scores of Wellness Behaviour Levels of Heads of Academic Departments and Directors of Support Services



4.2.4 Comparison between the mean wellness behaviour levels and mean health risk scores of female and male managers

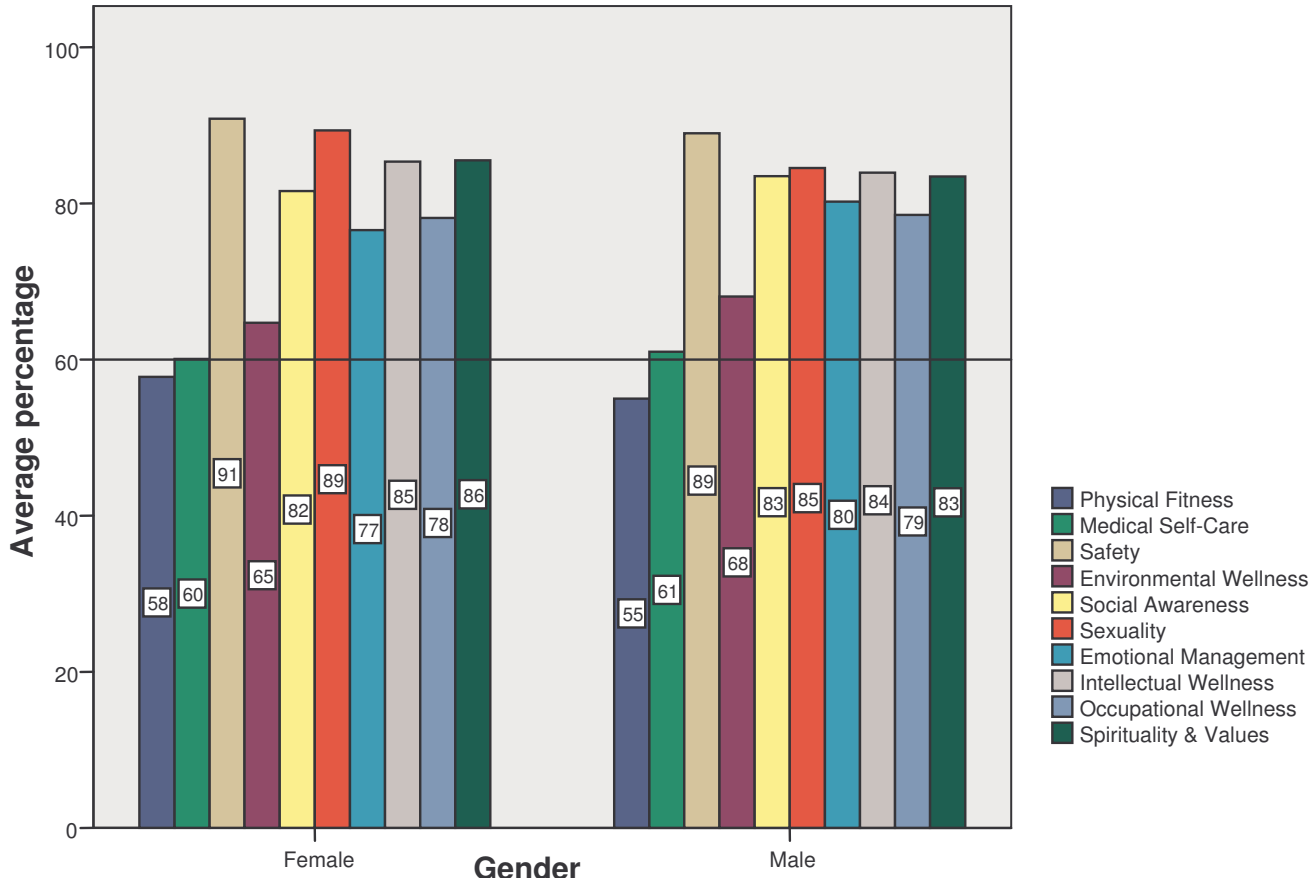
Research question 4: Is there a difference between the mean wellness behaviour levels and mean health risk scores of male and female managers? To compare the mean wellness behaviour levels and mean health risk scores of female and male managers, a *T*-test was done to compare the mean scores. The results are shown in table 4.5.

Table 4.5: *T*-test of Mean Scores between the Wellness Behaviour Levels and Health Risk Scores of Female and Male Managers

Wellness sub-dimension	Female		Male		
	Mean	SD	Mean	SD	P-value
Physical fitness and nutrition	28.89	7.593	27.49	6.690	0.382
Medical self-care	30.04	7.162	30.49	7.553	0.789
Safety	45.43	6.691	44.49	5.214	0.475
Environmental wellness	32.36	7.689	34.03	6.290	0.280
Social awareness	40.79	5.209	41.74	4.669	0.392
Sexuality and emotional awareness	44.68	5.651	42.26	5.108	0.048
Emotional management	38.29	5.792	40.11	6.061	0.184
Intellectual wellness	42.68	4.603	41.97	5.796	0.569
Occupational wellness	39.07	6.733	39.26	6.916	0.903
Spirituality and values	42.75	5.739	41.72	6.143	0.456
Health risk scores	2.50	2.152	2.84	2.185	0.500

Since all the p-values, except the p-value of 0.048 for sexuality and emotional awareness were greater than 0.05, the null hypothesis of no difference between the mean scores could not be rejected. Thus, the observed means of female and male managers did not differ significantly.

Figure 4.3: Mean Scores of Wellness Behaviour Levels of Female and Male Managers



4.2.5 Comparison between the mean wellness behaviour levels and mean health risk scores of post-graduate and PhD graduate managers

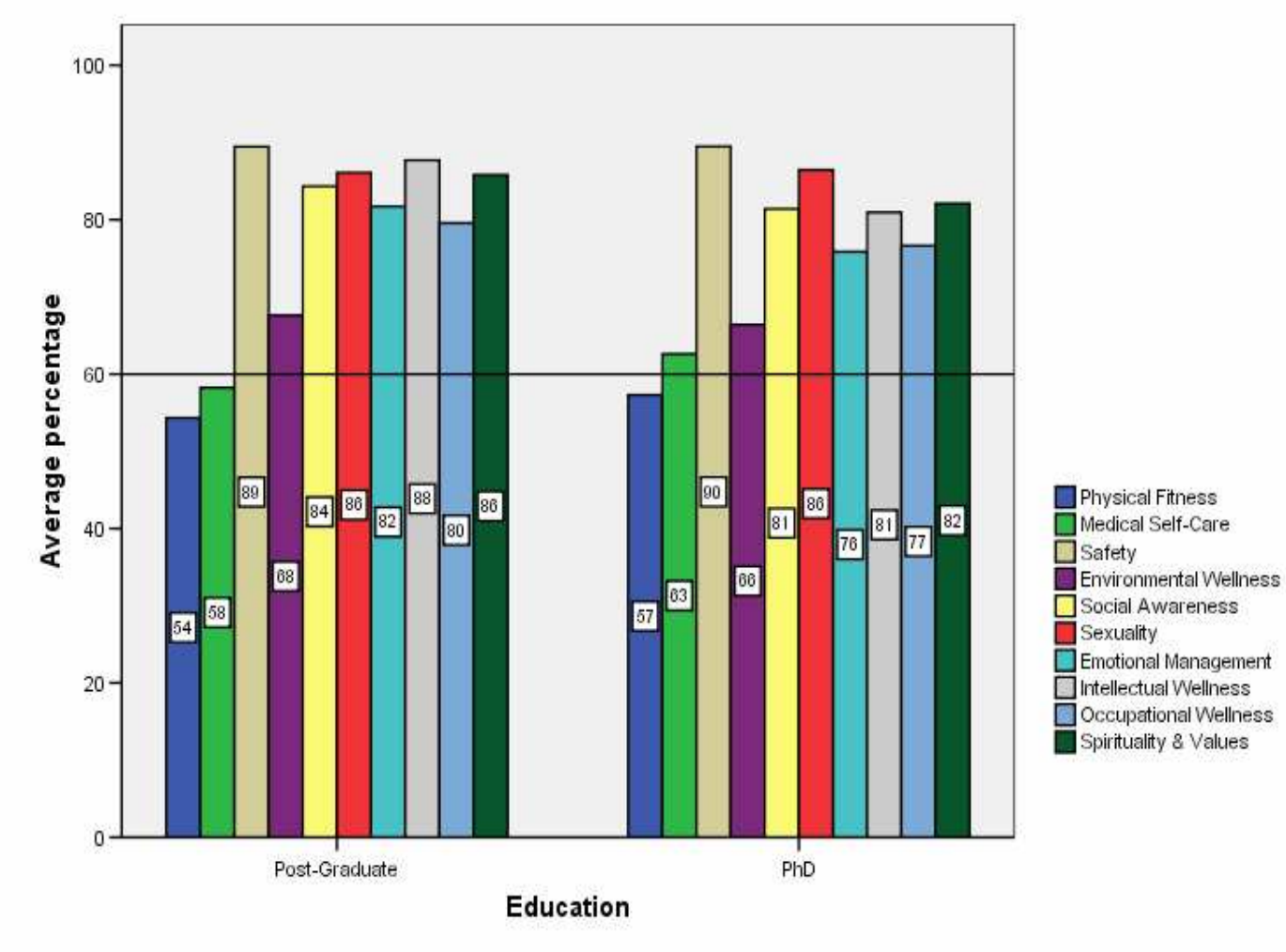
Research question 5: Is there a difference between the mean wellness behaviour levels and mean health risk scores of post-graduate and PhD graduate managers? To compare the mean wellness behaviour levels and mean health risk scores of post-graduate and PhD graduate managers, a *T*-test was done to compare the mean scores. The results are shown in table 4.6.

Table 4.6: *T*-test of Mean Scores between the Wellness Behaviour Levels and Health Risk Scores of Post-Graduate and PhD Graduate Managers

Wellness sub-dimension	Post-graduate		PhD graduate		
	Mean	SD	Mean	SD	P-value
Physical fitness and nutrition	27.17	7.307	28.65	6.875	0.351
Medical self-care	29.12	8.880	31.30	6.153	0.203
Safety	44.73	5.119	44.75	6.547	0.989
Environmental wellness	33.80	7.260	33.20	6.014	0.685
Social awareness	42.17	4.324	40.70	5.244	0.172
Sexuality and emotional awareness	43.05	5.468	43.23	5.250	0.883
Emotional management	40.85	6.540	37.93	5.446	0.032
Intellectual wellness	43.85	4.942	40.48	5.164	0.004
Occupational wellness	39.78	6.962	38.33	6.498	0.334
Spirituality and values	42.90	4.989	41.05	6.835	0.167
Health risk scores	2.80	2.261	2.55	1.921	0.586

Since all the p-values, except the p-values of 0.032 for emotional management and of 0.004 for intellectual wellness, were greater than 0.05, the null hypothesis of no difference between the mean scores could not be rejected. Thus, the observed means of post-graduate and PhD graduate managers did not differ significantly.

Figure 4.4: Mean Scores of Wellness Behaviour Levels of Post-Graduate and PhD Graduate Managers



4.2.6 Comparison between the mean wellness behaviour levels and mean health risk scores of the three age groups

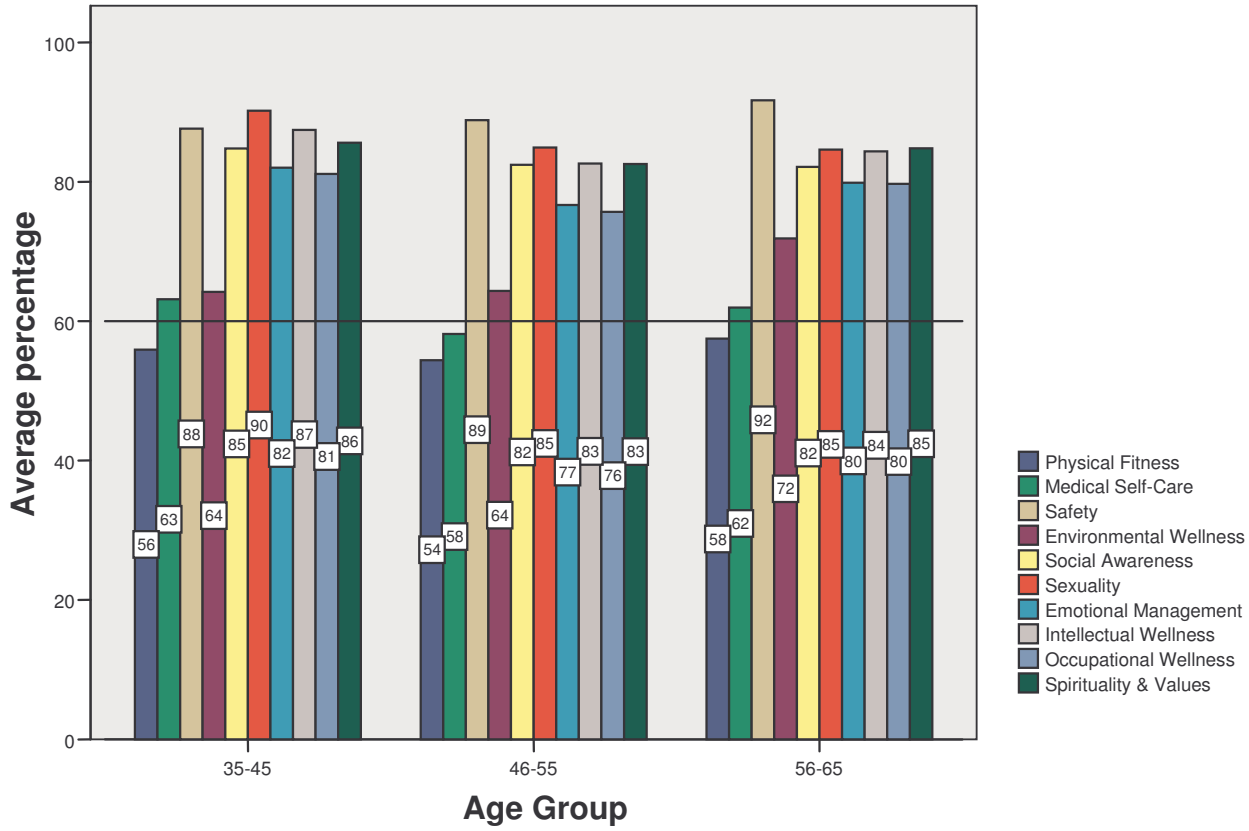
Research question 6: Is there a difference between the mean wellness behaviour levels and mean health risk scores of managers according to their age groups? A one-way analysis of variance was done to compare the means of the three age groups (35-45, 46-55 and 56-65). The results are reflected in table 4.7.

Table 4.7: ANOVA to Compare the Mean Scores between the Wellness Behaviour Levels and Health Risk Scores of the Three Age Groups

AGE (Years)							
	35-45		46-55		56-65		
Wellness sub-dimension	Mean	SD	Mean	SD	Mean	SD	P-value
Physical fitness and nutrition	27.95	9.552	27.19	6.476	28.75	5.524	0.661
Medical self-care	31.57	8.750	29.08	6.185	30.97	7.706	0.400
Safety	43.81	6.030	44.42	6.299	45.84	4.684	0.397
Environmental wellness	32.10	7.341	32.17	6.092	35.94	6.604	0.038
Social awareness	42.38	5.035	41.22	5.249	41.06	4.257	0.593
Sexuality and emotional awareness	45.10	5.019	42.44	5.521	42.31	5.239	0.128
Emotional management	41.00	5.683	38.33	6.113	39.94	6.005	0.245
Intellectual wellness	43.71	4.233	41.31	6.122	42.19	5.239	0.274
Occupational wellness	40.57	5.372	37.83	7.755	39.84	6.456	0.278
Spirituality and values	42.81	3.970	41.28	6.755	42.41	6.283	0.599
Health risk scores	2.52	2.228	2.58	2.285	3.03	2.024	0.620

Since all the p-values were greater than 0.05, the null hypothesis of no difference between the mean scores could not be rejected. For environmental wellness it can be concluded that the means are not all equal, since p = 0.038. However, from the Post Hoc Tests, the p-value of 0.122 between age group 56-65 and 35-45 and the p-value of 0.062 between age group 56-65 and 46-55 indicated that there was not a significant difference in the mean environmental wellness scores between the age group 56-65 and the other two age groups. Thus, the observed means of the three age groups did not differ significantly.

Figure 4.5: Mean Scores of Wellness Behaviour Levels of the Three Age Groups



4.2.7 A wellness prediction model

Research question 7: Can a wellness prediction model be used, as a holistic dependant variable, to measure wellness against all possible independent variables or factors? 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 is 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 had fallen into one group characterised by high wellness behaviour levels and low health risk scores. Thus, a comparison was not possible.

The combined wellness behaviour levels of managers at the academic university and the technology university were high with an average of 76.80% (see figure 4.7). The only wellness sub-dimension under the 60th percentile was physical fitness and nutrition. From an organisational development perspective, attention

should be given to an intervention strategy to deal with the low physical fitness and nutritional levels amongst managers at both the sample universities (see figure 4.6).

Figure 4.6: Combined Average Wellness Behaviour Levels of Managers at the Academic University and Technology University

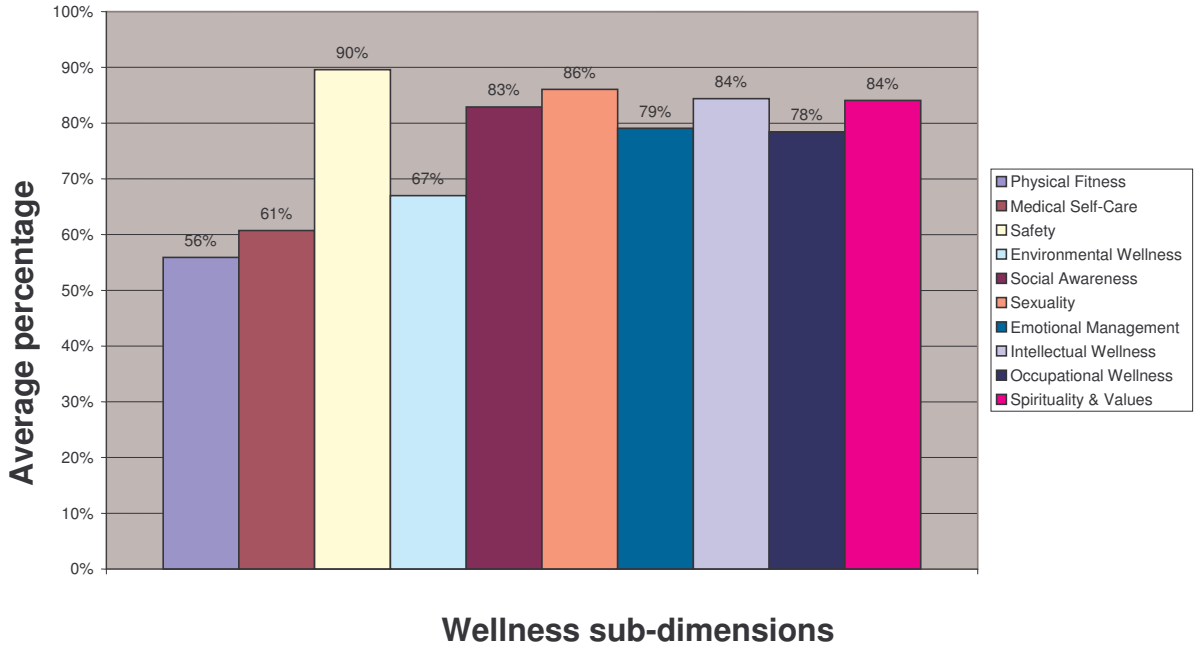
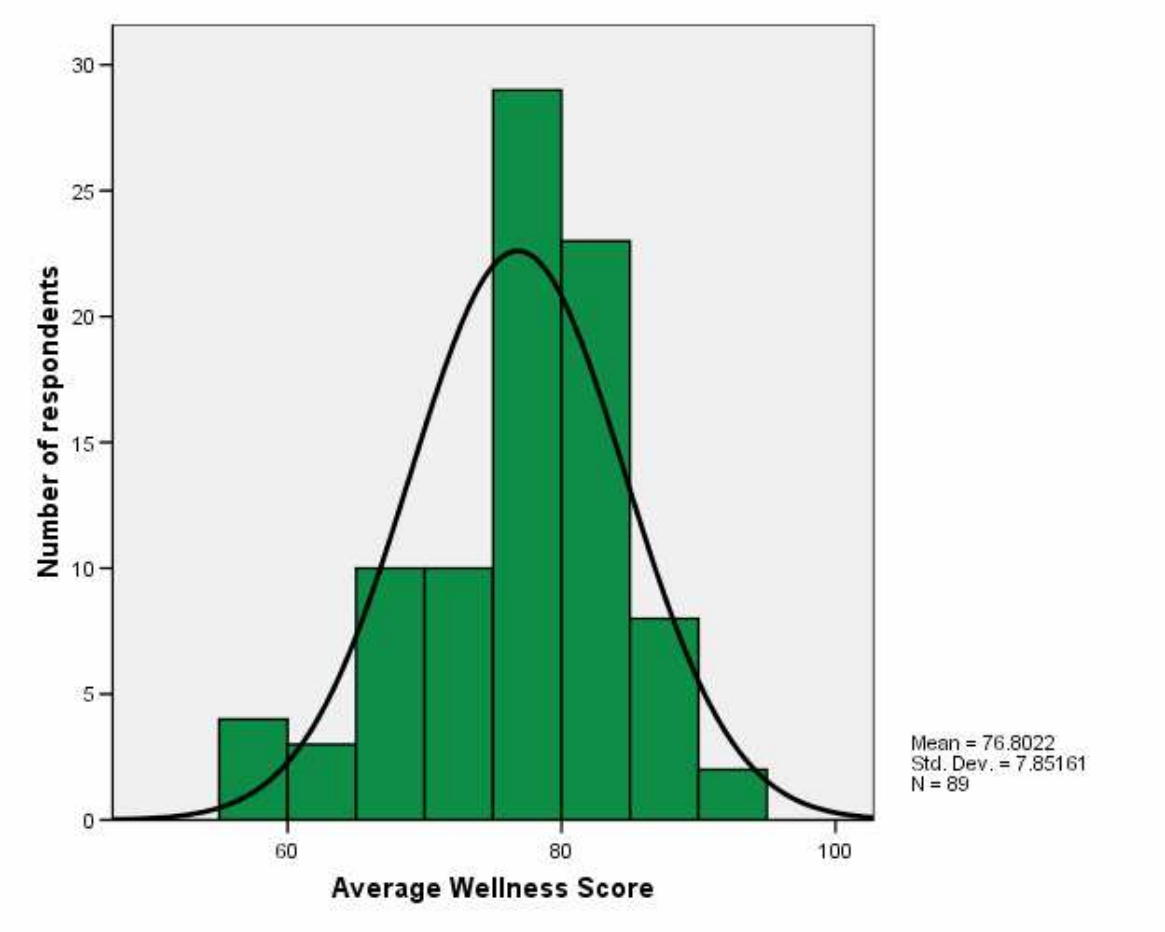


Figure 4.7: Distribution of the Wellness Behaviour Levels of Managers



The wellness behaviour levels of managers ranged between 56% and 90% with an average score of 76.80%. The two lowest scores were physical fitness and nutrition (56%) and medical self-care (61%), while safety had obtained the highest score (90%).

4.3 SUMMARY

This chapter has provided the results of the research study. The findings on the seven research questions were briefly discussed. These findings will be further discussed in Chapter Five.