Chapter 4

Data analysis and interpretation

4.1 INTRODUCTION

This chapter discusses the data analysis and interpretation. The researcher analysed and interpreted the data into meaningful and applicable units. The data is presented in frequencies and percentages. A total of 60 questionnaires were distributed and returned. According to Grinnell and Williams (1996:127), 10% of the sample is statistically significant and could be regarded as representative of the population. The analysis and interpretation is arranged according to each variable. The study set out to answer the following questions:

- What are the risk factors for the increasing prevalence of CHD among the Indian community in Kea Zulu-Natal?
- What health problems are related to the risk factors?
- What measures can be implemented to reduce the prevalence?

4.2 ANALYSIS

Section A: Non-modifiable risk factors.
Section B: Modifiable risk factors.
Section C: Health education received.

Personal information was not asked separately in view of the fact that the information would be derived from the responses, thereby avoiding repetition.

4.2.1 Section A: Non-modifiable risk factors

Non-modifiable risk factors are factors beyond the individual’s control. They are age, gender, heredity/familial diseases and race. Cardiac risk factors are classified as modifiable and non-modifiable. Modifiable risk factors are those risk factors caused by circumstances under an individual’s control.
Non-modifiable risk factors are those beyond the individual’s control (Thelan et al 2000:483).

4.2.1.1 Item 1: Age (N=60)

The ages of the subjects ranged from 26 to 65 years. This variable was important for the researcher to establish the age group at risk for CHD. The majority of the subjects N=28 (47%) were between 30 and 49, N=14 (23%) were between 60 and 69, N=10 (17%) were between 50 and 59, and N= 8 (13%) were under 30. Table 4.1 represents the respondents’ ages.

Table 4.1 Respondents’ age

<table>
<thead>
<tr>
<th>AGE</th>
<th>N=60</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>31-40 years</td>
<td>8</td>
</tr>
<tr>
<td>41-50 years</td>
<td>28</td>
</tr>
<tr>
<td>51-60 years</td>
<td>10</td>
</tr>
<tr>
<td>61 and over</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

4.2.1.2 Item 2: Gender (N=60)

The results indicated that 60% (N=36) of the respondents were males and 40% (N=24) were females. Sewdarsen (1990:83) and Vythelingum (1990:83) found that more Indian males are at risk for CHD. Smith (1999:3) found that the rate of CHD among Indians, particularly in young men, is twice as high as in Whites.

4.2.1.3 Item 3: Family history (N=60)

The results indicated that 72% (N=43) of the participants had a family history of hypertension, diabetes mellitus and increased levels of cholesterol levels in the blood, the conditions mentioned in question 3. The results confirm that if one or both parents have any of the familial diseases, there is a high probability of their children inheriting it. Smith (1999:4) found that people of Indian origin might be genetically more prone to CHD, because the ability of the cells that line the brachial artery to expand were found
to be less effective in people of Indian origin. A substance called nitric oxide, which keeps the artery in good condition, might be impaired in people of Indian origin.

**4.2.1.4 Item 4: Which one of your family members has any of the conditions mentioned in question 3? (N=43)**

This question was a follow-up to elicit the gender at risk for CHD. It should be noted that none of the participants mentioned either a brother or a sister. It was either the mother or the father. Of the participants who had a familial history, 51% (N=22) indicated both parents with one of the conditions and 49% (N=21) indicated their mothers.

From the data the researcher concluded that more males would be prone to risk for CHD, as the percentage of those with mothers suffering from one of the conditions was high and women were also included in the 51% with both parents. The researcher noted a limitation of not being able to relate the age group of the parents as literature (Sewdarsen 1990:83 and Vythelingum 1990:83) “indicated that women are more susceptible to CHD after menopause”. The results also revealed some inconsistency in the variable of age and the familial relationship. In variable (2), the gender at risk was mostly males, but the results on the “family” member with risk factors were mostly mothers (females).

**4.2.1.5 Item 5: Risk-related factors (N=60)**

This variable was important to assess the relationship between the risk factors of CHD that the parents have in relation to the respondents’ diagnosis.

- **Hypertension**

Hypertension was the diagnosis for 65% (N=39) of the respondents. Lee (1999:2389)” found that hypertension was shown to be a predictor of CHD. Hypertension was common in American Indian communities except for South/North Dakota and its prevalence is greater than the general US population”. 
• **Diabetes mellitus**

Diabetes was found in 13% (N=8) of the respondents. The researcher concluded that diabetes mellitus is the least risk factor in the increasing incidence of CHD. However, Best and Wilson (2005:1516) indicated a high incidence of diabetes among the Indian population.

• **High cholesterol levels and obesity**

If a person’s weight is more than 25% of the expected weight for that age, gender and height, the individual is said to be obese (Tonstad S and Graff-Iverson S 2001: 1698). Although in this study the researcher did not weigh the respondents, their weight on admission to hospital was used because all patients are weighed routinely. In this study 4% (N=4) were found to be obese and 15% (N=9) of the respondents had high cholesterol levels.

The results revealed that obesity could not be attributed as a risk factor for developing CHD in this sample even though there was a correlation between the two variables. However, the factors contributing to low cholesterol should be further investigate, as Indian diet (food) is perceived to be fatty. Of the respondents, 93% (N=56) weight was within normal limits, ranging from 55 to 75 kilograms. The results also indicated that 31% (N=52) of the respondents had more than one of the risk factors. Lee (2005:112) found that obesity has a negative association to CHD in American Indians because their body fat is always centrally distributed. Nevertheless, it is difficult to understand the negative relation of obesity to CHD. It is possible that this reflects the fact that individuals with a long duration of diabetes, particularly those with renal disease (who are at high risk for CHD), lose weight and that this is not completely accounted for in the multivariate analysis. The question of whether there are ethnic differences in the impact of obesity on CHD needs further investigation (Lee 1999:2398). Figure 4.1 represents the risk factors for high cholesterol and genetic factors.
The researcher concluded that genetic factors can contribute to CHD as indicated by the number of respondents with a strong family history of hypertension and diabetes mellitus. All the respondents had routine weights and blood cholesterol levels done on admission.

4.2.1.6 Item 6: Duration of the disease (N=60)

The results indicated that of the respondents, 60%(N=36) had the disease for 5 to 10 years (N=14), 23% had it for more than 10 years, and 17%(N=10) had it for less than 5 years. The researcher could conclude that majority of the respondents had the risk to CHD for a while and therefore they are expected to be knowledgeable about their condition.
4.2.2 SECTION B: MODIFIABLE RISK FACTORS

Modifiable risk factors are the ones over which an individual has (some) control, such as external and internal environmental factors and life style (e.g., cigarette smoking, bad eating habits and sedentary life) (Smeltzer & Bare 2000:598; Thelan et al 2000:483).

4.2.2.1 Item 7: Marital status (N=54)

This question was based on the premise that marital instability in the family causes stress, which could lead to heart-related conditions. Of the respondents, 11% (N=6) did not answer the question; 17% (N=9) were divorced; 11% (N=16) were single and living with their parents, brothers or sisters, or some close relative; 20% (N=11) were widowed or widowers, and 52% (N=28) were married and living with either their spouse or with their children. The results indicated that 66.6% of the respondents had no partners. This finding could correspond to the premise that marital status could induce stress, as a result of financial problems and single parenting.

4.2.2.2 Item 8: Employment (N=60)

This question was asked on the deduction that employment could be a stressor. Of the respondents, 63% (N=38) were employed and 37% (N=22) were unemployed.

4.2.2.3 Item 9: Employment status (N=60)

This question was based on the assumption that an individual’s employment status plays a significant role in their health. Having stable employment can assure individuals that although they are unwell at the end of the month they will still get a salary/wages. Being sick and being temporarily employed can bring emotional stress through fear of losing their job and this could lead to stress and CHD.
Of the respondents, 38% (N=23) were in stable employment, 25% (N=15) were employed on a temporary basis, which meant that they were dependent on an unstable income, 28% (N=17) received social security in the form of old age pensions, disability and child support grants, and 9% (N=5) were unemployed. The results indicate that majority of the participants are employed.

4.2.2.4 Item 10: How would you rate your source of income? (N=47)

Of the respondents, 78% (N=47) answered this question. Of those, 40% (N=18) rated their income status as good; 30% (N=14) rated it satisfactory, 25% (N=12) rated it excellent, and 1% (N=3) indicated below satisfactory. The results indicate that participants who were employed were basically satisfied with their salaries. Figure 4.2 illustrates the respondents’ rating of their income.

**Figure 4.2 Rating of source of income**

![Bar chart showing rating of source of income]

**Key:**
1. Excellent
2. Good
3. Satisfactory
4. Poor
4.2.2.5 Item 11: Employment as a stressor (N=42)

Only 42 respondents answered the question, possibly because some were unemployed. Of those who answered the question, 62% (N=26) regarded their employment as a source of stress.

4.2.2.6 Item 12: Would you generally regard yourself as being highly stressed?

About ninety (90) % of the respondents stated that they had some source of stress.

4.2.2.7 Item 13: Source of stress (N=38)

Of the respondents, 63% (N=38) answered the question. Of those, 68% (N=26) indicated the demand of the work as the source of stress. This is congruent with the question on income as it is assumed that the more a person earns, the higher the demands of the job (Tonstad, S and Graff-Iverson, S 2001:1698).

4.2.2.8 Item 14: If you answered “yes” to question 4.12, please state in which way you regard your employment as a stressor. (N=38)

Of the respondents, 11% (N=4) indicated that their ill-health hampered them in performing their job effectively; 21% (N=8) indicated poor salary as the source of stress, and 42% (N=16) indicated family problems as the source of stress.

4.2.2.9 Item 15: Do you experience any of the following physical signs when you are stressed? (N=55)

This question was an association of the early clinical manifestations of CHD. Of the respondents, only 92% (N=55) answered the question. Of those, the majority 35% (N=19) indicated experiencing dizziness and fatigue. This was a concern to the researcher who did not know whether the 8% (N=5) respondents are aware of the symptoms of CHD or not. The results could indicate that the respondents could be developing heart failure, as there is a great association of these symptoms and hypertension. Table 4.2 depicts the physical signs experienced by the respondents.
### Table 4.2 Physical signs

<table>
<thead>
<tr>
<th>Physical discomfort</th>
<th>N=55</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dizziness</td>
<td>19</td>
<td>34%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>4</td>
<td>7.2%</td>
</tr>
<tr>
<td>Palpitations</td>
<td>3</td>
<td>5.4%</td>
</tr>
<tr>
<td>Chest pain</td>
<td>23</td>
<td>41.7%</td>
</tr>
<tr>
<td>Dyspnoea</td>
<td>6</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

#### 4.2.2.10 Item 16: Smoking (N=16)

Smoking was an important variable in this study as there is a strong link between cigarette smoking and CHD. According to Goodfellow 2002:75 “nicotine in cigarettes promotes vasoconstriction resulting in intima hypoxia”. The smoking pattern for all the respondents was 26% (N=4). These results indicated that most Indians do not smoke. This could possibly be attributed to their cultural or religious beliefs. Cigarette smoking is a major risk factor in CHD ((Goodfellow 2002:75)

#### 4.2.2.11 Item 17: Number of cigarettes per day

The participants smoked an average of 4.6 cigarettes per day.

#### 4.2.2.12 Item 18: Duration of smoking

The four (4) participants who smoked indicated that they had been smoking for 10 to 15 years and was constantly reminded by nursing and medical staff to quit smoking.
4.2.2.13 Item 19: Alcohol intake (N=21)

The researcher questioned the subjects about alcohol intake as alcohol is rich in calories and can result in weight gain. When taken with medication, alcohol can also have adverse effects such as increased drowsiness. Alcohol can also increase hypertension and blood glucose levels. Of the respondents, 57% (N =12) consumed alcohol regularly; 42% (N=9) stopped consuming alcohol for medical reasons on the advice of their doctors, unaffordability, and ill health.

4.2.2.14 Items 20, 21, 22: Sedentary lifestyle (N=60)

Of the respondents, 74% (N=44) led a sedentary lifestyle, with no exercise; 26% (N=16) engaged in walking two or three times per week. None of the subjects was involved in any other activity, such as jogging, cycling and going to the gymnasium. These results concur with those on high cholesterol, as it can be assumed that a sedentary lifestyle leads to obesity. However, it is possible that there could be other factors leading to CHD, irrespective of the sedentary lifestyle. Diagram 4.3 represents the risk factors for CHD.

Figure 4.3 Risk factors for CHD

Key:

1. Diabetes mellitus \( \rightarrow \) 13%
2. Smoking \( \rightarrow \) 26%
3. Hypertension \( \rightarrow \) 65%
4. Sedentary lifestyle \( \rightarrow \) 73%
5. Stress \( \rightarrow \) 90%
4.2.3 SECTION C: HEALTH EDUCATION RECEIVED

4.2.3.1 Item 23: Education on the diseases and the risk factors contributing to CHD (N=53)

Of the respondents, 61.6% (N=37) stated that nurses informed them about their condition and the factors that contribute to the risk of CHD; 26.6% (16) indicated that they were given no education/advice, and 11.8% (N=7) did not answer this question. The researcher concluded that most of the respondents did have some health education related to the risks of CHD.

4.2.3.2 Item 24: Information on the risk factors contributing to CHD (N=60)

Only 20% (N =12) of the respondents indicated being aware of the relationship of smoking and their medical condition. This poor response is of concern as there is no clear indication of whether the respondents did receive health education or not. The researcher noted a limitation in this question as there was no follow-up question on what they did with that knowledge. Eighty (80)% (N=48) of the respondents was not aware of the effects of cigarette smoking on the heart.

4.3 Support systems (N=60)

This variable was included on the premise that once individuals have a support group they realized that they are not alone and can see others cope with the same disease and they will also receive more and recent information about their disease.

Of the respondents, 56% (N=34) were eager to join a support group for patients with risk factors; 18% (N=11) (males and females) were unsure of the purpose of the group; 26% (N=16) were not interested as they had support from family, friends and relatives.
4.4 CONCLUSION

This chapter discussed the data analysis and interpretation with reference to the literature review. Data was obtained from a sample of 60 respondents at the RK Khan Hospital in Durban, and covered risk factors, family history, and the need for a support group, among other things.

Chapter 5 concludes the study, presents the findings, discusses the limitations and makes recommendations for practice and further research.