CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

Data files were set within the computer statistical package 'STATA' version 10, data entered once and then verified during the second direct entry. Descriptive and comparative statistics were used to achieve the study objectives. The descriptive tests (frequency distributions and percentages) were used to synthesize patient and critical care nurse respondents' socio-demographic data and interview schedule. Comparative statistics were employed to synthesize the constructs (anatomy and physiology, psychology, lifestyle, medication, dietary, physical, symptom management and miscellaneous) scores and total questionnaire scores to compare interviews within the total sample group and to compare between population groups. Statistical tests included Kappa, Kruskal Wallis and Chi-square non parametric test, two-sample t-test; Hotelling's paired T^2 test, Student's two sample t-test and Pearson's correlation coefficient. Testing was done at the 0.05 (p=0.05) level of significance and insured a power of at least 95% accuracy in findings. Findings will be discussed on scale, construct, and study group and item levels.

In this chapter, the descriptive and comparative statistics employed to describe and synthesize the data and interpretation of the research findings will be presented.

4.2 APPROACHES TO DATA ANALYSIS

Descriptive statistics were used to present the interpretation of the socio-demographic data of patients with a diagnosis of acute myocardial infarction (AMI) and critical care nurse respondents. Percentages in these findings were rounded off to two decimal points. See Tables 4.3 and Table 4.4.

Descriptive and comparative statistics were then employed to describe and synthesize the distribution of perceptions of patient and nurse respondent's responses to 37 items (Q1 to Q37) on cardiac patient learning needs inventory (CPLNI) that is inclusive of eight major constructs (anatomy and physiology, psychology, lifestyle, medication, dietary, physical,

symptom management and miscellaneous) scores and to compare groups within the total sample and to compare between population (patients and nurses) groups.

The construct scores for anatomy and physiology, psychology, lifestyle, medication, dietary, physical symptom management and miscellaneous can respectively range from 5 – 25; 4 – 20; 3 – 15; 5 – 25; 5 – 25; 6 – 30; 6 – 30 and 3 – 15. Frequency responses and percentage calculations using the Likert scale responses enabled the rank ordering of items in terms of level of importance of cardiac patient learning needs inventory between the population groups for the total sample (n=76). (See Table 4.5).

Proportionate estimations were employed to describe variances (SD) in the population groups and subgroup items (age, gender, diagnosis, population group, religion, education and previous admission). The assessment of level of agreement between population groups was done using Kruskal Wallis equality of population test for evidence of differences between population groups. (See Tables 4.6, Table 4.7 and Table 4.8).

When comparing scores within the total sample, a 2-sample t-test was employed using multivariate observations consisting of total construct scores for anatomy and physiology, psychology, lifestyle, medication, dietary, physical symptom management and miscellaneous. Following the outcome of the multivariate test, both population groups were compared to assess where the differences were in the construct scores for anatomy and physiology, psychology, lifestyle, medication, dietary, physical symptom management and miscellaneous that the Hotelling's T^2-test found. When comparing between population groups the approach was like the latter except both Hotelling's two sample T2 test and Student's two sample t-test were used. Testing was done at the 0.05 level of significance. (See Table 4.10 and Table 4.11).

Hotelling's paired t-test was specifically applied to the study to test the differences in mean responses between the population groups. The paired t-test statistically determines whether the means between the responses of the population groups are significantly different (Rosnow & Rosenthal, 1996). Whereas the application of Student's t-test to the study was to test the differences between the responses of one population group (group 1) and another (group 2). The Student –t-test statistically determined whether the means of the two groups are significantly different (Rosnow & Rosenthal, 1996).

Pearson's correlation coefficient was applied to summarize the magnitude and direction of a relationship between two variables as well as to test hypotheses about population correlations respectively (Polit, Hungler & Beck, 2001). This test was used to determine the strength of the relationship in the CPLNI in order to determine concurrent validity; the paired t-test is used when a researcher wishes to compare the means of two groups in order to determine whether the differences are significant or caused by chance (Brink, *et al*., 2006). The paired t-test was used to test the difference between CPLNI mean score of patient and nurse respondents in order to determine validity of the CPLNI. On the other hand, the Kappa test was used to assess the consistency of CPLNI through a panel of experts. The Chi-square statistical test was used to assess differences in the proportionate estimations of the total sample. (See Tables 4.6, Table 4.7) and the former (Kappa test) is displayed in Table 4.2.

As a convenience sample was used, it should be borne in mind that findings cannot be extrapolated to all patients and nurses in cardiac intensive care units. It was hoped however that because of homogeneity of the sample the findings may be of interest to other cardiac intensive care units, clinical practice and education of critical care nurses.

4.3 RESULTS AND FINDINGS

As the study was conducted in two stages the results and findings section begins with the process required for validation of the instrument for use in the study. This is followed by stage two the process for testing the instrument on the study related population groups, which is described as the main study.

4.4 STAGE ONE:

Stage one related to validation of the proposed instrument for use in the study.

4.4.1 Characteristics of Panel of Experts (n=7)

This section comprised of three (3) items, which were research code, age, academic qualifications and position held (refer Appendix C). As all the participants were vastly experienced and senior staff members in the cardiology department, years of experience was not taken into consideration.

Table 4.1: Demographic data for panel of experts (n=7)

Item	Demographic data	F	%
Q1	Age in years		
	- 20 – 29	1	14.28%
	- 30 – 39	2	28.57%
	- 40 – 49	1	14.28%
	- 50 – 59	3	42.85%
Q2	Academic qualifications		
	- masters in medicine	3	42.86%
	- masters in intensive care nursing	1	14.28%
	- degree in medicine	1	14.28%
	- degree (patient)	1	14.28%
	- diploma in intensive care nursing	1	14.28%
Q3	Position held		
	- registrar	1	14.28%
	- consultant	3	42.85%
	- lecturer university	1	14.28%
	- shift leader	1	14.28%
	- unemployed	1	14.28%

Age groups of the panel of expert participants were as follows: one (14, 28%) of the seven expert participants were between 20 –29 years, two (28, 57%) was between 30 – 39 years, one (14, 28%) was between 40 – 49 years, whereas three (42, 85%) were between 50 – 59 years.

Academic qualifications of the participant experts group were as follows: out of the seven experts panel, one (14,28%) had a Degree in Medicine, three (42,85%) had a Masters degree in Medicine, one (14,28%) had a Masters degree in Critical Care Nursing, one (14,28%) had a Diploma in Intensive Care Nursing , one (14,28%) had a Degree.

Position held by the participant experts group included: one (14, 28%) of the seven participants was a Registrar, three (42, 85%) of them were consultants, one (14, 28%) was a lecturer at the University, one (14, 28%) was shift leader and one (14, 28%) was unemployed. These findings are displayed in Table 4.1.

4.4.2 Reliability of the Instrument for Experts Group

In this part of the study, the Cronbach's alpha coefficient was applied to assess the reliability of the summative rating scale (Likert scale) on the 37 items (Q1 to Q37). It is a measure of internal consistency and determines the degree of relatedness or strength of

association between the construct variables. In order to maximize the alpha interpretation of the panel of experts a number of items were constant in the analysis sample and therefore dropped from the analysis. These items included Q11, Q12, Q22, Q30, Q31 and Q32 and reversed items Q3, Q9 and Q35. As such 31 items were included in the analysis and the scale reliability coefficient for the patient expert group was not valid due to less representation (only one sample size). Further, the reliability of the tool for the nurse's group reflected that three items (Q14, Q15 and Q31) were constant in the analysis sample and therefore were dropped from the analysis. As such, 34 items were included in the analysis and the scale reliability coefficient was 1, 00. The expert consultant calculated a scale reliability coefficient of 0.9550.

The value for the Cronbach's alpha lies between 0.00 and +1.00, high values reflect a high internal consistency (Polit & Beck, 2008:455). A reliability of 0.80 is considered the lowest acceptable coefficient for a well developed measurement tool, whereas for a newly developed instrument, a reliability of 0.70 is considered acceptable. A coefficient of 1.00 indicates perfect reliability and a coefficient of 0.00 indicating no reliability (Burns & Grove, 2007:365).

4.4.3 Assessment of Agreement between Experts

In this part of the study, the measurement of agreement between members of the expert group the Kappa test was applied. In this test the level of agreement could be the same or higher than the expected agreement. In order to make meaningful comparisons the researcher must take into consideration the size of Kappa and the probability. The ranges on which to base interpretations of Kappa test are as considered as follows;

< 0.4 is considered weak agreement

0.4 to 0.7 moderate agreement and

> 0.7 adequate / good agreement.

Findings are displayed in **Table 4.2** below.

Table 4.2: Level of agreement between experts (n=7)

Item	Agreement	Expected agreement	Kappa test	Z-test	Probability > Z
Q1	71.43%	55.10%	0.363	1.25	0.106
Q2	28.57%	22.45%	0.079	0.48	0.314
Q3	71.43%	59.18%	0.300	0.79	0.214
Q4	57.14%	42.86%	0.250	1.17	0.122
Q5	57.14%	32.65%	0.636	0.41	0.080
Q6	28.57% #	36.73%	0.129	0.50	0.691
Q7	57.14%	53.06%	0.087	0.35	0.363
Q8	71.43%	38.78%	0.533	2.40	0.008*
Q9	71.43% #	73.47%	- 0.077	-0.44	0.670
Q10	42.86%	55.10%	0.273	- 0.94	0.825
Q11	71.43%	71.43%	0.000	0.00	0.500
Q12	85.71%	85.71%	0.000	0.00	0.500
Q13	71.43%	61.22%	0.2632	1.71	0.044*
Q14	71.43%	71.43%	0.000	0.00	0.500
Q15	57.14%	57.14%	0.000	-	-
Q16	71.43%	55.10%	0.364	1.31	0.095
Q17	42.86% #	46.94%	0.077	0.30	0.618
Q18	57.14%	51.02%	0.125	0.64	0.263
Q19	57.14% #	61.22%	0.105	-0.68	0.753
Q20	57.14%	38.78%	0.300	1.29	0.099
Q21	100.00%	59.18%	1.000	2.65	0.041*
Q22	71.43%	71.43%	0.000	0.00	0.500
Q23	100.00%	75.51%	1.000	2.65	0.041*
Q24	85.71%	55.10%	0.682	2.46	0.007*
Q25	85.71%	55.10%	0.682	2.46	0.007*
Q26	85.71%	65.31%	0.588	1.71	0.044*
Q27	71.43%	63.27%	0.222	0.85	0.198
Q28	71.43%	61.22%	0.263	1.71	0.044*
Q29	42.86% #	44.90%	0.037	-0.16	0.565
Q30	85.71%	85.71%	0.000	0.00	0.500
Q32	85.71%	85.71%	0.000	0.00	0.500
Q33	57.14%	55.10%	0.044	0.16	0.435
Q34	71.43%	75.51%	0.166	0.44	0.670
Q35	14.29% #	40.82%	0.448	1.72	0.957
Q36	28.57% #	38.78%	-0.167	-0.60	0.727
Q37	57.14%	48.98%	0.160	1.25	0.106

Key: * = statistically significant
= poor expected agreement

There was good (k>0.7) agreement on the following clusters and their specific items: the cluster anatomy and physiology, all the five items were good (Q1,Q2, Q3, Q4 and Q5); in the psychological factors, only one item out of four was good (Q7); for the lifestyle factors, two items out of three were good (Q11 and Q12); in medication information, three items

out of five were good (Q14, Q15, Q16); dietary information, three items out of five were good (Q18, Q20, Q22); in physical activity, only one item out of six was good (Q27); in symptom management, four items out of six were good (Q30, Q32, Q33 and Q34) and in miscellaneous, only one item out of three was good (Q37).

There was a moderate (k=0.4 – 0.7) agreement on the following clusters of specific items: anatomy and physiology, three items out of five (Q2, Q4 and Q5); psychological factors, only one item out of four (Q7); lifestyle factors, only one item out of three (Q10); medication information, two items out of five (Q15 and Q17); dietary information, three items out of five (Q18, Q19 and Q20); symptom management, two items out of six (Q29 and Q33); miscellaneous, one out of thee (Q37).

The following clusters had a poor (k<0.4) agreement and poor expected agreement but the probability was not significant (p >0.05); psychological factors, two out of four (Q6 and Q9); medication information, one item (Q17); dietary information, one item out of five (Q19); symptom management, one item out of six (Q29); miscellaneous, two items out of two (Q35 and Q36).

The following clusters had good/poor expected agreements, and probability was significant (p <0.05): psychological factors, one item out of four (Q8); medication information, one item out of five (Q13); dietary information, one item out of five (Q21); physical activity, five items out of six (Q23, Q24, Q25, Q26 and Q28).

From the above result, the expert groups were senior staff working in the coronary care unit, therefore the score reliability was very good between group and subgroup. There was strong agreement on the Kappa statistical test.

4.5 STAGE TWO: MAIN STUDY

The total sample was comprised of 76 (n=76) respondents. Fifty three percent (53%; n=40) comprised of patients and 47% (n=36) nurses. Findings are displayed in **Figure 4.1** below.

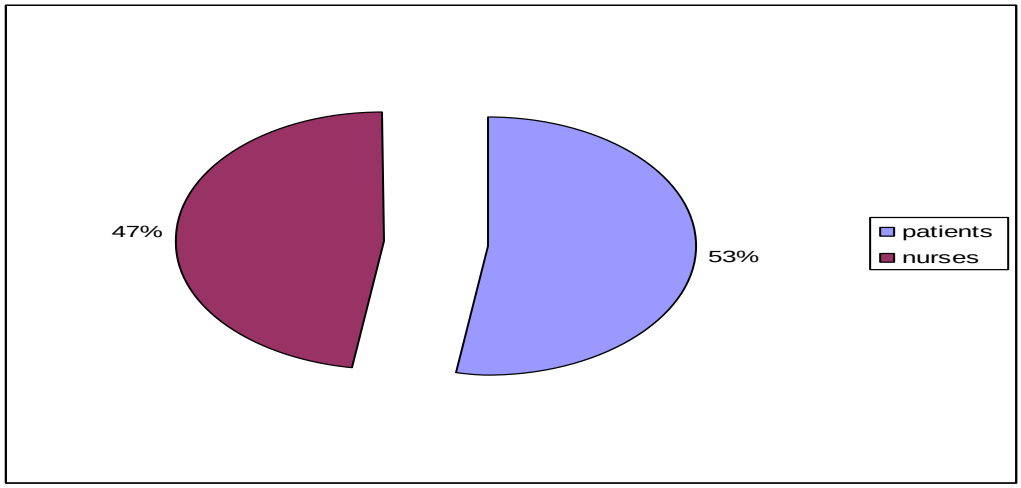

Figure 4.1: Distribution of the total sample (n=76) by patient and nurse population groups

Age distribution of the total sample was highest (25.00%; n=19) in the category between the ages of 40 – 49 years, followed by a close 24.63% (n=18) between the ages 70-79, followed by 14.50% (n=11) respectively in categories of 50 – 59 and 60-69 years, and 14.47% between the ages of 30 – 39 years. The lowest 1.32% (n= 1) was between 20-29 years, followed by 5.58% (n=5) in the category > 80 years in age. Findings are displayed in **Figure 4.2** below.

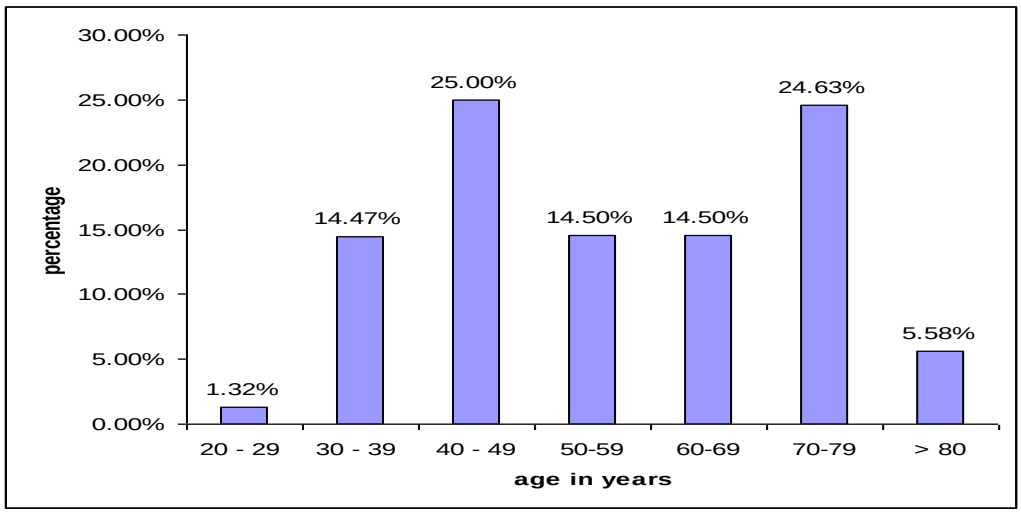

Figure 4.2: Distribution of age in years for the total sample (n=76)

4.5.1 Questionnaire Section 1: Patient Socio-demographic Data

This section was composed of twelve items related to the patient, which were obtained through prospective record review. Results of this process are summarized in **Table 4.3.**

for the sample. Items were combined to form coherent groups to facilitate discussion of data. The items related to research code, date of admission and discharge were excluded.

Table 4.3: Socio-demographic profile of patient participants in Group 1 (n=40)

Item	Socio-demographic variables	Group 1	
		F	%
Q1.2	Age (years)		
	- 50 – 59	7	17.50%
	- 60 – 69	10	25.00%
	- 70 – 79	18	45.00%
	- > 80	5	12.50%
Q1.3	Gender		
	- male	30	75.00%
	- female	10	25.00%
Q 1.5	Diagnosis		
	- ACS	25	62.50%
	- STEMI	10	25.00%
	- NSTEMI	1	2.50%
	- AMI	4	10.00%
Q1.6	Home language		
	- English	33	82.50%
	- Afrikaans	4	10.00%
	- Tswana	1	2.50%
	- Sotho	1	2.50%
	- Ndebele	1	2.50%
Q1.7	Population Group		
	- Black	3	7.50%
	- White	25	62.50%
	- Indian	7	17.50%
	- Coloured	5	12.50%
Q1.8	Religion		
	- Christian	32	80.00%
	- Hindu	3	7.50 %
	- Muslim	4	10.00%
	- Other	1	2.50%
Q1.9	Occupation		
	- unemployed	10	25.00%
	- housewife	3	7.50%
	- retired pensioner	19	47.50%
	- employed	8	20.00%
1.10	Education level		
	- < High school	4	10.00%
	- High school	29	72.50%
	- Some college	4	10.00%
	- University	3	7.50%
1.11	Previous CCU admission		
	- no	27	67.50%
	- yes	13	32.50%

Age, gender and diagnosis

Amongst the 40 participants (group 1), the highest number of respondents (45%, n=18) were between the age of 70 – 79 years, followed by 25% (n=10) in the 60 – 69 years, followed by 17.50% (n=7) between ages of 50 – 59 years, whereas 12.50% (n=5) were greater than 80 years old.

Male respondents accounted for 75% (n=30) and females 25% (n=10) of the sample. The patients with a diagnosis of acute coronary syndrome (ACS) accounted for 62.50% (n=25), followed by segment elevation myocardial infarction respondents with 25.00% (n=10); acute myocardial infarction respondents 10% (n=4) and Non ST Segment elevation myocardial infarction respondents 2.50% (n=1).

Home language, population group and religion

Home language distribution of the patients' sample (n=40) were highest 82.50% (n=33) for English, followed by 10% (n=4) for Afrikaans, and 2.50% (n=1) for three languages respectively same (Tswana, Sotho, Ndebele). 62.50% of patients (n=25) were White, followed by 17.50% (n=7) Indian, and 12.50% (n=5) were Coloured. Also 7.50% (n=3) only were Black. In terms of the religious distribution of the total patients distribution of 40 (n=40) findings indicated a majority of 80.00% (n=32) responses as Christian followed by Muslim 10% (n=4), Hindu (7.50%; n= 3), other 2.50% (n= 1). There were no responses to the Jewish, traditional African or none categories.

Occupation, educational level and previous CCU admission

Of the patient total sample size (n= 40), the highest number (47.50%, n= 19) were retired, followed by 25% (n= 10) who were unemployed, and 20% (n= 8) were employed, the lowest response of 7.50% (n= 3) was constituted of house wives. In terms of educational level, of the patient total sample of 40, (72.50%; n= 29) had High School education, followed by the same result for 'some College' (10%, n= 4) and 'less than High School (10%, n= 4), respectively, whereas a lower 7.50% (n=3) respondents had University education. In regard to previous admission in the coronary care unit, the highest 67.50% (n=27) did not have previous admission in CCU followed by the minority 32.50% (n=13) who had previous CCU admission.

4.5.2 Questionnaire Section 1: Nurses Sociodemographic Data

This section included 6 items related to the critical care nurses, which was obtained through a structured interview. The items of this group are as follows: research code, age, professional qualification, educational qualification, experience, relationship to patient. The results of this process are summarized in **Table 4.4.**

Table 4.4: Socio-demographic profile of nurse participants in Group2 (n=36)

Item	Socio-demographic variables	Group 2	
		f	%
Q1.2	Age (years)		
	- 20 – 29	1	2.78%
	- 30 -39	11	30.56%
	- 40 – 49	19	52.77%
	- 50 – 59	4	11.11%
		1	2.78%
Q1.3	Professional qualifications		
	- ICU nurse	36	100.00
Q 1.4	Educational qualification		
	- diploma	27	75.00%
	- master's	9	25.00%
Q 1.5	Experience		
	- < 4 years	3	8.33%
	- 5 – 9 years	11	30.56%
	- 10 – 14 years	7	19.44%
	- 15- 19 years	7	19.44%
	- > 20 years	8	22.22%
Q1.6	Relationship to patient		
	- nurse	12	33.33%
	- shift leader	20	55.55%
	- clinical instructor	2	5.56%
	- unit manager	2	5.56%

Age

On the nurses sample (n=36) was the highest (52.77%; n=19) in the age between 30 – 39 years, followed by 30.56% (n=11) between the age of 20 – 29 years followed by 11.11% (n=4) between 40 – 49 years. The lowest were the ages between 50 – 59 years.

Professional and educational qualifications

In the total sample of nurses, 100% (n=36) were critical care nurses. In terms of educational qualifications, the highest 75.00% (n=27) had a diploma, followed by 25.00% (n=9) who had a master's degree.

Experience and relationship to the patient

With regard to the experience of the total sample of 36, the majority 30.56% (n=11) had

5 to 9 years of experience, and 22.22% (n= 8) who had more than 20 years of experience. Fourteen respondents (38.88%) were obtained for two experience categories: 10-14 years and 15-19 years respectively, and 8.33% (n=3) for less than 4 years. Respondents relationship to the patients which were most frequent 55.55% (n=20) were shift leaders followed by 33.33% (n=12) who were primary (bedside) critical care nurses. Clinical instructors represented 5.56% (n=2), whereas 5.56% (n=2) were unit manager respondents. In the context of the present study site, all ICU trained staff are the shift leaders and they are all on bedside of patients. They have a rotational shift leading system.

4.4.2 Questionnaire Section 2 : Item Analysis

The instrument used in this study is the cardiac patient learning need inventory (CPLNI). Each item on the instrument begins with the stem 'I need to know' in the patient's version and, in the nurse's version 'the patient needs to know'. The respondents were asked to grade the items into one of five importance levels from not important to very important.

In this study, a comments section was added to enable additional comments to be made by participants as deemed necessary. Findings of this process are summarized for the total (n=76) sample and displayed in **Table 4.5** below.

Table 4.5 : Frequency distribution of importance of need statements per item for the total population group (n=76)

Item	Statement	Not Important 1		Slightly Important 2		Moderately Important 3		Important 4		Very Important 5	
		f	%	f	%	f	%	f	%	f	%
Q1	Why did I have chest pain?	-	-	-	-	-	-	1	1.32	75	98.68
Q2	What the heart looks like and how it works including the blood supply to the heart muscle?	-	-	1	1.32	3	3.95	14	18.42	58	76.32
Q3	What causes a heart attack to occur?	-	-	-	-	-	-	5	6.58	71	93.42
Q4	What happens when a person has a heart attack?	-	-	-	-	2	2.63	4	5,26	70	92,11
Q5	How long the damaged heart muscle takes to heal?	-	-	1	1.32	-	-	13	17.11	62	81.58
Q6	What is the usual psychological response following a heart attack?	-	-	-	-	3	2.63	14	18.42	60	78.95
Q7	About the importance of talking to someone about my fears , feelings and despair?	-	-	1	1.32	4	5.26	15	19.74	56	73.68
Q8	What effect stress has on the heart?	-	-	-	-	1	1.32	9	11.84	66	86.84
Q9	What can I do to reduce stress in my life?	-	-	1	1.32	-	-	8	10.53	67	88.16
Q10	What the term ‘lifestyle factors’ means?	-	-	1	1.32	2	2.63	18	23,68	55	72.37
Q11	Which lifestyle factors may have been contributed to my having suffered a heart attack?	-	-	-	-	-	-	7	9.21	69	90.79
Q12	What can I do to reduce the chances of my having another heart attack?	-	-	-	-	2	2.63	5	6.58	69	90.79
Q13	The general rules about taking medication?	-	-	-	-	2	2.63	6	7.89	68	89.47

Table 4.5 : Frequency distribution of importance of need statements per item for the total population group (n=76) *(continued)*

Item	Statement	Not Important 1		Slightly Important 2		Moderately Important 3		Important 4		Very Important 5	
		f	%	f	%	f	%	f	%	f	%
Q14	Why I am taking each of the medications that I am on?	-	-	1	1.32	1	1.32	5	6.58	69	90.79
Q15	When I should take each of the medications that I am on?	-	-	-	-	-	-	8	10.53	68	89.47
Q16	What the potential side effects are of each of the medications that I am on ?	-	-	1	1.32	-	-	5	6.58	70	92.11
Q17	What I should do if I have a problem with taking of my medication?	-	-	-	-	-	-	14	18.42	62	81.58
Q18	General rules about eating?	-	-	-	-	1	1.32	17	22.37	58	76.32
Q19	How certain items in my diet may affect my heart?	-	-	-	-	2	2.63	10	13.16	64	84.21
Q20	What the cholesterol is and what it means?	1	1.32			1	1.32	8	10.53	66	86.84
Q21	What foods may lead to raised cholesterol?	-	-	1	1.32	1	1.32	5	6.58	69	90.79
Q22	What changes I will need to make to my diet if any?	1	1.32	1	1.32	1	1.32	13	17.11	60	78.95
Q23	The general guidelines about physical activity after a heart attack?	-	-	-	-	-	-	10	13.16	66	86.84
Q24	When I can resume driving?	-	-			3	3.95	18	23.68	55	72.37
Q25	What physical restrictions I may have if any?	-	-	1	1,32			21	27.63	54	71.05

Table 4.5 : Frequency distribution of importance of need statements per item for the total population group (n=76) *(continued)*

Item	Statement	Not Important 1		Slightly Important 2		Moderately Important 3		Important 4		Very Important 5	
		f	%	f	%	f	%	f	%	f	%
Q26	How to know when I can increase my level of activities?	-	-	-	-	1	1.32	15	19.74	60	78.95
Q27	When I can resume sexual activity?	-	-	1	1.32	4	5.26	11	14.47	60	78.95
Q28	When I can return to work?	-	-	-	-	4	5.26	14	18.42	58	76.32
Q29	The different causes and types of chest pain?	-	-	-	-	3	3.95	8	10.53	65	85.53
Q30	What to do if I get chest pain?	-	-	-	-	-	-	5	6.58	71	93.42
Q31	What are the signs and symptoms of a heart attack?	-	-	-	-	-	-	4	5.26	72	94.74
Q32	When to call the doctor (GP) or an ambulance?	-	-	-	-	1	1.32	6	7.89	69	90.79
Q33	When I am mostly likely to suffer chest pain?	-	-	-	-	2	2.63	12	15.79	62	81.58
Q34	When and how to use the GTN spray or tablets?	-	-	1	1.32	1	1.32	7	9.21	67	88.16
Q35	What support is available when I am discharged?	-	-	-	-	-	-	17	22.37	59	77.63
Q36	What support is available for my family ?	-	-	-	-	2	2.63	19	25.00	55	72.37
Q37	What tests and investigations I will have in the future with regard to my heart?	-	-	-	-	4	5.26	7	9.21	65	85.53

4.5.3.1 Frequencies and percentages for total (n=76) sample

Findings are displayed in **Table 4.5**. Data were analyzed to identify the distribution of 37 need statements that were agreed upon by the total population group. The findings are displayed from highest value to the lowest. The results showed that the majority of the participants (patients and nurses) agreed very highly with the nine need statements items (Q31, Q3, Q30, Q16, Q11, Q12, Q14, Q21 and Q32). These needs statements were 'when did I have chest pain' (n=75; 98.68%), 'what are the signs and symptoms of a heart attack' (n=71; 94.74%), 'what causes a heart attack to occur' and 'what to do if I get chest pain' both respectively (n=71; 93.42%), 'what happens when a person has a heart attack', 'what are the potential side effects of the medication that I am on' both (n=70; 92.11%), 'which lifestyle factors may have contributed to my having suffered a heart attack', 'what I can do to reduce the chances of my having another heart attack', 'why I am taking each of the medications that I am on', 'what the potential side effects are of each of the medications that I am on', 'what foods may lead to raised cholesterol', 'when to call the doctor (GP) or an ambulance', both at 90.79% (n=69) respectively.

The twelve need statements; Q13, Q15, Q9, Q34, Q8, Q23, Q29, Q37, Q19, Q5, Q17 and Q33, received good agreements. These need statements were 'the general rules about taking medication' (n=68; 89.47%), followed by 'what can I do to reduce stress in my life' (n=67; 88.16%), 'when and how to use the GTN spray or tablet' (n=67; n=88.16%), followed by 'what effects stress has on the heart' (n=66; 86.74%), 'the general guidelines about physical activity after a heart attack' (n=66; 86.84%), followed by how certain items in my diet may affect my heart' (n=64; 84.21%), followed by 'how long damaged heart muscle takes to heal' (n=62; 81.58%), 'what I should do if I have a problem with my medication' (n=62; 81.58%) and 'when I am most likely to suffer chest pain' (n=62; 81.58%).

The thirteen need statements Q6, Q22, Q26, Q27, Q35, Q2, Q18, Q28, Q7, Q10, Q24, Q36, Q25 mostly ranked low, but within normal range. The results also showed a good agreement with the need statement but they were considered as low. These need statements were 'what is the usual psychological response following a heart attack' (n=60; 78.95%), 'what changes I will need to make to my diet, if any' (n=60; 78.95%), 'how to know when I can increase my level of activities' (n=60; 78.95%), 'when I can resume sexual activity

(n=60; 78.95%), followed by 'what support is available when I am discharged home' (n=59; 77.63%), followed by 'what the heart looks like and how it works, including the blood supply to the heart muscle' (n=58; 76.32%), 'general rules about eating' (n=58; 76.32%), 'when I can return to work' (n=58; 76.32%), followed by 'about the importance of talking to someone about my fears, feelings and despair' (n=56; 73.58%), followed by 'what the term lifestyle factors means' (n=55; 72.37%), 'when I can resume driving' (n=55; 72.37%), 'what support is available for my family' (n=55; 72.37%), followed by 'what physical reactions I may have, if any (n=54; 71.05%). All findings are displayed in Table 4.5.

4.5.3.2 Proportion estimation of variances in item scores

Findings are displayed in **Table 4.6** below.

Table 4.6: Proportion estimation (SD) of socio-demographic variables for total sample (n=76)

Variable	Frequency	Proportion	95% confidence interval (CI)
Groups	76		
- Nurses		0.474	0.589
- Patients		0.526	0.641
Age in years	76		
- 20 – 29		-	-
- 30 – 39		0.013	-0.013 – 0.039
- 40 – 49		0.237	0.139 – 0.335
- 50 – 59		0.382	0.270 – 0.493
- 60 – 69		0.289	0.185 – 0.394
- 70 – 79		0.079	0.169 – 0.141
- > 80		-	-
Gender	76		
- female		0.605	0.493 – 0.718
- male		0.395	0.282 – 0.507
Population group (race)	76		
- Black		0.513	0.398 - 0.626
- White		0.329	0.221 - 0.437
- Coloured		0.066	0.009 - 0.123
- Indian		0.092	0.026 - 0.159
Education	76		
- college		0.053	0.001- 0.104
- degree		0.118	0.044 – 0.193
- diploma		0.355	0.245- 0.465
- high school		0.382	0.270- 0.493
- < high school		0.053	0.001- 0.104
- university		0.039	-0.005- 0.084

Using proportion estimation (SD) of socio-demographic variables for a total sample of 76 (n=76), findings indicate that nurses proportion of 0.474 with confidence interval of 0.589, patient proportion of 0.526, confidence interval of 0.641.

Age in years, gender, population group (race)

Age: Amongst 76 participants, the highest proportion of variance was 0.382 between ages of 50 – 59, confidence interval (CI) 0.270 to 0.493; followed by 0.289, CI 0.185 to 0.394 between 60 – 69 years; followed by 0.237, CI 0.139 to 0.335 between 40 – 49 years; followed by 0.079, CI 0.169 to 0.141 between 70 – 79 years. The lowest proportion was 0.013, CI 0.013 to 0.039 between 20 – 29 years.

Gender: Among 76 participants, the highest were females who accounted for 0.605 (proportion SD), CI 0.493 to 0.718. Males were 0.395, CI 0.282 to 0.507.

Population group: among 76 participants, the majority were black with proportion of 0.513, CI 0.398 to 0.626, followed by white with a proportion of 0.329, CI 0.221 to 0.437, followed by Indian with a proportion of 0.092, CI 0.026 to 0.159.

Education

Among 76 participants, the highest number had High School education with a proportion of variance of 0.382, CI 0.270 to 0.493, followed by those who had a Diploma, 0.355, CI 0.245 to 0.465, followed by those who had a degree, with proportion of variance 0.118, CI 0.044 to 0.103. College level and less than High School education had the same proportion of 0.053: College CI 0.001 to 0.104, less than High School CI 0.001 to 0.104. University levels were the lowest with proportion of 0.039, CI 0.005 to 0.084.

Table 4.7: Proportion estimation of socio-demographic variables for patient sample (n=40)

Variable	Frequency	Proportion	95% confidence interval (CI)
Diagnosis	40		
- ACS		0.625	0.468 – 0.782
- AMI		0.100	0.030 – 0.197
- NSTEMI		0.025	-0.026 – 0.076
- STEMI		0.250	0.110 – 0.390
Religion	40		
- Christian		0.800	0.670 – 0.930
- Hindu		0.075	-0.010 – 0.160
- Jehovah Witness		0.025	- 0.026 – 0.076
- Muslim		0.100	0.003 – 0.197
Previous CCU admission	40		
- no		0.675	0.523 – 0.827
- yes		0.325	0.173 – 0.477

Diagnosis, religion, previous CCU admission

Among 40 participants (patient = group 1), the highest were patients with a diagnosis of ACS with a proportion of 0.625 variance, CI 0.468 to 0.782, followed by ST elevation MI, with a proportion of 0.250, CI 0.110 to 0.390, followed by acute myocardial infarction with a proportion of 0.100, CI 0.030 to 0.197.

Religion

The highest were Christians with a proportion of 0.800, CI 0.670 to 0,930, followed by Muslim 0.100, CI 0,003 to 0.197, followed by Hindu 0.075, CI 0.010 to 0.160; the lowest were Jehovah Witness 0.025, CI – 0.026 to 0.076. With regard to previous coronary care unit (CCU) admission, most of the patients were never admitted previously in CCU, as a proportion of 0.675, CI 0.523 to 0.827 as highest, whereas those who were previously admitted in CCU were the lowest with a proportion of 0.325, CI 0.173 to 0.477.

Table 4.8: Comparison of items for differences between population (patients and nurses) groups

Item	Statement	Population				Kruskal-Wallis / Chi-Square tests	Pr
		Group 1		Group 2			
		f	Rank sum	f	Rank sum		
Q1	Why did I have chest pain?	40	1560.00	36	1366.00	1.111	0.292
Q2	What the heart looks like and how it works including the blood supply to the heart muscle?	40	1557.00	36	1369.00	0.057	0.811
Q3	What causes a heart attack to occur?	40	1564.00	36	1362.00	0.338	0.561
Q4	What happens when a person has a heart attack?	40	1549.00	36	1377.00	0.040	0.841
Q5	How long the damaged heart muscle takes to heal?	40	1700.50	36	1225.50	6.166	0.013
Q6	What is the usual psychological response following a heart attack?	40	1667.00	36	1259.00	3.479	0.062
Q7	About the importance of talking to someone about my fears, feelings and despair?	40	1464.00	36	1462.00	1.056	0.304
Q8	What effect stress has on the heart?	40	1665.00	36	1261.00	4.923	0.027
Q9	What can I do to reduce stress in my life?	40	1565.50	36	1360.50	0.224	0.636
Q10	What the term ‘lifestyle factors’ means?	40	1631.50	36	1294.50	1.491	0.221
Q11	Which lifestyle factors may have been contributed to my having suffered a heart attack?	40	1566.00	36	1360.00	0.292	0.589
Q12	What can I do to reduce the chances of my having another heart attack?	40	1560.00	36	1360.50	0.280	0.597
Q13	The general rules about taking medication?	40	1507.00	36	1419.00	0.416	0.519

Table 4.8: Comparison of items for differences between population (patients and nurses) groups *(continued)*

Item	Statement	Population				Kruskal-Wallis / Chi-Square tests	Pr
		Group 1		Group 2			
		f	Rank sum	f	Rank sum		
Q14	Why I am taking each of the medications that I am on?	40	1528.00	36	1398.00	0.062	0.803
Q15	When I should take each of the medications that I am on?	40	1624.00	36	1302.00	2.702	0.100
Q16	What the potential side effects are of each of the medications that I am on?	40	1660.00	36	1266.00	7.136	0.008*
Q17	What I should do if I have a problem with taking of my medication?	40	1554.00	36	1372.00	0.047	0.828
Q18	General rules about eating?	40	1666.00	36	1260.00	3.156	0.076
Q19	How certain items in my diet may affect my heart?	40	1589.00	36	1337.00	0.649	0.421
Q20	What the cholesterol is and what it means?	40	1512.50	36	1413.50	0.238	0.626
Q21	What foods may lead to raised cholesterol?	40	1565.00	36	1361.00	0.269	0.604
Q22	What changes I will need to make to my diet if any?	40	1624.00	36	1302.00	1.518	0.218
Q23	The general guidelines about physical activity after a heart attack?	40	1626.00	36	1300.00	2.335	0.127
Q24	When I can resume driving?	40	1777.00	36	1148.00	10.045	0.002*
Q25	What physical restrictions I may have if any?	40	1830.00	36	1096.00	14.673	0.0001*
Q26	How to know when I can increase my level of activities?	40	1747.50	36	1178.50	9.313	0.002*
Q27	When I can resume sexual activity?	40	1650.00	36	1276.00	2.594	0.107
Q28	When I can return to work?	40	1693.00	36	1233.00	4.613	0.032*

Table 4.8: Comparison of items for differences between population (patients and nurses) groups *(continued)*

Item	Statement	Population				Kruskal-Wallis / Chi-Square tests	Pr
		Group 1		Group 2			
		f	Rank sum	f	Rank sum		
Q29	The different causes and types of chest pain?	40	1608.50	36	1317.00	1.361	0.243
Q30	What to do if I get chest pain?	40	1526.00	36	1400.00	0.115	0.735
Q31	What are the signs and symptoms of a heart attack?	40	1469.00	36	1458.00	3.750	0.053
Q32	When to call the doctor (GP) or an ambulance?	40	1567.50	36	1358.50	0.326	0.568
Q33	When I am mostly likely to suffer chest pain?	40	1783.00	36	1143.00	14.101	0.0002*
Q34	When and how to use the GTN spray or tablets?	40	1646.00	36	1280.00	3.871	0.049*
Q35	What support is available when I am discharged home?	40	1728.00	36	1198.00	7.341	0.007*
Q36	What support is available for my family?	40	1727.50	36	1198.50	6.284	0.012*
Q37	What tests and investigations I will have in the future with regard to my heart?	40	1682.00	36	1243.50	5.883	0.015*

Key: * = statistically significance

4.5.3.3 Equality of population test for evidence of differences between nurses and patients

Findings are displayed in **Table 4.8** above. There were significant differences ($p<0.05$) on ten need statements for Kruskal-Wallis/ Chi-Square test (items Q5, Q8, Q16, Q24, Q26, Q28, Q34, Q35, Q36 and Q37).

There was substantial disagreement amongst patients and nurses on the 2 items, Q33 (when I am most likely to suffer chest pain) on Chi-Square analysis score of 0.0002 as lowest and also very substantial disagreement on item Q25 (what physical restrictions I have, if any) with a p value of 0.0001 considered as lowest. These findings are displayed in **Table 4.8.**

4.5.3.4 Comparison of construct scores for differences between population groups

Table 4.9 Relationships between construct variables and 37 items questionnaire

Construct	Item
Anatomy and physiology	Items Q1, Q2, Q3, Q4 and Q5
Psychological	Items Q6, Q7, Q8 and Q9
Lifestyle factors	Items Q10, Q11 and Q12
Medication factors	Items Q13, Q14, Q15, Q16 and Q17
Dietary factors	Items Q18, Q19, Q20, Q21 and Q22
Physical factors	Items Q23, Q24, Q25, Q26, Q27 and Q28
Symptom management	Items Q29, Q30, Q31, Q32, Q33 and Q34
Miscellaneous factors	Items Q35, Q36 and Q37

The relationship between the composition of the constructs and items as outlined by the CPLNI instrument are described in table 4.9 above. The construct scores for anatomy and physiology, psychology, lifestyle, medication, dietary, physical symptom management and miscellaneous can respectively range from 5 – 25; 4 – 20; 3 – 15; 5 – 25; 5 – 25; 6 – 30; 6 – 30 and 3 – 15.

Table 4.10: Summary statistics for differences in construct scores between population groups

Construct	Group						Total Sample		
	Group 1 (patients)			Group 2 (nurses)					
	f	M	SD	f	M	SD	F	M	SD
Anatomy and physiology	40	4.890	0.235	36	4.828	0.192	76	4.860	0.217
Psychological factors	40	4.800	0.284	36	4.764	0.273	76	4.783	0.278
Lifestyle factors	40	4.866	0.211	36	4.769	0.364	76	4.820	0.295
Medication factors	40	4.890	9.235	36	4.844	0.291	76	4.868	0.262
Dietary factors	40	4.810	0.405	36	4.772	0.328	76	4.792	0.369
Physical factors	40	4.862	0.302	36	4.601	0.397	76	4.739	0.372
Symptom management factors	40	4.925	0.217	36	4.810	0.229	76	4.870	0.229
Miscellaneous factors	40	4.880	0.325	36	4.620	0.452	76	4.758	0.410

Using t – test for clusters, data were analyzed to determine the mean total score difference between both interviews. Findings indicated a patient total sample (n= 40) mean score of 4. 925 (standard deviation of 0.217), on the cluster ‘symptom management’ which was higher than other clusters. On the nurses total sample (n= 36) mean score of 4. 844 (standard deviation 0.291) on the cluster ‘medication’ was higher than other clusters. Findings are displayed in **Table 4.10.**

All other clusters had a mean which ranged from 4, 8 to 4, 89 which were good, but with no significant differences. The six highest mean scores (cluster 1, 3, 4, 5, 6, 8) are each significantly larger than the remaining one (cluster 2) on patient group. In the nurses group, the three clusters (1, 3, 4) are each significantly larger than any of the four lowest (2, 5, 6, 8). Findings are displayed in **Table 4.10.**

These findings are consistent with similar studies conducted overseas. For example, in a study by Timmins & Kaliszer (2003), the mean score of ‘symptom management’ significantly exceeded the scores of all categories. (In this study the cluster ‘symptom management’ was ranked highest by the patients) and that the three highest mean scores

(clusters 3, 4 and 7) were each significantly larger than any of the three lowest mean scores (clusters 1, 2 and 6). Findings are displayed in **Table 4.10.**

Figure 4.3 shows for the nurses' group, the following: the constructs range from 4.5 to 5 median. All the constructs range with a median closer to 5: anatomy & physiology, lifestyle, dietary, symptom management, psychological factor, medication, physical, miscellaneous.

The perception of the patients on the score shows a lower value due to different average scores. There is a lot of variability in their perceptions. The constructs anatomy & physiology, symptom management and medications are closer to a median of 5; whereas dietary and psychological factors are ranged between a median of 4.5 to 5. Only the lifestyle factor is situated at 4.5 median. The constructs physical activity and miscellaneous are difficult to assess because their low values are due to different average scores.

From these findings, there are differences and similarities on perceptions of patients and nurses. There were similarities for the 5 constructs ranging from a median of 4.5 to 5: (anatomy and physiology, dietary, symptom management, psychological factor, medication). Only lifestyle factors were ranged at a median of 4.5 on the patient's score.

There were also differences on the perceptions of the two groups on the two constructs: 'physical activity' and 'miscellaneous'. The nurses ranked them closer to a median of 5, whereas the patients had lot of variability in their perception (lower value due to different average scores).

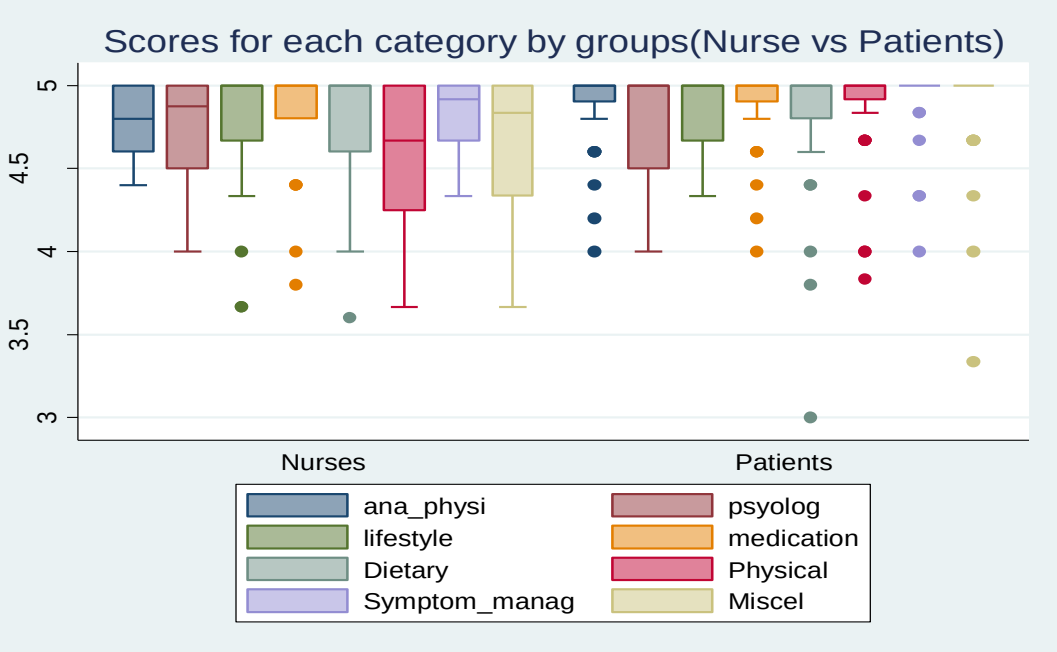

Figure 4.3: Comparison of scores for construct variables by population groups.

4.5.3.4 Comparison of construct scores by using multivariate testing

Table 4.11: Comparison between means with respect to constructs and study (nurse and patient) groups

Test	p-value
Hotelling's two group T^2 – test using vector (anatomy and physiology, psychology, life style, medication, dietary, physical, symptom management and miscellaneous)	0.0955
Student t-test comparing population (patient and nurse) groups with respect to:	
- Anatomy and physiology	0.2088
- Psychology	0.5744
- Life style	0.1615
- Medication	0.4588
- Dietary	0.6551
- Physical	0.0022*
- Symptom management	0.0284*
- Miscellaneous	0.0054*

Key= * statistically significant

Using Hotelling's two group T^2- test using vector, all the 8 constructs had a p value of 0.095 (non significant), but when using the Student t-test comparing population (patients & nurses), the results were not significant on 5 constructs with respect to anatomy and physiology, p = 0.2088; psychological factors p = 0.5744; lifestyle p = 0.1615; medication, p= 0.4588; dietary, p = 0.6551, whereas the results were significant on the 3 last constructs: physical, p = 0.0022; symptom management, p = 0.0284; miscellaneous, p = 0.0054.

Hotelling's T^2 statistics test was used for the comparison at the 0, 05 level of significance. Responses items were sorted into eight major clusters (anatomy and physiology, psychological factors, lifestyle, medication, dietary, physical activity, symptom management, miscellaneous) respectively items Q1 – Q5, Q6 – Q9, Q10 – Q12, Q13 – Q17, Q18 – Q22, Q23 – Q28, Q29 – Q34, Q35 – Q37 **(**refer to **Table 4.9)**

Frequency and mean scores were calculated for the total sample (n = 76), findings were based solely on their mean score. Findings yield 'symptom management' as the highest (mean 4.925; SD 0.217) in group 1, whereas cluster 2 (psychological factors) received a score of 4, 8, SD 0.284 considered as lowest but with no significant differences. The Table shows that the patients ranked first 'symptom management' and ranking highly the clusters 1, 3, 4, 5, 6, 8 but disagreed on cluster 2 in which the patients placed last but with no significant differences. In group 2, the nurses ranked first the cluster medication (mean score of 4.844), they ranked highest the clusters 1, 2, 3, 5, 7 but disagreed on clusters 6 and 8 (mean score 4.601 and 4.620).

From these findings, it can be extrapolated that the order of importance of the type of CPLNI clusters expected by the respondents differs. This means that 72 hours post a myocardial infarction event, when patients are in recovery stage; they view 'symptom management' as very important. The cluster 'psychological factors' were viewed as lowest by patients, whereas the critical care nurses view the cluster 'medication' very important for the patients' need and they view 'physical activity' and 'miscellaneous' of no importance for the needs of acute myocardial infarction patients.

4.5.3.5 Correlation of constructs for population (nurses and patients) groups.

Table 4.12 Correlation construct for patient (group 1)

Pairs of constructs	Correlation	Significance
Physical vs. Anatomy & Physiology	0.4873 *	0.0399
Lifestyle vs. Anatomy & Physiology	0.5587 #	0.0050
Medication vs. Anatomy & Physiology	0.6104 #	0.0008
Medication vs. Lifestyle	0.6966 #	0.0000
Physical vs. Anatomy & Physiology	0.4802 *	0.0480
Physical vs. Lifestyle	0.5779 #	0.0026
Miscellaneous vs. Lifestyle	0.5154 *	0.0186
Miscellaneous vs. Symptom management	0.5400 *	0.0090

Key: *=Moderate relationship
#=Strong relationship

The *r* value of 0.1 to 0.29 = weak relationship, and *r* between 0.3 and 0.5 = moderate relationship, *r* value above 0.5 = strong relationship (Burns & Grove, 2007).

Respective to patients' responses, there are strong relationships between lifestyle vs. anatomy and physiology (*r =0.5587),* medication vs. anatomy & physiology (*r = 0.6104),* medication vs. lifestyle (*r = 0.6966),* physical vs. lifestyle (*r = 0.5779).* There were moderate relationships between psychological vs. anatomy & physiology (*r = 0.4873),* physical and anatomy (*r =0.4802),* miscellaneous vs. lifestyle (*r = 0.5154),* miscellaneous vs. symptom (*r = 0.5400).*From these findings (Table 4.12 and Table 4.13**)**, it is clear that the degree of relationship varies between the two groups (patients/nurses).

Table 4.13 Correlation of constructs for nurses (group2).

Pairs of constructs	Correlation	Significance
Medication vs. Lifestyle	0.658 #	0.0004
Dietary vs. Lifestyle	0.774 #	0.000
Dietary vs. Medication	0.719 #	0.000
Physical vs. Psychological	0.579 #	0.006
Symptom vs. Physical	0.593 #	0.004
Miscellaneous vs. Lifestyle	0.590 #	0.004
Miscellaneous vs. Medication	0.523 *	0.030
Miscellaneous vs. Dietary	0.672 #	0.002
Miscellaneous vs. Physical	0.629 #	0.001
Miscellaneous vs. Symptom management	0.510 *	0.041

Key: * = moderate relationship
= strong relationship

Respective to the nurses response, the result shows there is a significant and strong relationship between medication and lifestyle (*r = 0.658),* similarly a significant and strong relationship was observed between the following scores: dietary and lifestyle (*r = 0.774),* dietary and medication (*r = 0.719*), physical and psychological factors *(r = 0.579),* symptom and physical (r = 0.593), miscellaneous and lifestyle (r = 0.590), miscellaneous and dietary (r = 0.672), miscellaneous and physical (r = 0.629). There were moderate relationships between miscellaneous and medication (r = 0.523) and miscellaneous vs. symptom management (r = 0.510). There is no way to improve lifestyle without taking medication, and diet has an effect on lifestyle.

4.6 DISCUSSION OF FINDINGS

The purpose of the study was to describe and compare intensive care nurses' and patients' perceptions of information needs of acute myocardial infarction patients in the immediate post recovery period. In this study, stage one was validation of the instrument CPLNI. This tool was found to be reliable according to the 7 raters which were divided into 3 groups:

Group 1 (patient) score was not valid due to less representation, group 2 (nurses): reliability score of the tool was 1.0, group 3 (consultants and registrars): reliability of the tool was 0.9550. The agreement was good in using the Kappa statistical test.

In stage two of the study which used a sample size of 76 (patients n = 40, nurses n = 36), the highest age was between 40 – 49 years (25%) and the lowest age was between 20 – 29 years (1.32%). Patients with a diagnosis of ACS, were more representative (62.50%, n = 25), and the lowest was NSTEM (2.50%, n = 1). The patients were mostly English speakers (82.50%, n = 33). Most of them were retired (47.50%, n = 19) and 67.50% (n = 27) had never been admitted in CCU previously.

In the statistical analysis, there were some similarities and differences on the constructs. There was disagreement amongst patients and nurses on 10 items: Q5 (p = 0.0130), Q8 (p = 0.0265), Q16 (p = 0.0076), Q24 (p = 0.002) Q26 (p = 0.0023), Q28 (p = 0.0317), Q34 (p = 0.049), Q35 (p = 0.0067), Q36 (p = 0.0122) and Q37 (p = 0.0153). There was substantial disagreement on 2 items: Q25 (p = 0.0001) and Q33 (p = 0.0002)

Subsequently, the 3 following constructs were rated as low: physical (p = 0.0022), symptom management (p = 0.0284), miscellaneous (p = 0.0054). This is even confirmed on the box plot (**Figure 4.3**) whereby the patients had different average scores on physical activity and miscellaneous. All other constructs were closer to a 5 median as similar to the nurses' scores, except lifestyle factors on patients' score which is at a median of 4.5.

On the table of correlations between patients and nurses, there were significant and moderate relationships between the different constructs. From the 2 tables of correlations of the patients and nurses, it is clear that the degree of relationship varies between the groups (patients vs. nurses).

4.7 SUMMARY

This chapter discussed the descriptive and comparative statistics employed to describe, synthesize and analyze the data and interpretation of research findings.

From the scores, it was found that each of the 2 groups (patients and nurses) considered information in the 8 constructs to be important/very important, except with regard to the patients‘ perception on the 2 constructs (physical activity and miscellaneous) which contained informational items regarding as lowest in importance.

In comparing the scores of patients’ subjects with the nurses’ group, the scores were significantly different ($p < 0.05$) only in relation to the 3 following constructs: physical activity, miscellaneous and symptom management. There were no significant differences ($p < 0.05$) in the 5 other construct scores. Therefore, the main area of informational incongruency appeared to exist between patients and nurses subjects. However, at the same time it was clear that there existed a high degree of similarity in the ratings given by subjects in patients and nurses group.

The following chapter will discuss the limitations of the study, summary of research findings and recommendations for further research.