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Adolescent health in the Hunter Region: a survey of student perceptions and concerns

Margo Nancarrow
University of Wollongong

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ADOLESCENT HEALTH IN THE HUNTER REGION.

A SURVEY OF STUDENT PERCEPTIONS AND CONCERNS.

A research report submitted in fulfilment of

the requirement for the degree of

MASTER OF NURSING (HONS)

from

THE UNIVERSITY OF WOLLONGONG.

BY

MARGO NANCARROW  R.N.  B.Ed.

Department of Nursing

1993
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# LIST OF TABLES

<p>| Table 3.1. | Causes of death in relation to age and sex, 15-24 years, 1982 | 48 |
| Table 3.2. | Deaths by road accidents, age and sex, per 100,000 population | 48 |
| Table 3.3 | Hospital separations/discharges Hunter Region 1989 to 1991 12 years to 20 years for Injuries and Poisoning | 49 |
| Table 3.4 | Birth rates in N S W. (&lt;19yrs) 1988-1989 | 55 |
| Table 3.5 | Teenage births in the Hunter Area 1988 and 1989 | 55 |
| Table 4.1 | Adolescents attending school in the Hunter | 77 |
| Table 4.2 | Profile of respondents and schools attended | 81 |
| Table 4.3 | Identification of questionnaire items | 85 |
| Table 5.1 | Respondents by school, age and gender | 95 |
| Table 5.2 | Responses to the question &quot;With whom do you live?&quot; | 97 |
| Table 5.3 | Students' chosen definition of health by gender | 102 |
| Table 5.4 | Students responses re decreased activity | 103 |
| Table 5.5 | Problem categories causing decreased activity | 104 |
| Table 5.6 | Responses to nutrition statement | 105 |
| Table 5.7 | Comparison of health status | 106 |
| Table 5.8 | Frequency of concern about health status | 107 |
| Table 5.9 | Frequency of requirements for help or advice | 108 |
| Table 5.10 | The need for more information about general health | 109 |
| Table 5.11 | The need for information about specific health problems | 110 |
| Table 5.12 | Where help/advice was obtained | 111 |
| Table 5.13 | Use of a specific health clinic | 112 |
| Table 5.14 | Preferred site for a health facility | 113 |
| Table 5.15 | Identification of problems by category | 116 |
| Table 5.16 | Reasons for medical advice (Specific categories) | 119 |
| Table 5.17 | Description of health problem scores | 122 |
| Table 5.18 | Items of statistical significance from each category | 123 |
| Table 5.19 | Ten highest scoring responses by gender | 124 |
| Table 5.20 | Summary of data analysis re body image - total sample | 125 |
| Table 5.21 | Summary of data analysis re lifestyle - total sample | 128 |
| Table 5.22 | Summary of data analysis re sexuality - total sample | 133 |
| Table 5.23 | Summary of data analysis re mental health - total sample | 135 |
| Table 5.24 | Summary of data analysis re specific diseases | 139 |
| Table 5.25 | Summary of data analysis re social issues - total sample | 141 |
| Table 5.26 | Scoring method for prioritisation of problems by category | 445 |
| Table 5.27 | Summary of data analysis for prioritisation of problems | 147 |
| Table 5.28 | Comparison of father’s occupation | 150 |
| Table 5.29 | Comparisons between definitions of health | 151 |
| Table 5.30 | Comparison of preferred sites for health facility | 153 |</p>
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>The Health Belief Model</td>
<td>12</td>
</tr>
<tr>
<td>2.2</td>
<td>Health Promotion Model from Pender, 1986</td>
<td>14</td>
</tr>
<tr>
<td>2.3</td>
<td>Crisis Theory Model</td>
<td>16</td>
</tr>
<tr>
<td>2.4</td>
<td>Growth Potential: Crisis as a Challenge</td>
<td>17</td>
</tr>
<tr>
<td>2.5</td>
<td>Growth Potential: Adolescence as a Challenge</td>
<td>18</td>
</tr>
<tr>
<td>2.6</td>
<td>Theoretical Framework for Study</td>
<td>19</td>
</tr>
<tr>
<td>3.1</td>
<td>The Cube Model of Health from Eberst</td>
<td>30</td>
</tr>
<tr>
<td>3.2</td>
<td>Domains of health from Perry, (1984)</td>
<td>33</td>
</tr>
<tr>
<td>4.1</td>
<td>Stages of instrument development</td>
<td>75</td>
</tr>
<tr>
<td>5.1</td>
<td>Respondents' ages and school attended</td>
<td>96</td>
</tr>
<tr>
<td>5.2</td>
<td>Religion in Students' Household</td>
<td>98</td>
</tr>
<tr>
<td>5.3</td>
<td>Profile of father's occupation</td>
<td>100</td>
</tr>
<tr>
<td>5.4</td>
<td>Responses to the question &quot;Where do you think a health facility should be situated?&quot;</td>
<td>115</td>
</tr>
<tr>
<td>5.5</td>
<td>Responses to the question, &quot;What problems did you require help for during the last year?&quot;</td>
<td>117</td>
</tr>
<tr>
<td>5.6</td>
<td>Responses to the statement &quot;I am concerned about .....&quot; items</td>
<td>121</td>
</tr>
<tr>
<td>5.7</td>
<td>Responses to concerns about body image</td>
<td>126</td>
</tr>
<tr>
<td>5.8</td>
<td>Responses to concerns about lifestyle</td>
<td>129</td>
</tr>
<tr>
<td>5.9</td>
<td>Responses to concerns about sexuality issues</td>
<td>132</td>
</tr>
<tr>
<td>5.10</td>
<td>Responses to concerns about mental health statements</td>
<td>137</td>
</tr>
<tr>
<td>5.11</td>
<td>Responses to concerns about specific diseases</td>
<td>140</td>
</tr>
<tr>
<td>5.12</td>
<td>Responses to concerns about social issues</td>
<td>143</td>
</tr>
<tr>
<td>5.13</td>
<td>Most important health concerns</td>
<td>146</td>
</tr>
<tr>
<td>6.1</td>
<td>Map of NSW showing Hunter Region</td>
<td>158</td>
</tr>
</tbody>
</table>
CHAPTER 5 : RESULTS .......................................................... 93
5.1 Introduction ................................................................. 94
5.2 Social and demographic information about respondents .......... 95
5.3 Adolescent's perceptions of health and gender differences ........ 101
5.4 Adolescent's comparison of health and gender differences .......... 105
5.5 Where do adolescents go for help or advice about health related problems? ......................................................... 110
5.6 Preferred Type of Health Facility ..................................... 112
5.7 Health Issues of Most Concern to Adolescents ................... 115
5.7.1 General Responses .................................................. 116
5.7.2 Specific Categories .................................................. 120
  5.7.2a Body Image ......................................................... 125
  5.7.2b Lifestyle ............................................................ 127
  5.7.2c Sexuality ............................................................. 130
  5.7.2d Mental Health ...................................................... 134
  5.7.2e Specific Disorders ................................................ 138
  5.7.2f Social Issues ........................................................ 141
5.8 Prioritisation of Concerns ................................................ 144
5.9 Non-Respondents ......................................................... 148

CHAPTER 6 : DISCUSSION .......................................................... 157
6.1 Introduction ................................................................. 158
6.2 Social and Demographic Profile ....................................... 159
6.3 Perceptions of Health .................................................... 165
6.4 Comparisons between own health states with consideration of gender differences ...................................................... 169
6.5 Source of help or advice ................................................ 172
6.6 Preferred health care facility .......................................... 174
6.7 Health Issues of Most Concern To Adolescents ................... 175
  6.7.1 Body Image ......................................................... 176
  6.7.2 Lifestyle ............................................................ 178
  6.7.3 Sexuality ............................................................. 181
  6.7.4 Mental Health ...................................................... 186
  6.7.5 Specific Disorders ................................................ 188
  6.7.6 Social Issues ........................................................ 194
6.8 Prioritisation of Concerns ................................................ 199
ABSTRACT

This thesis reports on research that was undertaken to inquire into the health, ideas about health and issues of concern to adolescents in the Hunter region. The data obtained can provide a basis on which to establish, refine or co-ordinate health education and health care delivery.

Adolescence is generally considered to be a healthy stage of life. However, adolescence can produce problems of a physical, psychological and social nature than can threaten not only the young person's health but also the health and well being of the future adult population. Although much attention has been given to health beliefs, knowledge and behaviours of adolescents there has been scant attention to the personal concerns of the adolescents and their self perceived health needs.

The research was both qualitative and quantitative, with data gathered through the use of a specially developed, self-administered survey questionnaire that elicited subjective and objective responses.

Seven hundred students from randomly selected High Schools in the region took part in the research. The methods of data analysis were descriptive and inferential with frequency distribution to determine measures of central tendency and spread of distribution. Relationships between specific variables were examined.

The items relating to sexuality, mental health and social issues were chosen most frequently as personal "concerns", although other "concerns" rated quite highly overall. There was a statistically significant difference between the responses of male and female students for most statements.

Recommendations arising out of this research include the repetition of the study in a wider geographical area with the inclusion of adolescents not attending school, a more in-depth investigation of specific issues identified throughout the study as significant for adolescents. There is a need to carefully plan future services for adolescents, who need to be well represented in both the planning and implementation of those services and facilities.

It is further recommended that all health care personnel be adequately prepared and better equipped to deal with the physical, emotional and social needs of adolescents. Recognition should be given to the gender differences identified in the study. Free standing health clinics with appropriate co-ordination of services should be seriously considered.

It is highly likely that the ideas and problems identified throughout this study are the same for adolescent students throughout the country.
CHAPTER 1

INTRODUCTION
1.1 Introduction.

This chapter briefly discusses adolescence, adolescent health and health breakdown issues. It identifies the purpose of the present study, and describes the thesis outline.

Adolescence is the transition between childhood and adulthood, freedom and responsibility and between dependence and interdependence. It is a transition that can be fraught with obstacles or conversely a transition that can be ordered and undisturbed. Most commonly it is a transition containing a combination of pleasant and painful events.

For the purpose of this thesis individuals who fit into the category of, or who are experiencing adolescence are variously referred to as adolescents, teenagers or young people.

In pre-industrial Western cultures the passage into adult society and adult-like responsibilities was more direct as children assumed a place in the work force. Industrialisation brought with it the necessity for training in specific skills and more education for the plethora of clerical jobs that developed (Poole, 1983; Stevens-Long and Cobb, 1983). As young people began to spend more time at schools and joined the work force at a later age, this period of adolescence became more gradual. Whilst there is more time to develop and prepare for adulthood, there is also more time for conflict and uncertainty to arise as the vacillation between childhood and adulthood occurs. The idea of adolescence as a time of "storm and stress" is seen
by cultural anthropologists as more likely to occur in a western society where there are few 'rites de passage', no initiation ceremonies and few universal guidelines to mark the transition to maturity (Mead, 1961; Stone and Church 1984).

The notion of a turbulent adolescence is not supported by all researchers. Hill argues in "Adolescent Social Behaviour and Health", that the developments in research are no longer dominated by "knee-jerk acceptance or rejection of 'Sturm and Drang' views" (1987:14). Rather he suggests that current research is directed towards the distinctive features of adolescence and to the role of the adolescence in "transforming family interactions, family relationships and enduring intra-individual characteristics" (Hill, 1987:14). Newman and Newman (1987) argue that society's expectations of young people are marked by many contradictions. They suggest that the adolescent population offers unique challenges to researchers - a view echoed by many other interested writers (Brunswick, 1969; Court, 1984; Magilvy, 1987; Peppard, Hill and Ness, 1988; Raphael, 1989).

The adolescent continues to attract an ever increasing amount of attention, interest and concern from those most effected by this process of metamorphosis. Examples of concerned persons are parents, developmental psychologists, social workers, police, sociologists, spiritual leaders, teachers, manufacturers and salespeople. Health care personnel with a range of expertise are increasingly interested in matters pertaining to these young people as issues specific to adolescents become identified.
Considered by some to be a healthy stage of life, adolescence none the less produces problems of a physical, psychological and social nature that can threaten not only the young person's health, but also the health and well being of the future adult population (Millar, 1974; Bennett, 1982; Court, 1984; Robertson, 1986; Bearinger and Gephart, 1987; Blewitt, 1987; Marks and Fisher, 1987; Archer, 1989).

Every stage of life has its accompanying though not necessarily exclusive health problems. Some stages have a higher susceptibility to specific disorders than others. For example during adulthood, disorders such as ischaemic heart disease and cancer are more likely to occur, whilst after 45 years of age there is an increase in degenerative conditions such as arthritis and cerebrovascular disease (A.B.S, 1983; Davis and George, 1988). An average of 36.5 percent of hospital admissions for children under five years of age is for infections such as gastro-intestinal, respiratory, meningo-encephalitic and genito-urinary diseases. According to recent statistics, as children approach nine years of age there is an increase in incidences of respiratory disorders (Davis and George, 1988; Stanley and Williams in Vimpani and Parry, 1989.) Asthma has also been identified as a major chronic childhood disease in Australia and Britain (Milner and Webb, 1989). Cystic Fibrosis is a genetically determined disease seen mainly in children (Phelan, 1989). However there are now more young adults with the disease as treatment improves and the period of life expectancy increases.

Internationally and nationally, a specific range of health problems have been evident in, but have not necessarily arisen out of adolescence. These problems which are
discussed in Chapter 3, have been identified by many researchers, including Sternlieb and Munan, 1977 in Canada; Sobal, 1987 and Fisher, Marks and Triellor, 1988 in the United States of America (USA), Murray and Clifford, 1988 in Ireland and in Australia, Court, 1984; Bennett, 1985 and Robertson, 1986. Clearly the notion of health is a multifactorial one, as the physical, psychological, spiritual and social domains underpin the overall total picture of what is considered "Health" (Eberst, 1984; Boddy, 1985; Seedhouse, 1986; Pender, 1987; Mahler, 1988).

Friedman (1988) highlights the notion that it is the adolescent's behaviour that tends to cause more health problems than passively occur. The literature also suggests the implication of low self esteem in risk taking behaviour that can lead to health breakdown. Conversely health problems effect self esteem (McDermott, Hawkins and Duncan, 1987; Baumrind, 1987). When adolescents were asked to identify what they saw as being major problems for themselves, they identified a range of psychosocial problems such as those related to concern for their futures, a sense of belonging and relationships (Gibson, in Robertson, 1983).

Health concerns of adolescents appear to vary with their achieved maturity, cultural background, socio-economic situation, environment and most importantly their own perceptions of wellness/illness. Sobal (1987) points out that although much attention has been given to health beliefs, health knowledge and health behaviours among adolescents, there has been less attention given to the assessment of their health concerns. This deficit is identified by Sternlieb and Munan (1972) and Adams (1983). Smith, Turner and Jacobson (1987) also suggest that past research literature
"does not provide insight into perceived health concerns in terms of definitive trends of adolescent health worries" (1987:311). Many programmes for health promotion and treatment for adolescent disorders are based on responses and observations of adults. Notwithstanding that these responses and observations are valid, the question arises - "are they filling the adolescent's real need?"

The first International Symposium on Adolescent Medicine held in Helsinki in August, 1974, brought together a range of researchers with an interest in the needs of youth. Michael Cohen and his confreres from New York stressed at the conference in Session One, that implicit in any attempt to investigate adolescent health services, two fundamental factors need to be recognised.

"The first implies that there are identifiable health issues specific to the adolescent. The second suggests that unique services and programmes exist or may be developed to meet those pathophysiologic states" (Cohen, 1974:9).

If effective health care services are to be provided for adolescents, they must be adapted to fit their specific and special needs. There are a number of questions that are generated by this statement. These questions form the framework for a study into adolescents perception of health in one specific region.
1.2 Purpose of the Study

The main purpose of this study is to identify from a nursing perspective, the perceived health needs of adolescent students in the Hunter Region and to achieve the following objectives,

1. To develop a tool that will elicit information about the adolescents' perceived areas of concern about their health.

2. To provide a data base from which further health care recommendations/provisions could be established, (for example health promotion activities in a community setting, provision for inpatient and specialist services).

3. To improve the health profile of adolescents in the Hunter Region in an effective and economical manner by addressing the issues raised by the adolescents themselves.
1.3 Outline of Thesis

The remainder of this thesis adopts the following presentation.

In Chapter 2 the theoretical framework for the study is described. Chapter 3 explores some current literature that addresses issues related to the adolescent. The method adopted for the study is outlined in Chapter 4, followed by the results of the study in Chapter 5. Chapter 6 discusses the results and the conclusions and recommendations are contained in Chapter 7.
CHAPTER 2

FRAMEWORK
This chapter describes some selected theories and models of health promotion. These led to the formulation of a specific model that provided the framework for the study.

2.1 Framework

The framework for this study is based upon the notion that although adolescence is generally a healthy time of life it is also a period where some major health problems arise and existing problems may be exacerbated. There are lifestyle habits and practices established during adolescence that have implications for adulthood. It is important that a basis for a healthy adulthood be learned in adolescence in order to encourage and educate young people for a healthy trouble free adulthood (Perry, Griffin and Murray, 1985; Edelman and Mandle, 1986; Pender, 1987; Nutbeam, Farley and Tillgren, 1991)

Various models for health promotion focus on explanations of why people engage in behaviours that promote and maintain health or cause serious risk to their health status. Denyes (1988) explores the use of Orem’s conceptual model of nursing as a framework for health promotion. She believes that Orem’s theories of self care, "the actions persons perform in the interest of maintaining life, health and well being" and self care deficit, contain several relevant concepts important to health promotion (1988:13). Orem identifies a number of factors that influence or modify the ability to "self care" and to undertake "therapeutic self care requisites". These factors include age, gender, developmental state, conditions and patterns of living, family and sociocultural factors and health state and the health care system issues.
Denye's study shows that "self-care" and "self-care agency" are important indications of health status when health is viewed as a "general positive state of integrity and soundness". This is not shown to be the case however when health is viewed merely as the absence of disease. Adolescents with health problems score lower on the self care agency scale than those with no problems. How the adolescent actually views health would contribute to a decision to use this particular model for health promotion.

The Health Belief Model developed in the early 1950's by Hochbaun, Kegelis, Leventhal and Rosenstock provides a framework to explain why some persons who are healthy take action to avoid illness while others do not (Becker, 1974; Boddy, 1985; Edelman and Mandle, 1986; Pender, 1987; Murray and Zentner, 1989). This model has often been applied by health education specialists to analyse those factors that contribute to a persons perceived state of health and/or risk of disease. It also addresses the probability of persons taking appropriate action with regard to their own health plans.

The model as modified by Becker (1974) is divided into three components: 1, individual perceptions; 2, modifying factors and 3, likelihood of action. Figure 2.1 shows an outline of the Health Belief Model.
Figure 2.1  The Health Belief Model. (From Becker, M. N., Haefner, D. P., Kasl, S. V., et al. in Becker, 1974)
Rosenstock’s 1974 paper discusses the Health Belief Model and preventative health behaviour and remarks that, possession of health beliefs indicates an orientation to the future, toward considered planning and toward deferment of immediate gratification in the interest of long run goals (1974:51).

Rosenstock also found that the patterns of behaviour that are developed early in life are not usually or likely to be motivated by the health concerns that may guide the behaviour of the adult.

"Health behaviour is related to subjective ideas about vulnerability and present health state, the value placed on health .....and the sense of internal versus local control". Murray and Zentner, 1989:529

Critics of the health belief model point out that it is directed more towards health protection behaviour and avoidance of illness than health promotion (Pender, 1987; Murray and Zentner, 1989). The model does not appear to specify the types of interventions that are likely to improve a person’s predilection towards preventative health behaviours (Edelman and Mandle, 1986). Mickalide (1986) argues that although the Health Belief Model provides information on "what" children of different ages believe about the components of the Health Belief Model, much of the research fails to address "why" children of different ages think the way they do about health matters. She emphasises that when designing health promotion and disease prevention programmes for school age populations, it is essential to take into account their stage of cognitive development.
Pender's Health Promotion Model (1986), is derived from social learning theory and is organised similarly to the Health Belief Model in structure. The three major categories of Pender's Model are cognitive perceptual factors, modifying factors and participation in health promoting behaviour. She includes the variables of importance of health under individual perceptions as well as perceived benefits of preventative actions and perceived value of early detection.

Figure 2.2 illustrates the component of each of these areas and the inherent relationships therein.

Figure 2.2  Health Promotion Model from Pender, 1986.
This model was proposed as an explanation of why individuals engaged in certain health actions. According to Pender, cues to health promoting action, or the variables influencing this health promoting action may be of internal or external origin. Feeling good or a sense of well being from actually undertaking health promotion activities could be cues for continuing that activity. She mentions the mass media as a source of external cues.

Various stages and events in life can be defined as a crisis or a turning point. Adolescence can be viewed as a developmental crisis that has potential for growth. The University of Connecticut School of Nursing uses "the crisis model" as the framework for their curriculum. This model has a psychosocial component and a biophysical component and is divided into three stages --- pre crisis, crisis and post crisis. See figure 2.3
Adolescence could be described as the pre crisis "hazardous event" requiring intervention. Intervention could be viewed as effective health education, health promotion or assistance with specific problems, that addresses the crisis phase with the aim of positive outcomes and growth in the post crisis phase, analogous with adulthood.
Figure 2.4 taken from Thibodeau (1983) illustrates the potential for growth after a person has been exposed to a crisis.

Figure 2.5 is a modification by the writer of the previous model and depicts the "hazardous event" as 'change' and the "crisis" as 'adolescence' and how health promotion strategies, education and possibly early treatment for disorders can potentiate growth, leading to 'optimal adult health' to replace "higher level of functioning".
Figure 2.5  Growth Potential: Adolescence as a Challenge. Adapted and modified from University of Connecticut School of Nursing Curriculum (in Thibodeau, 1983)

This model was further modified to allow for the identification of contributing factors to health or health breakdown and the possible outcomes as shown in figure 2.6.
Figure 2.6  Theoretical Framework for Study
The common factors in the discussed models for health promotion are the identification of psychosocial and biological risks to health, the necessity for intervention and the desire for positive outcomes.

The model illustrated in figure 2.6 is a representation of information present in the three models mentioned (i.e. Becker et al, 1974; Pender, 1986 and University of Connecticut School of Nursing in Thibodeau, 1983), and is the framework adopted for this study. It identifies contributing factors to either positive or negative health behaviours that may lead to health or to health breakdown. The model also identifies interventions that can reinforce effective health behaviours or can attempt to change or modify potential harmful behaviours. The two-way arrows indicate that the factors identified as having an effect on positive or negative health behaviours can also be effected by those health behaviours.
CHAPTER 3

LITERATURE REVIEW
This chapter discusses recent literature concerning issues pertaining to adolescent health and health problems with sections on adolescence and health. Adolescent health behaviours and usage of health services are also addressed.

3.1 Introduction

In the last decade there has been a burgeoning of information written about the adolescent years. Major themes emerging from the literature will be discussed. This will enable identification of those topics in the literature which consider the well being of adolescents to be of major importance for the present and provide a focus for the study. Information from the literature will generate the framework for the instrument used to measure adolescents health as perceived by them and to establish areas of health that cause concern to the adolescents. The literature to be reviewed can be grouped into specific categories. The following broad categories are utilised.

3.2 Adolescence.

3.3 Health.

3.4 Adolescent Health Behaviours.

3.5 Health problem areas;
   - biological aspects,
   - sexuality,
   - psycho-social aspects.

3.6 Usage of health care services.

3.7 Summary.

3.8 Research questions
3.2 Adolescence

Adolescence can be described variously as a stage, crossroads in life, a transition, a metamorphosis and a process. Adolescence can be defined biologically, psychologically and sociologically (Robertson, 1986; Bennett, 1987; Murray and Zentner, 1989; Blum, 1989; Hurrelmann and Losel, 1990; Hogarth, 1991). The term adolescence comes from the Latin "adolescere" meaning "to grow up" and describes that period of time between the beginning of puberty and the attainment of adulthood. Often referred to as the teenage period, there are many individual differences that can extend adolescence beyond the strictly "teen" years. The World Health Organisation defines "adolescence" as being between the ages of 10 years and 19 years and youth as between 15 years and 24 years (World Health Organisation, Technical Report Series (1977) N609:5). The Australian Bureau of Statistics organises data by age into two groupings, namely 10 years to 14 years and 15 years to 19 years. Various studies address a range of ages. One study carried out in Western Sydney in 1982 surveyed boys and girls between 12 years to 16 years (Weston, N., Buchanan, N., McNeill, D. and Clarke, S.). Another in Western Australia looked at young people aged from 12 years to 15 years, 16 years to 19 years and 20 years to 24 years (Robertson, 1987), whilst two more recent studies surveyed young people from 12 years to 17 years (Liebenberg and Prager, 1990; Howard, 1991).
For the purpose of this study adolescence is defined as that period between the ages of 10 years and 19 years as defined by the World Health Organisation. The period of adolescence actually chosen for the survey is between 11 years and 17 years.

Chronological age is not necessarily a reliable indicator of adolescent development, as a study of 9,000 Australian "teenagers" undertaken by Connell, Stroobant, Sinclair, Connell and Rogers in 1975 showed. Another early study reported in the book "Studies of the Australian Adolescent" edited by Collins in 1975 addressed the issue of puberty onset and the physiological changes throughout the adolescent years and the variability of the timing of these changes. The more recent works of Stevens-Long and Cobb, in 1983; Bennett, 1985; Wolfish, 1987; Kohen-Raz, 1988; Silva, 1988 and Robertson, 1989 amongst others also mention the normal variations and patterns, especially of early adolescence.

Although only a part of adolescent development, there can be no doubt that the biological changes and consequent altered physical appearance indicate important milestones for adolescents. However, as pointed out in Adams, 1983 and the WHO Technical Discussion document on the Health of Youth 1989, it takes time for the young persons to become comfortable with their bodies. Therefore comparisons with their peers, resulting in identification of growth "asynchronies" (Peterson, 1988:262), real or perceived, can result in anxiety and concern and have a detrimental psychological impact on some young people.
Cohen and colleagues (1974) in their discussion on perspectives in Adolescent Medicine found that definitions of normal adolescence focussed on chronological age coupled with one of three clinical phenomena. The clinical phenomena are described firstly as endocrine age, related to the onset and termination of puberty and secondly the anthropometric parameters such as height age, weight age or bone age. The third phenomenon is "the onset of a series of psychosocial behaviours and their satisfactory resolution or psychological age" (Cohen et al 1974:10). Cohen and colleagues continue with criteria developed and used by the Division of Adolescent Medicine at Montefiero in New York which provided a "functional index of maturation". Included in this list of criteria are psychosocial development, sexuality and intellectual - vocational status.

Biological maturation is accompanied during adolescent development with efforts at socialisation and the increase and growth of cognitive and affective skills (Peterson, 1984; Newman and Newman, 1988). Many writers focus on adolescence in terms of a life span orientation or framework. Baltes, Reese and Lipsett, quoted in Poole, (1983) point out that life-span development orientation is concerned with the description, explanation and modification of the human developmental processes from conception to death.

The life span approach examined individual development within the context of social change. Some sociologists tend to describe adolescents in terms of their status within the society in which they live. Stevens-Long and Cobb report that social time makes sense of the growing process in terms of the "progress individuals make in
passing through society's institutions" (1983:35). Connell and colleagues point out that "admission to adulthood is controlled by the regulations of social norms and customs" (1975:8). However social pressures to become an independent person frequently are at odds with the rules and regulations imposed by that same society or culture. In fact many young people may "have to face radical restrictions concerning their options for individual development and their chances for social and economic integration" (Franzkowiak quoted in Vimpani and Parry, 1989:313).

Many psychologists are interested in the way young people's behaviour reflects and is reflected by the change process that occurs in adolescence. Frequently the psychological approach to the definition of adolescence, therefore, focuses on the developmental tasks, according to Stevens-Long and Cobb (1983). Peterson (1984) reports that during adolescence almost all aspects of psychological development are effected by biological change, "from cognitive growth and performance in school to personal feelings and social relationships with friends and family" (1984:267). Psychosocial development may be measured by the completion of designated tasks. Often adolescence is divided into three areas by writers.
These are :-

1. early adolescence - when a person learns to be comfortable with the altered body image,
2. middle adolescence - when the adolescent sub-culture appears, and
3. late adolescence - the time during which the young person matures to achieve psychosocial and economic independence.

The developmental tasks have been identified through, and based on the work and theories of many people. Included in this list are Piaget (1969) and his theory of cognitive development that equates adolescence with his stage of formal operations; Erikson’s (1963) theory of personality development with the identity versus role confusion stage; and Marcia’s (1980) adaption or refinement of Erikson’s theory. Kohlberg’s (1984) theory related to the development of moral judgement, sees adolescents attaining level two, probably to stage three and four. A number of writers refer to Freud’s theory of human sexuality and the genital stage or that stage of "awakening" following the sexual latency period.

Although it would appear that the "tasks" of adolescent development are extensive and complicated, these tasks can be grouped under four headings based on Havighurst’s work and mentioned by Bennett (1985). Stevens-Long and Cobb (1983) identify eight developmental tasks that each relate to the central task of achieving a personal identity. Four of these relate to early adolescence and four are more important in late adolescence. Adams (1983) includes six developmental tasks
in her paper on adolescent health care. The following list of tasks is a combination of those mentioned by these three writers.

1. Becoming comfortable with their bodies.
2. Achieving masculine or feminine roles.
3. Acquiring new social skills.
4. Striving for economic and social independence.
5. Developing a value system.

Adolescence is a time of change - change accompanied by development and growth.

"It is a time of physical growth, of flowering of maturity through pubertal developments and the evolution of a thinking and responsible adult. To observe and try to comprehend this period of biological, intellectual and psychosocial evolution is to behold one of nature's wonders", Wolfish (1987:438).

3.3 Health.

The implications of the biological, psychological, sociological and spiritual growth patterns of adolescents for their health status has long been recognised in the relevant literature. A global definition of health is not easy to find. Health means different things to different people. Davis and George (1988) found that there seems to be little uniformity in the ways health is defined, as do Becker, 1974; Perry, 1984; Boddy, 1985; Better Health Commission, 1986; Seedhouse, 1986; Pender, 1987 and Mahler, 1988.
Recent definitions of health in the literature transcend the traditional emphasis of absence of illness or disease, and focus on the concept of health as encompassing many elements, yet achieving a balance of these elements. The World Health Organisation's (WHO) definition of health emphasises the positive qualities of health. "Health is a state of complete physical, mental and social well being and not merely the absence of disease and infirmity". Many people believe this definition addresses "the complexity of health but represents the ideal rather than a goal that can be achieved" (Pender, 1986:17), a view echoed by Seedhouse (1986) and Davis and George (1988). The Better Health Commission (BHC) document (1986) acknowledges that the WHO definition is general and idealistic but that it "promotes a view of primary health care which embraces social, political and ethical considerations as well as clinical ones" (BHC,1986:1). The authors of the report stress the broadly based nature of health care. "The term 'health' lacks a concrete and unambitious referent to the real world and is therefore an abstraction" (Boddy, 1985:15).

Davis and George (1986) point out a number of different factors that effect the way individuals and groups view health. They note that those persons with a professional interest in health may develop definitions of health that differ from those of other members of society. There is a diversity of beliefs, both over time and contemporaneously that form a backdrop, and suggest "specific beliefs about health and illness, sensible ones within any particular society and ones, which might seem peculiar to outsiders, in culture, geography and time" (Davis and George, 1988:25).
Eberst (1984) has identified six dimensions of health, separate, though interrelated, that comprise human health. These dimensions are physical, emotional, social, spiritual, mental and vocational. He uses these six dimensions to develop the health cube model based on the multidimensional puzzle, Rubik's Cube®. This model pursues a holistic approach to the dynamic nature of health. Each side of the cube, or dimension, is composed of smaller sub-elements, and whenever one element is rearranged or "worked on" the movement effects almost every other sub-element in each dimension. Eberst (1984) believes, "This concept is important, because most individuals who seek to improve their health, do so by focusing only one dimension at a time" (1984:101).

Figure 3.1  The Cube Model of Health from Eberst, Richard M., (1983)
Eberst (1984) describes how his particular model of health can be used in the practice of health education to young people in schools - to enable the individual programmes to become more meaningful to adolescents - and vicariously the teachers as well. "By relying on a more complete model than the medical concept, school health professionals can provide students with more than specific behaviourable prescriptions" (Eberst, 1984:103).

Boddy (1985) divides health into intrapersonal, interpersonal, extrapersonal and metapersonal perspectives. Although Boddy (1985) suggests that health is an abstract concept, she acknowledges that health and the implementation of health policies are matters for individuals, groups, communities and nations to decide for themselves. [Adolescents being one of the groups to consider]. Her underlying propositions are that health is desirable, a matter for universal concern and that health is modifiable by human interventions.

Thibodeau (1983) examines a number of nursing models and notes that wellness (and illness) may be conceptualised as a continuum, as co-existent states or as mutually exclusive or bipolar states. However, she argues that the perspective of the person addressing the issue of health gives direction for their definition of health,

"a state of well being in which the person is able to use purposeful, adaptive responses and processes, physically, mentally, emotionally, spiritually and socially, in response to internal and external stimuli in order to maintain relative stability and comfort and to strive for personal objectives and cultural goals", Thibodeau (1989:570).

Seedhouse discusses health and states,
"A persons optimum state of health is equivalent to the state of the set of conditions which fulfil or enable a person to work to fulfil his or her realistic chosen and biological potentials. Some of these conditions are of the highest importance for all people. Others are variable dependent upon individual abilities and circumstances" (Seedhouse, 1986:61).

Work for health is essentially enabling. Enabling means that "all approaches designed to increase health are intended to advise against, to prevent creation of, or to remove obstacles to the achievement of human potential," (Seedhouse 1986:53). These obstacles can have a biological, societal, environmental, familial or personal basis. The elimination of problems or "obstacles" to health and potential is the aim of many concerned with health. This is not necessarily a negative operation because as Seedhouse says "the removal of impediment can often be achieved only through addition" (1986:54).

Seedhouse suggests the relevance to the person promoting health to the adolescent population is the "addition" of information to address such obstacles to health as ignorance, lack of confidence, apathy, powerlessness and insufficiently developed attitudes to health, is "necessary to provide the right conditions for human flourishing" (Seedhouse 1986:54).

Cmich (1984) agrees with Svihus that health is "an approach, a concept, and a process to focus healing energies within the individual and bring about the integration of body, mind and spirit" (Svihus, 1980:227 in Cmich, 1984). Cmich
(1984) believes that the concepts of holistic health have exciting implications for the health education of young people in schools. She says that holistic health originates in life attitudes that can be developed and nurtured early. Learning activities can be provided to help students become knowledgable about health care options and can also "put students in touch with their own inner resources for health and healing" (Cmich, 1984:32).

Perry (1984) supports Cmich's views and identifies four domains of health that are interrelated in the whole person. Figure 3.2 illustrates these domains.

![Figure 3.2 Domains of health from Perry, (1984)](image-url)
The recognition that physical health may be effected by factors in social, psychological or personal health provides a broad focus for consequences of health behaviours. This model of health is especially relevant to adolescents, where health behaviours are often regulated by particular aspects of each of these domains. Perry (1984) bases a comprehensive approach to health promotion for young people on this concept.

Health and illness are not discrete entities, but part of a continuum and if good health is denied to some persons it is still possible to develop healthy responses to that situation and "striving for good health is a complex quest" (Better Health Commission, 1986:2). One of the major goals of the Better Health Commission is to reduce preventable illness, injury and death among Australian children and adolescents. The document identifies and emphasises the need for school based education about health particularly with a regard to a number of identified risk factors that lead to ill health (Better Health Commission, 1986:2). Pender (1987) in examining the multidimensional nature of health states that "health reflects a process of development, characterised by frequent experiences of challenge, achievement and satisfaction" (1987:27).

Pender (1987) argues that the early development of health habits is essential for a healthy and vigorous childhood, as well as a quality of life in later years. Adolescence is "a period in the life span of major developmental significance and has special relevance for health" (Pender, 1987:6). Pender's model of health outlines a framework to help the development of positive health behaviours.
Any definition of health related specifically to adolescents must address a number of areas specific to their age, development and needs. The adolescents own perception of what health means to them, needs to be investigated.

3.4 Adolescent Health Behaviour

Health is a function of health related behaviour. The World Health Organisation Expert Committee met in 1965 on the Health Problems of Adolescence and in 1976 on Health Needs of Adolescents, and has continued to address problems associated with adolescent health. The terms of reference recognised the formative nature of adolescence with regard to behaviour patterns and activities important to health. The WHO Technical Discussions on the Health of Youth held in May 1989 note that as public health measures have decreased the incidence of disease from "involuntary infection", attention has been turned towards those problems that arise from specific behaviours. It is the young people's behaviour that is the "key to their own present health, their subsequent health in adult life and the health of their future children" (World Health Organisation, 1989). Mickalide agrees and notes that "Behavioural risk factors equal if not surpass biological ones for causing disease and death" (1986:5). Moore and Williamson state that the, "relationship between health status and behaviour (lifestyle choices) as well as the condition of the environment are being demonstrated" (1984:195). The major causes of both morbidity and mortality in the adolescent are behaviourally generated, according to many researchers. See (Millar, 1974; Bennett, 1980; Better Health Commission, 1986; Blum, 1987; Irwin, 1987; Petosa, 1989).
Burkinshaw emphasises that young people form a distinct population group, "because peer and societal pressures, poverty and powerlessness motivate young people to take risks with their health or force them into health risking lifestyles" (1986:16). Petosa supports this view pointing out that, "personal and social growth characteristics of adolescence support an extensive amount of experimentation with a wide range of behaviours, some of which increase the risk of disease, injury or negative social consequences" (Petosa, 1986:22).

Robertson (1989) also notes that risk-taking is now commonly referred to in terms of lifestyle behaviour. The view that risk-taking behaviour characterises normal adolescent development is supported by a variety of researches (Bennett 1985; Baumrind, 1987; Pender, 1987; Franzkowiak, 1988; Hubbard and Young, 1988; Robertson, 1989 and Petosa, 1989). Risk taking may be medically or psychiatrically hazardous, however "such practices seem to be elements of coping with developmental problems in a socially legitimate way" (Franzkowiak, 1988:43). However, Baumrind (1987) warns that it is important to differentiate between normal transition risk-taking behaviour and pathological or pathogenic expressions for which secondary gains are virtually absent. She says,

"Risk-taking becomes destructive when it contributes directly or indirectly to the process of becoming alienated rather than to exploratory or experimental processes that are developmentally normal and preparatory to commitment" (Baumrind, 1987:120).

In her investigations in the USA, Baumrind (1987) highlights the problems caused by substance abuse, particularly alcohol and drugs, and talks about consequential
health problems. She also mentions teenage pregnancies, health endangering eating disorders such as anorexia and obesity, and suicides as associated with, but not necessarily "risk-taking behaviour". Adolescent behaviours can place them in a high risk category for sexually transmitted diseases including specifically A.I.D.S., unintentional injuries such as motor vehicle accidents, mental health disorders characterised by self inflicted injuries and suicide as well as psychoses and physical and sensory disabilities. Writers who have examined the issue of the consequences of risk taking behaviour include Millar, 1987; WHO, 1977 and 1989; Resnick, 1982; Williams, 1987; Wishon, 1988; Silva, 1988; Taylor-Nicholson, Wang and Adame, 1989; Greig and Young, 1989. Keidel (1983) and Birleson (1988) specifically examined suicide and para suicide as outcomes of specific behaviours in adolescents.

In the adolescent with a chronic or long term illness, either developed in adolescence or carried through from childhood, risk-taking behaviour may be manifested as non-compliance with diet and/or exercise, non adherence to drug regimes, non attendance at medical and paramedical appointments or failure to cease risk behaviours such as smoking (Friedman, 1988; Blum in Hofmann and Greydanus 1989). Siegel (1987) gives an example of a youth with haemophilia riding a motorcycle without a helmet.
An Australian College of Paediatrics document (1980) identifies the previously mentioned inappropriate behaviours as major problems and although of less concern to the young person during adolescence, it notes some health behaviours can result in obesity, hypertension and hypercholesterolaemia in adulthood. In agreement are Bennett, 1980; 1985; Australian Department of Health, 1981; Court, 1984; Robertson, 1986.

Burkinshaw (1986) reiterates that adolescent health problems predominantly arise out of lifestyles, attitudes and responsibilities. Powerlessness, pressure and poverty can result in health damaging behaviours by young people" (Burkinshaw, 1986:16). However, because of this

"much of the burden for health enhancing behaviour, falls on the adolescent or youth themselves who must increasingly take and act upon, decisions of an educational, vocational and personal nature with major health consequences for the present and future" (World Health Organisation, 1989:14).

3.5 Health Problem Areas

Whilst it has been clearly established that behaviours play a major role in wellness and illness, there are conditions that effect the health of the adolescent not dependent or only partially dependent on behaviour. These health breakdown problems can be categorised in a number of ways. Hofmann and Greydanus (1989) examined general medical disorders using a systems approach. They address psychosocial issues in adolescent medicine and special health issues such as nutritional disorders, substance abuse and also the disabled adolescent. Green and Horton (1982) quote American
figures indicating high rates of death due to accidents, violence and suicide. Cancers and heart disease fill fifth and sixth places in the figures. Blum (1987) concurs with Brunswick, 1969; Coates, Petersen and Perry, 1982; Green and Horton, 1982; Marks and Fisher, 1987; and the National Adolescent and Student Health Survey (USA), 1988.

In Australia Clarke et al, 1982; Balaam, 1986; Robertson, 1986; Court, 1987; and Bennett, 1988, identify similar problems and in addition they emphasise problems with a psychosocial emphasis and chronic disease. Cohen et al (1974) organised specific health problems for adolescents into three categories, based on data collected over several years and from seventy thousand young people seen at their Medical Centre in Montefiero. Litt (1982) identifies four major categories of health problems whilst others concerned about adolescent health (Australian College of Paediatrics, 1980; Commonwealth Department of Health, 1981; Department of Health, NSW, 1985; Bennett, 1985; Connelly and Borger, 1985; Burkinshaw, 1986; Robertson, 1986) have organised disorders into the categories developed by the World Health Organisation in the Philippines in 1980. These categories or themes are:-

1. biological issues,
2. risk-taking behaviour,
3. sexually related behaviour and
4. emotional problems.
The themes are not prioritised nor are the parameters of each area clearly defined or discrete but are rather blurred, as factors from one or more areas impinge on another area. For example, a behaviour defined as risk-taking, experimentation with drugs, may result in inappropriate sexual activity which may result in an unplanned pregnancy or a sexually transmitted disease. Likewise, an emotional disorder may lead to a nutritional problem that could exacerbate a pre-existing medical problem like diabetes. In the World Health Organisation document "the Health of Youth" (1989), health problems are divided into three broad categories. Those conditions originating during childhood that manifest during adolescence, problems that arise particularly during adolescence, physical, social and psychological, and conditions originating in adolescence which manifest in later life are discussed in the following section.

Risk-taking behaviour and the subsequent effects have been discussed and found to have profound implications for the current and future health of adolescents.
In this section the review of topical literature will be addressed under the following main areas, namely

3.5.1 Biological Aspects of Health

1. Problems related to development and growth.
2. Pre-existing conditions likely to become worse during adolescence or require adjustment treatment.

3.5.2 Sexuality

1. Sexually transmitted disease.
2. Unplanned pregnancy.
3. Sexual abuse.

3.5.3 Psychosocial Problems

1. Emotional disorders.
2. Psychosis.
3. Environmental factors.
3.5.1 Biological Aspects of Health

PROBLEMS RELATED TO DEVELOPMENT AND GROWTH

Problems related to development and growth include, delayed sexual development (WHO, 1977; Bennett, 1980; 1985; Sklar, 1982; Balaam, 1986; Burkinshaw, 1986), short stature (Sklar, 1982; Bennett, 1985; Aynsley-Green, 1987; Brookman, 1989) and acne (Sternlieb and Munan, 1972; Cohen et al, 1974; Litt, 1982; Bennett, 1985; Smith et al, 1987; Howard, 1989; Greydanus and Hofmann, 1989). The impact of these problems on the adolescent should not be underestimated at a time when appearances and wanting to look like everyone else are so important. Added to the above are menstrual disorders (Cohen et al, 1974; Blum, 1982; Bennett, 1985; Howard, 1988; Robertson, 1989; Brookman, 1989), scoliosis (Cohen et al, 1974; Litt, 1982; Blum, 1982; Bennett, 1985; Robertson, 1989; Greydanus and Hofmann, 1989; Malleson and Ansell, 1989) and slipped epiphysis (Cohen et al, 1974; Bennett, 1985; Malleson and Ansell, 1989; Greydanus and Hofmann, 1989; World Health Organisation, 1989)

PRE-EXISTING CONDITIONS LIKELY TO BECOME WORSE DURING ADOLESCENCE.

Those pre-existing conditions likely to become worse during adolescence (or at least require adjustments to treatment) include insulin dependent diabetes (Cohen et al, 1974; Commonwealth Department of Health, 1981; Litt, 1982; Bennett, 1985; 1988;
Marks and Fisher, 1987; Siegal, 1987; Court, 1987; Blum, 1988; WHO, 1989; Greydanus and Hofmann, 1989) and cystic fibrosis (Robertson, 1986; Phelan, 1987; Dibble and Savedra, 1988; Blum, 1988; Greydanus and Hofmann, 1989; Stanley and Williams, 1989; Connell, 1989).

Sinnema, Van der Laag and Kuis (1988) noted an increased risk of social and emotional problems in the adolescent with a chronic illness. Connell points out that, children with chronic illnesses such as cystic fibrosis and diabetes show nearly twice the rate of psychological disturbance as children who have normal health (1989:426).

If the chronic disorder is epilepsy the figures for psychological and social problems increase five fold (Rutter et al, 1976). Epilepsy effects one percent of the population in USA and one in four epileptics are under eighteen (Hofmann and Greydanus, 1989). Generally seventy five percent of cases of epilepsy have their onset before eighteen years of age (O’Donahoe, 1989). Epilepsies may improve or deteriorate during adolescence according to Bennett, 1985; Robertson, 1986; O’Donahoe, 1989; Connell, 1989; Newacheck, 1989. Asthma is the most common chronic lung disorder of adolescents and accounts for a considerable time away from school (Bennett, 1980; Milner and Webb, 1987; Silva, 1988; Stanley and Williams, 1989; Greydanus and Hofmann, 1989; Keller and Nicolls, 1990; Telegraph-Mirror 6-5-91). These disorders are by nature chronic. According to Balaam (1986) the overall prevalence of chronic disease has been estimated to be between 10 percent and 20 percent in persons less than seventeen years of age.
CONDITIONS ORIGINATING IN ADOLESCENCE WITH IMPLICATIONS FOR FUTURE HEALTH.

During adolescence specific life threatening conditions and behaviour patterns may become manifest and be virtually ignored. Balaam (1986) suggests that many of these specific conditions and factors identified below can be early warning signs of disorders of the future health of the young people.

There are a number of conditions that are related to nutrition. The normal physical growth and maturation of adolescence may be adversely effected by poor eating habits and an inadequate diet. Anaemia, vitamin deficiencies, hypercholesterolaemia, hypertension, obesity, anorexia nervosa and bulimia are all cited in the literature as disorders that can arise during adolescence with implications for future health (Story, 1982; Alton, 1982; Daniel, 1982; Skinner and Woodburn, 1984; Bennett, 1985; Balaam, 1986; Muscari, 1988; Young, 1988; Robertson, 1989; Carr, McDonnell and Afnan, 1989; World Health Organisation, 1989). Poor nutritional status can also complicate an early unplanned pregnancy (Alton, 1982; WHO, 1989).

Dental caries may also be a direct result of dietary habits (Cohen et al, 1974). Unhealthy eating habits and poor or inadequate oral hygiene may lead to gum
disease and loss of teeth in adulthood as well as in adolescence. (Sternlieb and Munan, 1972; Marks and Fisher, 1987; Robertson, 1987; WHO, 1989;)

Other disorders that fit into this category are migraine headaches, irritable bowel syndrome and testicular cancer (Sanderman, 1987; Stanford, 1988; Vaz, Best, Davis and Kaiser, 1988) and cervical cancer (Neinstein, 1988).

**CHRONIC DISORDERS**

The estimates of the prevalence of chronic disorders in young people can depend on whether or not disorders of sight, hearing, mental functioning, speech learning and behavioural disorders are included. If the category is restricted to organic disease, the rate is approximately 7 percent to 10 percent (Eiser in Hurrelman and Losel, 1990). Epidemiological estimates put the incidence generally between 10 percent to 20 percent (Bennett, 1985; Balaam, 1986; Blum, 1987; Siegal, 1987; World Health Organisation, 1989; Brambring, Losel and Skowronek, 1990; Keller and Nichols, 1990)

There has been in recent years a higher proportion of young people effected by such disorders as cystic fibrosis, spina bifida, leukemia and congenital heart disease, surviving into adulthood because of advances in the care and treatment of these disorders (Bennett, 1985; Siegal, 1987; Blum, 1988; Hofmann and Gabriel, 1989; Newacheck, 1989). Hofmann and Gabriel, (1989) list four general conditions that contribute to the impact of chronic illness ------- age of onset, visibility, degree of
impairment and the course of the disease. They continue to point out not only the possible effects on the young person with the condition, but also the impact on their parents and siblings. The possible family situations are discussed in detail by Ell and Northern (1990). Adolescents experiencing chronic illness may find that their maturational process is slowed; they may suffer social isolation and rejection by their peers; they may be tempted to take risks with their treatment regimes, and they may be overly conscious of the emotional and financial strain on the family (Bennett, 1985; Balaam, 1986; Siegal, 1987; Blum, 1988; Newacheck, 1989; Dragone, 1990).

The preoccupation with bodily changes during adolescence can become a more painful experience for a young person with a visible disability. Disabilities usually mean a decrease in an ability to conduct normal activities both at school -- if the young person can attend -- and at weekends at either sporting or leisure activities (Bennett, 1985; Blum, 1988; Newacheck, 1989).

Jensen (1985), identifies three problem areas for adolescents with disabilities. They are acceptance, independence and expectations. He points out that handicapped adolescents have an especially difficult time dealing with social conditions and stereotypic attitudes (1988). Owen and Matthews (1982) and Keller and Nicolls (1990) elaborate on the areas of growth, ambulation, communication, health planning and hygiene, decision making, self image and self esteem. Sexuality and sexual development can be areas of particular distress for disabled young people as they doubt the normalcy of their sexual organs and their ability to function sexually.
Bennett (1985) points out that the process of establishing a psychosexual identity depends initially on acceptance of one's own body. Any deformity or imperfection, obvious or hidden, can have an adverse effect (Owen and Matthews, 1982; Hedahl, 1983; Blum, 1988; Dragone, 1990). However despite their illness as Hedahl remarks "disabled adolescents are more like than unlike their peers". 1983:257.

ACCIDENTS.

Accidents account for 20 percent to over 60 percent of deaths among young people with generally higher rates among males (Robertson, 1986; WHO, 1989; Pilkinson in Hurrelmann and Losel, 1990; Nutbeam, Farley and Smith, 1990). Table 3.1 shows a comparison of causes of death in young people aged from fifteen to twenty four years in Australia during 1982 and reported in Davis and George (1988).

<table>
<thead>
<tr>
<th>CAUSE OF DEATH</th>
<th>NUMBER OF DEATHS</th>
<th>PERCENTAGE OF DEATHS IN AGE GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>248</td>
<td>873</td>
</tr>
<tr>
<td>Other accidents</td>
<td>64</td>
<td>332</td>
</tr>
<tr>
<td>Suicide</td>
<td>42</td>
<td>258</td>
</tr>
<tr>
<td>Cancer</td>
<td>57</td>
<td>116</td>
</tr>
<tr>
<td>Other causes</td>
<td>158</td>
<td>232</td>
</tr>
<tr>
<td>TOTAL -- all causes</td>
<td>569</td>
<td>1911</td>
</tr>
</tbody>
</table>


Table 3.2 is taken from Hutchinson, T. P., Road Accident Statistics, (1987) showing death rates per 100,000 population in a given age range / sex range for road accidents during 1984 and 1985.

Table 3.2. Deaths by road accidents, age and sex, per 100,000 population

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>TOTAL NUMBER</th>
<th>OVERALL RATE</th>
<th>FEMALES</th>
<th>MALES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5-14</td>
<td>15-24</td>
<td>5-14</td>
</tr>
<tr>
<td>Australia</td>
<td>2714</td>
<td>17.4</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Canada</td>
<td>3973</td>
<td>15.8</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1306</td>
<td>20.1</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>England/Wales</td>
<td>5012</td>
<td>10.1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>USA</td>
<td>43428</td>
<td>18.6</td>
<td>4</td>
<td>17</td>
</tr>
</tbody>
</table>
Most deaths are the result of motor vehicle or motor bike accidents. There may be complicating factors related to extreme risk taking behaviour and usage of drugs and alcohol (Nguyen-Van-Tam and Pearson, 1985; Hurrelmann and Losel, 1990).

Table 3.3 shows separations/discharges from Hospitals in the Hunter Region because of injuries and poisoning from 1989 to 1991. This classification is used by the Hunter Area Health Statistics Unit. There may be other admissions/separations due to accidents of any type, however it could not be established from the available data. What can be seen from the table 3.3 is the higher proportion of males requiring treatment.

<table>
<thead>
<tr>
<th>AGE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NUMBER</td>
<td>%</td>
<td>NUMBER</td>
</tr>
<tr>
<td>12-15 YRS</td>
<td>661</td>
<td>64.24</td>
<td>368</td>
</tr>
<tr>
<td>16-20 YRS</td>
<td>1382</td>
<td>71.20</td>
<td>559</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2043</td>
<td>68.79</td>
<td>927</td>
</tr>
</tbody>
</table>


Some adolescents have become disabled as a result of motor vehicle and other accidents. A considerable number of young people who are involved in accidents can be left severely disabled and require extensive rehabilitation and usage of support services. This is particularly true when the accident causes injury to the

Not all injuries to young people occur on the roads. The available figures indicate an increase in accidents at school and during sporting activities. Although some of these injuries may be considered serious, e.g. cerebral and spinal injuries, the less serious injuries --- fractures, knee and ankle injuries, contusions and abrasions --- may require ongoing medical and rehabilitative attention and an extended absence from school and further sporting activities (Ryan, 1982; Lee and Jacobson, 1987; Chalmers, Cecchi, Langley and Silva, 1989; Dyment, 1989; Hofmann and Greydanus, 1989). Most sports injuries involve the lower extremities (69 percent) and the knee is the most frequently injured joint (Hofmann and Greydanus, 1989). However Hofmann and Greydanus point out that "between 15 percent and 20 percent of all such injuries are preventable and are due to such factors as poor equipment and improper technique" (1982:222).

3.5.2 Sexuality

"Adolescent sexuality has often been described as a problem, when, in truth it is simply a fact" (Levine and Valle, 1982:167). Juhasz and Sonnenshien-Schneider
argue that sexual behaviour has been viewed as a moral issue and only recently has this perspective been broadened to include social and developmental considerations. Sexuality as part of the whole person is not some phenomenon appearing at adolescence. It is during adolescence however, that preoccupation with sexuality increases. It is difficult to define normal sexual activity, and questions arise as to what is appropriate sexual activity and when sexual activity is appropriate. Cues about appropriateness come from the adolescent's family, peers, teachers and increasingly from the media that give confusing and conflicting messages for the young people — not only about gender roles but also expected/accepted behaviour.

Raphael (1986) suggests that there are no real measures by which the normality of sexual behaviour can be judged and any discussion should address a range of related issues. Calderone (1982), writing about sexual socialisation, identifies aspects of the sexualisation process, which are closely associated with "positive body image, self esteem and a sense of sexual competence and mastery that should derive from it" (1982:155). Sexual identity is an important or significant part of self image and self esteem (Tauer, 1983; Thomas, 1983; Bennett, 1985; Bruess, 1985; Burke, 1987; Williams, 1987; Howard, 1989).

The motives for sexual activity in adolescence can differ somewhat from those of adults. Some of the adolescent's motives include "developmental experimentation, peer pressure, search for a love object or parental rebellion" (Muscari, 1987). Juhasz and Sonnenshein-Schneider (1987) believe that much of adolescent sexual
behaviour is unrelated to their real developmental needs and interests. They see it as behaviour in search of meaning. Young people everywhere for whatever reason, will continue with sexual curiosity and experimentation as they always have done. The course of this experimentation however will be determined by the prevailing forces, such as the risk of Sexually Transmitted Diseases (STD) especially Acquired Immune Deficiency Syndrome (AIDS), unplanned pregnancy, sexual abuse, abortion and social and moral mores. It is these potential consequences or associated problems of early sexual activity that cause concern rather than the activity itself.

Some surveys carried out in Great Britain, America and Australia have estimated that by seventeen years of age approximately 50 percent of young people are sexually active (Commonwealth Department of Health, 1981; Goldhagen, 1982; Edgar and Maas, 1984; Bennett, 1985; Williams, 1987; Kulbok, Earls and Montgomery, 1988; Neinstein, 1988, Howard, 1989; Robertson, 1989). In the meantime morbidity related to inappropriate or unprotected sexual activity continues to accelerate for adolescents as well adults. The asymptomatic nature of some of the diseases, the risk of later infertility problems, the perceived or real social recriminations and the personal costs are particularly worrying to health care workers and those people with responsibility for young adolescents.
SEXUALLY TRANSMITTED DISEASE (STD)

The incidence of STD in adolescents is increasing particularly over the last 18 years (Blum, 1982; Bennett, 1985; Marks and Fisher, 1987; Robertson, 1987; Newnham, 1989; World Health Organisation, 1989). Figures show that Gonorrhoea continues to have a fairly high incidence in young people, whilst Syphilis incidence varies from country to country (World Health Organisation, 1989). Chlamydia Trachomatis has displaced Gonorrhoea as the most common sexually transmitted disease for young people in developed countries (Neinstein 1988:118). This infection can cause urethritis, cervicitis, epididymitis, pelvic inflammatory disease, newborn conjunctivitis and pneumonia. Pelvic inflammatory disease is a serious complication of sexually transmitted disease leading to increased risk of chronic pelvic pain, ectopic pregnancy, decreased fertility and infertility (Blum, 1982; Stanley and Newnham, 1989; Blythe et al, 1988; Golden, Neuhoff and Cohen, 1989).

The increasing incidence of Herpes Simplex Type 2 virus and Human Papilloma Virus is particularly worrying because treatment is not curative and there is evidence of association with cancer of the cervix and foetal damage. Early sexual activity and multiple partners have also been implicated in an increased risk of cervical cancer (Blum, 1982; Blythe, Katz, Orr, Caine and Jones, 1988; Stanley and Newnham, 1989). There is evidence that adolescents are at an increasingly high risk of contracting the Human Immuno-deficiency Virus (HIV) that is responsible for Acquired Immuno-deficiency Syndrome (AIDS). This is related to their tendency towards unprotected, risky sexual behaviours and intravenous drug usage,
compounded by the lack of knowledge or misinformation about the disease and its means of spread. Recent figures for Australia indicate that 36 percent of 15 - 17 year olds were having intercourse and only 15 percent used condoms (National Advisory Council on AIDS quoted by Pearn & Vimpani, 1989). The young people most at risk are the homeless, intravenous drug users, prostitutes male and female and those persons with haemophilia who had blood transfusions prior to 1985.

PREGNANCY

According to Stanley and Newnham (1989) the percentage of births to young girls aged less than 15 years increased steadily between 1950 and 1981, whilst the births to older adolescents declined. Since 1980 the births to mothers under 19 years of age have continued to decline but at a much slower rate (Siedlecky, 1987; Stanley and Newnham, 1989). Although the adolescent birthrate is stable or decreasing the proportion of births to younger mothers (less than 15 years of age) has altered in the last 10 years (Robertson, 1986; Kang, 1991). The adolescent birth rate does not necessarily reflect the adolescent pregnancy rate, however as the number of abortions, (spontaneous and induced) need to be considered and added to the birth rates to give a total picture of adolescent pregnancy and these figures are not readily available.
Although not all adolescent pregnancies are troublesome, there is evidence that pregnancy in the adolescent is frequently accompanied by damaging physical and psychosocial sequelae (Goldhagen, 1982; Levine and Valle, 1982; Bennett, 1985; Robertson, 1986; Siedlecky, 1984, 1987; Davis, 1989). Tables 3.4 and 3.5 show the birth rates in NSW and the Hunter area for 1988 an 1989. The figures indicate a higher than State average rate of births to teenage mothers for the Hunter in 1989.

Table 3.4  

<table>
<thead>
<tr>
<th>AGE OF MOTHER (yrs)</th>
<th>NO. OF BIRTHS</th>
<th>% OF TOTAL BIRTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 15</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>15-19</td>
<td>4675</td>
<td>4795</td>
</tr>
</tbody>
</table>

Table 3.5  

<table>
<thead>
<tr>
<th>AGE OF MOTHER</th>
<th>NO. of BIRTHS</th>
<th>NO. of BIRTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 19</td>
<td>423</td>
<td>478</td>
</tr>
</tbody>
</table>

Physical complications of pregnancy can include nutritional deficits, anaemia, pregnancy induced hypertension, urinary tract infections, uterine or placental dysfunction, cephalopelvic disproportion and congenital abnormalities, that alone or in combination can lead to premature delivery and/or low birth weight babies and the concomitant problems associated with these babies. Physical risk factors can be significantly reduced by early and comprehensive antenatal care. There is however a tendency for teenage mothers to delay seeking early antenatal care (Goldhagan, 1982; Siedlecky, 1987; Blum, 1987, 1988; Davis, 1989 and McArnarny and Greydanus, 1989). Adequate postnatal support is an essential part of care as social and economic complications are major factors of concern. These arise from the young pregnant teenager leaving school early with an unfinished education, ill prepared for future employment and usually requiring a heavy reliance on social and welfare support that can lead to entrapment in a poverty cycle. Opportunities for satisfying and pleasurable social and recreational activities are also diminished.

Psychosocial problems such as anxiety, guilt and depression may develop as a consequence of forced marriages, single parenthood, adoption or abortion. The maternal-infant relationship may be compromised by the possibility of the baby requiring intensive care for some time as well as the demands and tasks of motherhood occurring before the mother has completed her own physical and emotional growth (Davis, 1989; McAnarney and Greydanus, 1989; World Health Organisation, 1989; Carver, Kittleson and Lacey, 1990). Poole (1987) explored the possible relationships between adolescent pregnancy and the "unfinished
developmental tasks of childhood" and concluded that if such a relationship does exist, the "unfinished tasks" need to be identified. She points out that with the appropriate knowledge, child health professionals can meet adolescents' needs more effectively, by planning interventions to address the tasks that were not successfully completed (Poole, 1987:273).

Teenage fathers, an often neglected group are frequently viewed with anger and resentment by the girl's family. They may be liable for a criminal charge and sometimes forced into a marriage that is associated with social and economic disadvantages and a high failure rate subsequently (McAnarney and Greydanus, 1989). Barret and Robinson (1986), identified that most adolescent males have strong emotional ties with their pregnant girlfriends, dispelling the notion that the fathers usually disappeared. The actual percentage of fathers who maintained an ongoing relationship with their girlfriends varied in each study but was above 60 percent. Their research supports previous work by Lorenzi, Klerman and Jekel, 1977; Hendricks and Montgomery, 1983 and Vaz, Smolem and Miller, 1983 as reported in Taucher, 1991. Nonetheless when independence is becoming a significant developmental task and future goals are being considered, "early parenthood can force the adolescent to remain in a dependent role due to lack of emotional, social and financial resources," (Taucher, 1991:22). Effective and appropriate contraception could part-way address this problem.
CONTRACEPTION

Although contraception for teenagers (minors) raises questions of controversial religious, legal, ethical, moral and philosophical issues, it is a major health concern for adolescents (Kirby, 1984; Siedlecky, 1985; Bravender-Coyle, 1986 and Robertson, 1988). Access to helpful and appropriate contraceptive advice and the developmental stage of adolescents are partial determinants of the contraceptive behaviour of teenage girls (Yoos, 1987:249). A study carried out by Abbott (1989), indicated that young women were reasonably well informed about options for avoiding an unwanted pregnancy, but nonetheless felt they were not in control of this part of their lives. Complicating adolescent sexual decision making is the over riding issue of risk taking behaviours often associated with alcohol usage. "A key component to responsible sexuality is the ability to make reasonable decisions rather than throwing caution to the wind." Burke, 1987:169.

SEXUAL ABUSE

Sexual abuse is frequently identified as a reason why young people leave home, become depressed, take up prostitution and attempt suicide (White, 1989). The World Health Organisation document suggests that sexual abuse is an important problem in most societies. "Intercourse with a minor whether forced as in rape, or enticed, as sometimes with incest or paedophilia, is universally condemned." 1989:21. Whaley and Wong (1990) say that sexual abuse is one the most devastating types of child maltreatment that has shown evidence of increase at an
enormous rate, worldwide, during the past decade. Robertson (1986) notes that physical injury, infections, pregnancy and a variety of psychosocial symptoms are possible sequelae for the sexually abused adolescent.

3.5.3 Psychosocial Problems

MENTAL HEALTH

Mental health is "a relative state of mind in which a person who is healthy is able to cope with and adjust to the recurrent stressors of everyday living in an acceptable way" (Mosby's Medical and Nursing Dictionary, 1986). Mental and physical health not only depend on issues of appropriate socialisation and on factors of positive environmental conditions but also on the individual's perception of what is real to them (Oerter in Hurrelman and Losel, 1990:90).

Factors that impinge upon and effect mental health can be related to issues from the physiological, social, spiritual "areas" as well as the emotional and behavioural areas.

White (1987) points out that as adolescents try to work their way through major developmental tasks such as, becoming comfortable with their bodies, achieving masculine or feminine roles, acquiring new social skills, striving for economic and social independence, developing a value system, seeking economic and social stability (see section 3.2) "some degree of conflict with self, others and society is
inevitable" (1989:3). He acknowledges that some degree of conflict "can be perceived as an essential condition of growth that often serves as a stimulus to start the movement toward higher levels of social maturity and personal integration". White also notes that if not properly or carefully handled, conflict can generate unproductive stress, frustration and tension. White's view is echoed by Birleson, 1988; Ryan, 1988; Sawicki, 1988; Cook, 1989; Hogarth, 1991; Kelly, 1991; Miller and Lane, 1991; Waters, 1991.

Studies by Sternlieb and Munan, 1972; Benedict, Lundeen and Morr, 1981; Weston et al 1982; Smith et al 1987; Praeger and Liebenberg, 1991; Froman and Owen, 1991, have revealed that adolescents are less concerned about physical health issues than they are about psychosocial issues. In a study undertaken in Nottingham, England and reported by Gillies (1988), adolescents expressed anxieties about unemployment, nuclear war, death, poverty and homelessness, with girls scoring significantly higher for most issues. Goldenring, 1988; Kalucy, 1988; Nunn, 1988; Raphael and Lynch, 1988; Garbarino, 1990; Lennings, 1991 have also identified the fear or threat of nuclear war as having a major psychological effect on adolescents.

Stress may result from an overload of the previously identified developmental tasks confronting adolescents daily. Other common stressors are peer group pressures, family situations, school problems and a lack of social and economical support structures, or the experience of chronic illness or disability (Gerring and Murphy, 1988, Hurrelman and Losel, 1990). Factors that exert an influence on the
adolescent's self image can impact on a host of psychological variables including self confidence and anxiety (Walker and Greene, 1986; Frydenberg and Lewis, 1991)

Strategies that are used by adolescents to cope with a variety of stresses can be adaptive and allow for forward directional growth. Alternatively maladaptive coping behaviours make things worse, do not resolve the original conflict and prevent further growth (White, 1989:42). This leads to a troubled and disturbed adolescent. Issues of the troubled adolescent have been addressed by Nunn, 1988; White, 1989; Hogarth, 1991; and Whaley and Wong, 1991, and some basic concerns have been identified. These concerns, such as increased suicide and para suicide or self harm episodes rates among young people, the increase in accidental deaths, particularly for young males, the increased dependence on drugs and alcohol and the compounding and associated feelings of depression, loss or helplessness are beginning to receive more attention.

It has been shown in various studies that coping with depressive mood disturbances by the use of alcohol increases the risk of suicide and suicide attempts considerably (Mulder, Methorst and Diekstra, 1989; Perry, 1989; Rehfeldt, 1989). The recognition that troubled adolescents "do not grow out of it" but develop into troubled adults (Hogarth, 1991; Waters, 1991; White, 1991), has fostered the need to pay more attention to the area of their mental health.
Mental Health disorders that have an onset in childhood but can continue into adolescence include disruptive behaviours, poor self esteem and learning problems such as attention deficit disorders with or without hyperactivity.

There are also a number of mental health disorders that first present in adolescence. These include eating disorders such as bulimia and pica, schizophrenia, manic depression, some personality disorders such as identity disorder, anxiety and depression and substance abuse disorders (Grigor, 1980; Bennett, 1985; Jensen, 1985; Gabriel and Hofmann, 1989; Hodgman, 1989; White, 1989; , 1990; Hogarth, 1991; Waters, 1991).

Adults who have their daily functioning impaired by mental health problems constitute 20 percent. For the 5 year to 10 year age group it is ten percent, for the 13 year to 17 year age group the percentage rises to fifteen percent and by 19 years the adult figure of twenty percent is reached (Waters, 1991)

Studies undertaken into adolescent depression identify the factors that are interrelated in the genesis of depression, as low self esteem, poor body image, alienation, despair and drug usage (Birleson, 1988; Raphael, 1989; Gostelow, 1990; Nicol, 1990; Block, Block and Gjude; 1991).

Though there is a significant incidence of anxiety and depression among adolescent girls it is adolescent boys who are most likely to commit suicide. In the USA, males commit suicide four times more often than females and young females attempt
suicide four times more frequently than males (Valente and Saunders, 1987; Blum, 1988). Similar figures for Australia have been reported by Keidel, 1983; Bennett, 1985; Kosky, 1987; Hart, 1989; Raphael, 1989; White, 1989, and Silburn and Zubrick, 1991.

The usage and abusage of mind altering, psycho-tropic drugs have so pervasively entered our society that regardless of ethnic, racial or socio-economic background the young people must decide whether or not they will use mind-altering chemicals (Shearin and Jones in Greydanus and Hofmann, 1989). Alcohol and drug abuse among adolescents has increased significantly during the past twenty years and is implicated in an increase in associated mortality and morbidity (Robinson and Greene, 1988; Botvin, Schinke and Orlandi, 1989; Rehfeldt, 1989; Perry, 1989; Hogarth, 1991).

Disturbances in mental health may be expressed in terms of physiological functioning. Examples are sleep disturbances, headaches, abdominal symptoms and muscular aches (Marshall, 1989; McLeod, 1991). Depressive disturbances are related to stresses from an array of societal and individual factors. These could be relationships that are in crisis, lack of control, hostility, loss and increased and inappropriate responsibility and an unsupportive family. Stressors frequently identified by young people are feeling sick, having nothing to do, not enough money to spend, pressured for good grades and feeling left out of the group (Ryan, 1988).
A variety of socio-demographic factors may influence the coping styles and strategies of young people to deal with these stresses including age (experience), intellect, family resources and support from parents and others, including friends and teachers (Valente and Saunders, 1987; Diekstra, 1989; Reder, Lucy and Fredman, 1991).

Effective relationships with parents and experiences of perceived closeness and warmth and attachment, as well as experiences of support, guidance and well being have been identified as factors that can effect the adolescent’s future plans, choices and self-sufficiency (Diekstra, 1989; Hightower, 1990; Hurrelman, 1990; Miller and Lane, 1990; Papini, Roggman and Anderson, 1991). These factors also decrease feelings of depression, alienations and social anxiety (Calabrese, 1987; Fetro and Vitello, 1988; Sprunger and Pellaux, 1989; Frank, Pirsch and Wright, 1990; Roelofse and Middleton, 1985; Paulson, Hill and Holmbeck, 1991).

Concerned writers have emphasised the importance of identifying the predisposing characteristics of mental health disturbances early (Jensen, 1985; Friedman, 1988; Raphael, 1989; Brightman, 1990; Gostelow, 1990; Nicol, 1990; Waters, 1991). Mental health care of adolescents should have a prevention focus with health as the goal. This includes primary prevention and early and effective intervention (White, 1990; Hogarth, 1991; Waters, 1991).
SOCIAL FACTORS

Social factors such as deteriorating family relationships, unemployment, poverty, homelessness, family mobility and access to drugs and alcohol are inextricably linked to health breakdown problems in young people. These problems can effect the physiological or mental health of young people experiencing unhealthy environments (Raphael, 1989; Ell and Northern, 1990).

The World Health Organisation Technical Discussion Paper on The Health of Youth (1989) points out that healthy development of young people depends on many factors among them the environments of the home, school, work and leisure. These environments can provide not only for a healthy development but can also build up trust and resilience. Alternatively they can be characterised by lack of opportunity for education, training, jobs, secure and loving relationships; by the insidious attractions of dangerous substances; or by the presence of dangerous conditions on the road, in the workplace, or in war! Continuing with the theme of healthy development, the World Health Organisation document emphasises the role of family, education, spiritual development, community organisations, access to health services and employment upon leaving school.

Unemployment has an effect on adolescent self concept, an increase in depression and some deterioration in social interactions. It can result in poor nutrition, heavier smoking, use of alcohol, reduced participation in sport and the possibility of an involvement in crime or vandalism (Griffith, 1987; Lepani, 1988; Eckersley, 1989)
Adolescents in particular find stability important. With the increase in world wide figures of migration young people with their families from war torn or socially deprived areas can be faced with new cultural patterns and frequently, a hostile environment. This may lead to an increase in their mental and behavioural problems. Amongst those most vulnerable are youths who may find themselves homeless and alone as they become refugees or victims of war (Bashir and Schwarz, 1988; Naidu, 1988; World Health Organisation, 1989). Bashir and Schwarz (1988) have studied some of the young people who have come to Australia in the past few years and they identified emotional and behavioural problems amongst the young people.

Homelessness has major implications for the physical, psychological and social health of the individual of any age group. However, MacKenzie says that "adolescents without homes must grow up and develop in a 'psychological wasteland' without nurturance, support and security" (1988:27). He found an increased incidence of drug use, prostitution, sexually transmitted diseases, lack of food and pervasive depression, as well as general health issues including persistent colds and coughs, infected wounds, skin disorders, and parasitic infestations. These findings have been documented by others including (Manov and Lowther, 1983; MacKenzie, 1988; White, 1989; Howard, 1991; McDonald, 1991; Miner, 1991; Shirley, 1991). Eckersley (1989) points out that youth homelessness is creating an expanding reservoir of alienated, chronically depressed, prematurely aged, welfare dependent young people who feel worthless and powerless to change their lives, (1989:5).
Cook (1989) noted that half the children seen at a major adolescent Psychiatric Clinic were not living with their original parents — a cause of great sadness, distress and insecurity for the young people, regardless of their reason for leaving home. He found that many patients have only one parent, no extended family, are struggling at school, have no long term goals, no sense of purpose and they fear that in any case they will be vaporised in a nuclear holocaust (Cook, 1989:25)

Adolescents often have a weak orientation to the future according to Hamburg (1989). He suggests that their sense of the future may be bleak especially if they are associated with issues of joblessness and poverty. Their view of an uncertain future is often implicated in teenage pregnancies.

3.6 Usage of Health Care Services

Adolescents may use a variety of services to meet their health needs. Although it has been said that adolescents may not use existing services effectively for a variety of reasons (Bennett 1985). Established services include family doctor, hospital outpatients departments and clinics, community health centres and a range of specific government or voluntary run and funded centres. Many of these services, however, are not particularly attuned to the particular needs of the adolescent, notwithstanding their good intent (Court, 1984; Wilcox, 1991). The WHO points out that health care systems are rarely designed to deal specifically with young people who are no longer at ease in child care units but are not quite ready for adult treatment units either.
Adolescents concerned with socially sensitive matters are less likely to consult local services because of they fear breach of confidentially and they are unable to pay for services rendered (Burkinshaw, 1986). Homeless and unemployed adolescents have a mistrust of traditional health and social care agencies (Burkinshaw, 1986).

Studies in Australia and overseas have indicated that adolescents prefer health workers who are sympathetic to their needs, can ensure confidentiality and allow them control and/or participation in their own case (Adams, 1983; Bennett, 1985; Burkinshaw, 1986; Hodgson, Feldman, Corber and Quinn, 1986; Wald et al, 1986; Donnelly and Leeds, 1987; World Health Organisation, 1989; Wilcox, 1991).

Where school based health services are available the information from those units show that they are well utilised and provide a valuable service (Adams, 1983; Bennett, 1985; Burkinshaw, 1986; Robertson, 1986; Mutter, Ashworth and Cameron, 1990; Nutbeam, Farley and Smith, 1990). There is an increasing trend for specialist adolescent units, both inpatient and outpatient, where a team of people with special experience and expertise can work together and with the young people to achieve an appropriate level of psycho-social, physical and spiritual health. These units for young people began to be established in the early 1970's in Australia. However most of the units are associated with children's hospitals and there are none outside the capital city areas.
3.7 Summary

In order to achieve effective health care services, appropriate health promotion and meaningful health education for adolescents, it is essential to establish an information base from which adolescent health needs can be identified and prioritised and appropriate interventions put in place to ensure these needs are met.

This review of the adolescent health literature addresses the areas of adolescence, health, health behaviours, specific health problem areas from the physical and psycho-social domains and the adolescents usage of existing services.

From the information gained in this review, a questionnaire was developed to gather data from adolescents themselves about their notions of health for themselves and their peers.
3.8 RESEARCH QUESTIONS

The Research questions posed for this study consist of the following:

1. What are the adolescents’ perceptions of health?

2. How do adolescents compare their own health to the health of their peers?

3. Where do adolescents go for help/advice about health related problems?

4. What type of health care facility would adolescents in the Hunter Region prefer to use?

5. What health issues cause the most concern to adolescents?

6. Is there a difference between the responses of male and female subjects?
CHAPTER 4

RESEARCH METHOD
This chapter describes the research design, variables, development of the measurement tool, sampling methods, data collection and statistical methods of analysis designed to investigate some health issues relating to adolescents in the Hunter area.

4.1 Research Design

Previous research into the health of adolescents has utilised a variety of methods to gather information depending on the background of the investigator and the focus of the inquiry. Information of a general nature was to be collected from a specific population using a survey. The survey research design allows the gathering of information about a large number of people by collecting data from a sample drawn from that population. Survey research generally allows the researcher to describe characteristics, opinions, attitudes, or behaviours as they can be currently found in that population. The survey also allows information to be gathered with relatively minimal input of money and time. The survey instrument can be constructed so that data analysis can be achieved using a computer programme. In order to obtain the required information a non experimental, descriptive design was chosen to allow the exploration and description of information about the health of adolescents in the Hunter Region and to establish a basis for future studies (Holm and Llewellyn, 1986; Wilson, 1993). Both qualitative and quantitative methods were used in order to confirm current data as well as identify new data and examine selected relationships within the obtained information.
According to Thomas (1990) qualitative research focuses on human perceptions, beliefs, attitudes and experiences, those that are difficult to quantify. Leininger (1985) argued that the goal of qualitative research is to document and interpret as fully as possible the totality of whatever is being studied in particular contexts from the people's viewpoint or frame of reference (1985:5).

The qualitative approach is particularly relevant when the community (the adolescents) is asked to identify health beliefs, lifestyles and practices and explore the meaning of health, illness and disease because "such knowledge can be invaluable both in nursing care and programme planning with community members as partners," (Morse 1989:96). The kinds of questions asked involve the discovery of meaning and understanding through the answers of the respondents.

The quantitative approach allows for measurement and verification of known variables and involves the use of rating scales, ranking techniques and identification of dependent and independent variables. The independent variables are gender, age, place of residence and school attended. Dependent variables are the students' opinions and their perceptions of health and health related issues as well as the timing, presentation and content of health related curricula within the schools surveyed. Reliability estimates and validity constructs can also be tested.
4.2 The Development of the Tool

A search for a developed standardised tool did not reveal an instrument that totally addressed the purpose of the study. Therefore a survey questionnaire was developed that was self administered to collect data that directly addressed the objectives of the study. The questionnaire included items that concentrated on those issues identified in the literature as having significance for the health of adolescents. These issues were addressed in the literature review (chapter 3) and are summarised in table 4.3. They were described by the providers of health care, those with a special interest in the health of adolescents and in a few studies, by the adolescents themselves. The items contained in the questionnaire were developed to collect data most of which had not previously been collected from adolescents in the Hunter Region.

Lindeman (1976) as reported in Green and Lewis, used a stage process approach to the development of measuring instruments and this work was extended by Green and Lewis (1986) who contributed the following framework. This model was used to guide the development of the instrument for use in the current survey. Figure 4.1 illustrates this framework.
Stage 1
Selecting conceptual framework

Stage 2
Determining use

Stage 3
Specifying target population

Stage 4
Paying attention of items or indicators (content validity)

Stage 5
Quantifying selected items

Stage 6
Testing reliability

Stage 7
Testing validity

Figure 4.1 Stages of instrument development. Adapted from Lindeman (1976a, 1976b) in Green and Lewis, 1986.
STAGE 1: SELECTING THE CONCEPTUAL FRAMEWORK

The literature review provided the theories, issues and assumptions related to adolescent health that dictated the conceptual framework as discussed in chapter 2. Consideration was given to previously validated and used tools such as the one assessed by Alexiou and Wiener, (1967, 1968) and subsequently referred to by Benedict et al, (1981) as well as some items from the studies cited in chapter 3 when developing the questionnaire.

STAGE 2: DETERMINING THE INSTRUMENTS USE.

The instrument was designed to obtain some demographic and social information about the adolescents, their perceptions of health, issues about which they were concerned, health problems they may have had or were currently experiencing, as well as the type of health facility they used and the type of health facility they would prefer to use. The instrument was directly administered by the researcher who was not known to the sample population. Instructions in the data collection and recording procedures were kept simple and coding was uncomplicated, using a simple numerical structure. Confidentiality was maintained by the absence of any personally identifying sign or name. The school was identified by postcode and the class by year only.
STAGE 3: SPECIFYING THE POPULATION.

SELECTION OF SUBJECTS

The adolescent population in the Hunter Region of approximately seventy nine thousand constitutes 16.3 percent of the total population. This is comparable to the Australia wide figure of 16.7 percent of the total population (Australia Bureau of Statistics 1986). The figures for the Hunter Region are for young people ten years to nineteen years of age. Table 4.1 shows the total number of adolescents attending both Government and Non-Government or Independent Schools in the region.

Table 4.1 Adolescents attending school in the Hunter Region Statistical Division.

(ABS 1986)

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>M</th>
<th>%</th>
<th>F</th>
<th>%</th>
<th>TOTAL</th>
<th>%</th>
</tr>
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<td>3691</td>
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<td>16912</td>
<td>50.3</td>
<td>33646</td>
<td>100</td>
</tr>
</tbody>
</table>

KEY: GOV  = Government run schools.
IND  = Independently run schools.
M  = Male students
F  = Female students
%  = Percentage of that group

Seventy five percent of the student population attend the State or Government Schools with the remaining twenty five percent in Independent or Private Schools (Australian Bureau of Statistics, 1986). The subjects were students who were
attending High Schools at various geographical locations within the Hunter Region. The students were in Years 8, 9 and 10, being their second, third and fourth year respectively in the New South Wales secondary school system. The age range of the students was from thirteen years to seventeen years. The size of the classes varied from sixteen students to twenty six students. The majority of the students were in ungraded or mixed ability classes to ensure an even distribution of students from a variety of socio economic and cultural backgrounds and with a range of intellectual abilities.

SELECTION OF SCHOOLS.

There are twenty six government high schools and eleven independent (seven Catholic, two Grammar and two Christian) schools listed in the local phone book. There are two all girls' schools and two all boys' schools in the area. The rest are co-educational. The names of the schools were written on pieces of paper, the papers placed into a box and then the names of the schools to be asked to assist with the survey were extracted by a uninvolved person. A list of ten high schools was then included in an "Application to Conduct Research in NSW Departmental Schools" and forwarded to the Hunter Region Research Applications Committee of the NSW Department of School Education. Permission was subsequently given to approach the Principals of nine of the nominated coeducational high schools. Letters were then sent to the school Principals seeking to discuss the proposed study with them. (See appendix 2 and appendix 3). One Principal declined to participate because of a research project currently underway at that school and one school was
not approached because it would be difficult to complete the surveys before approaching examination time made it inconvenient. Seven Government schools providing 546 students took part in the survey.

A similar procedure resulted in permission being granted to approach the Principals of five Catholic high schools. Three schools participated in the study. One school Principal declined to participate because a project of a sensitive nature was being undertaken at that time and the fourth school was not approached, because of the impending examination time. Two other independent schools were identified in the random draw but the Principals were unable to assist. The total number of students from the independent (Catholic) sector was 154 giving an overall total of 700 participants.

Twenty two questionnaires were withdrawn because of inadequate or inappropriate responses (See chapter 4 Section 9). Six hundred and seventy eight questionnaires were submitted for statistical analysis.

Background information about the schools was obtained from three major sources. Personnel from the Department of School Education Regional offices at Newcastle and Maitland and from the Catholic Education Office for the Diocese of Maitland (that administers their schools throughout the Hunter Region), assisted with information about class sizes and composition and the names of contact persons. Although some schools were identified as "over surveyed" by an senior executive of the Department of School Education, they were still included in the random draw.
There was no predetermined mix of gender although a male to female ratio similar to the total population figures was anticipated, given that the ABS indicated a close match between the Hunter Region and the Australian figures for age and gender distribution.

The schools were only identified by postcode. The classes asked to take part in the survey were selected by the teacher(s) according to time-table convenience. Access to mixed ability classes and the availability of the researcher were the only criteria for inclusion in the survey.
Table 4.2 Profile of respondents and schools attended

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>AREA</th>
<th>TYPE A</th>
<th>TYPE B</th>
<th>CLASS</th>
<th>YR 8</th>
<th>YR 9</th>
<th>YR10</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>URB</td>
<td>G</td>
<td>COED</td>
<td>MIX+I g</td>
<td>28</td>
<td>28</td>
<td>62</td>
<td>118</td>
</tr>
<tr>
<td>2</td>
<td>URB</td>
<td>G</td>
<td>COED</td>
<td>MIX</td>
<td>26</td>
<td>42</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>RUR</td>
<td>P</td>
<td>COED</td>
<td>MIX</td>
<td>21</td>
<td>47</td>
<td>20</td>
<td>88</td>
</tr>
<tr>
<td>4</td>
<td>RUR</td>
<td>G</td>
<td>COED</td>
<td>MIX</td>
<td>22</td>
<td>36</td>
<td>16</td>
<td>74</td>
</tr>
<tr>
<td>5</td>
<td>URB</td>
<td>G</td>
<td>COED</td>
<td>MIX</td>
<td>0</td>
<td>24</td>
<td>22</td>
<td>46</td>
</tr>
<tr>
<td>6</td>
<td>URB</td>
<td>P</td>
<td>GIRL</td>
<td>MIX</td>
<td>0</td>
<td>17</td>
<td>47</td>
<td>64</td>
</tr>
<tr>
<td>7</td>
<td>URB</td>
<td>G</td>
<td>COED</td>
<td>MIX+I g</td>
<td>0</td>
<td>26</td>
<td>36</td>
<td>52</td>
</tr>
<tr>
<td>8</td>
<td>URB</td>
<td>G</td>
<td>COED</td>
<td>MIX</td>
<td>22</td>
<td>23</td>
<td>23</td>
<td>68</td>
</tr>
<tr>
<td>9</td>
<td>RUR</td>
<td>G</td>
<td>COED</td>
<td>MIX</td>
<td>0</td>
<td>43</td>
<td>24</td>
<td>67</td>
</tr>
<tr>
<td>10</td>
<td>URB</td>
<td>P</td>
<td>COED</td>
<td>MIX</td>
<td>0</td>
<td>26</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>119</td>
<td>312</td>
<td>240</td>
<td>671</td>
</tr>
</tbody>
</table>

Key: URB = Urban area, 
RUR = Rural area, 
G = Government system, 
P = Private or Independent system, 
Coed = Coeducational, 
Girl = Girls only school, 
Mix = Mixed ability class, 
g = graded class (level 1 or 2 ).

NOTE: Seven students incorrectly identified the school post-code.
Because of the mixed ability classes, the subjects were expected to have a range of intellectual abilities. This was not tested nor specifically identified. The composition of the individual classes were recorded as graded or ungraded. That is, the classes were made up of students who displayed evidence of an identifiable skill level in English, Mathematics or Science and so were graded, or else the classes were made up of students of mixed intellectual abilities. Previous major studies (Alexiou and Weiner, 1968, 1969) found that it was not necessary to consider a student’s intellectual level other than to exclude those students incapable of completing the questionnaire because of reading and writing disabilities.

Parental permission was sought through letters (see appendix 4) to approach the students for their cooperation. This was after permission was obtained from the Department of School Education, Catholic Education Office and the individual School Principals to undertake the survey. Students were informed that participation in the survey was entirely voluntary.

Consideration was given to a sample size that would allow for reliable analysis and detect any real differences between the groups. A consultant statistician was provided with information about the proposed sampling procedure, the proposed significance level, the degree of error that would be acceptable and the expected response rate. The statistician undertook a power analysis to arrive at a suggested sample size required for a reliable analysis of three hundred respondents. A larger sample than this was chosen after noting that Green and Lewis (1986) had pointed out that the properties of large numbers assume a normal distribution around the
values of their population equivalents. It is generally understood that the larger the sample size the more representative it is of the population.

STAGE 4: PAYING ATTENTION TO THE ITEMS OR INDICATORS.

The items contained in the questionnaire were designed to elicit qualitative and quantitative information and were in the form of forced responses, multiple choice and open ended questions. The latter was aimed at further information and/or clarification of answers. All items required a personal response and addressed actual and perceived, physical, psychological and social factors.

The items were designed to avoid bias, ambiguity, vagueness and difficulty. They were aimed at identifying known facts, opinions and behaviours and the language used was suitable for the proposed age group. A draft questionnaire was tested with six young people aged between 13 and 16 years who were visiting one household on a particular day. The wording of two of the questions was changed after those questions were misinterpreted during this test of the tool with a sample different but similar to that proposed for the study.

83
The final instrument (Appendix 1) contained a total of seventy five items and consisted of three parts:-

**Part A** addressed demographic, social, cultural and religious descriptive information.

**Part B** contained items about general health, health knowledge and usage of health services. The items required simple yes/no responses, responses using a Likert scale and responses to multi choice questions with provision for comments. This section commenced with an example to explain how to complete the questionnaire.

**Part C** contained a different format to part A and part B that allowed the respondents to indicate a perceived or actual concern or a personal experience of specific health problems. A similar format has been used with success by Alexiou, 1968; Benedict, Lundeen and Morr, 1981; Redman, Hennrikus, Bowman and Sanson-Fisher, 1988. The items considered to be sensitive in nature (those related to sexual activity and associated problems) were placed in the middle of the third section. This strategy was suggested in the Commonwealth Department of Health "Community Surveys - A Practical Guide" (1985) as it appears that personal questions are easier to answer and non threatening when the respondent has become comfortable with the tool. The final item on the questionnaire gave the adolescents the opportunity to identify and "grade" the five problems that caused them the most concern. This method of obtaining information about problems of most significance to the adolescents was used by Smith et al, 1987.
Table 4.3 lists the health issues that are addressed in the questionnaire and shows the number of items related to each issue.

<table>
<thead>
<tr>
<th>HEALTH ISSUES</th>
<th>ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family and Personal Information</td>
<td>11</td>
</tr>
<tr>
<td>General health</td>
<td>12</td>
</tr>
<tr>
<td>Usage of a health facility</td>
<td>2</td>
</tr>
<tr>
<td>Dental health</td>
<td>5</td>
</tr>
<tr>
<td>Body image</td>
<td>4</td>
</tr>
<tr>
<td>Interpersonal relationships</td>
<td>4</td>
</tr>
<tr>
<td>Risk behaviours</td>
<td>6</td>
</tr>
<tr>
<td>Sexual related matters</td>
<td>10</td>
</tr>
<tr>
<td>Mental health</td>
<td>7</td>
</tr>
<tr>
<td>Social issues</td>
<td>5</td>
</tr>
<tr>
<td>Specific disorders</td>
<td>8</td>
</tr>
</tbody>
</table>

Although definite divisions have been identified in the range of health issues, some of the items categorised into the areas shown in chapter 4, table 4.3, can fit easily into more than one grouping. This occurs because of the inter-relationships between the factors governing health in the individual and that have been discussed in the literature review (see chapter 3 section 3).
STAGE 5. QUANTIFYING ITEMS

A level of measurement to categorise or score people with as much discriminating power as is required without exceeding the acceptable limits of precision that the measurement circumstances will tolerate or justify, was the aim of this stage. In order to overcome the extremes of "misplaced brevity" that is characterised by simple dichotomous responses (yes or no, true or false) and "misplaced precision", the use of long detailed questionnaires with many items requiring thoughtful judgements, the balance between simple dichotomous answers and answers requiring more responses was maintained.

The items on the instrument were coded to allow accurate data entry and achieve an effective level of measurement. The final item in the instrument requested the adolescents to identify and list the five problems that cause them most concern in descending order of importance.

STAGE 6. TESTING RELIABILITY.

The survey tool was administered to a small group of eight adolescents, gathered from the local neighbourhood, a football team and a church youth group whose mean age was fourteen years. After they had completed the questionnaire they discussed it with the researcher. As a result of this discussion the wording that was changed previously on two items was confirmed as appropriate because there was no confusion evident. Additional instructions were also added to the beginning of Part
B of the questionnaire to avoid misinterpretation of the items contained in that section. The tool was given to the same adolescents for completion after four weeks and a comparison of answers did not produce any inconsistencies. A test retest correlation coefficient (r) value for the whole questionnaire was $r = 0.91$. This indicates a high degree of internal consistency and reliability.

STAGE 7. TESTING VALIDITY.

Validity describes the degree to which a test or instrument measures what it purports to measure (Woods and Catanzaro, 1988:251). Content validity was established through a method developed by Stacey (1987). This was described as a guide for establishing the quality of a research instrument and consisted of three short "instrument evaluation guides" to be given to (1) colleagues, (2) people drawn from the population to be studied and (3) potential users of the data. The questionnaire accompanied by a checklist was distributed to eight colleagues, eight adolescents and four potential users of the data who completed the assessment and returned the documentation. The responses were collated and analysed using a Cronbach’s alpha that produced a $r = 0.89$, which indicated an acceptable degree of internal consistency. The feedback obtained gave a positive recommendation for subsequent usage.

Internal validity or the quality of the study depends on how accurately the sample represents the population as well as the type of statistical analysis employed and the
accuracy of the data collection instrument (Thomas, 1990). This was addressed by random choice of schools and use of accurate data analyses.

External validity was enhanced by random choice of schools and the sample size and the close relationship between the number of adolescents resident in the Hunter area and the number of adolescents resident in the State.

4.3 Pilot Study

The survey tool was initially administered to a group of fifteen adolescents who were attending a local youth group meeting. Volunteers were given an explanation about the survey prior to their completion of the questionnaire. The volunteers completed the survey with no problems in interpretation of the items including the two previously altered items to enhance understanding. It was possible to confirm and establish the required completion time. This information was needed for the various school Principals in the planning stages. It was important that the students could complete the survey in one normal class period. It was also important that the survey tool was user friendly and it was the adolescents in this group who chose the colour for the front cover of the survey instrument!
To obtain the data, the researcher arrived at the designated school at the appointed time and was introduced to the appropriate class by the teacher who usually took the class during that period. Students were advised that confidentiality would be maintained and voluntary participation was emphasised. Students had previously been given permission notes to take home to parents and only those students without negative responses were invited to take part. There were in fact only two students with a negative response from a parent. Students were given a brief explanation of the purpose of the study and how to complete the survey form.

After the questionnaires and pencils had been distributed, time was allowed for the students to ask questions for clarification about any part of the procedure. The regular teacher had a choice of remaining in the classroom or returning when the allocated time was over. There was no set pattern to their choices. After the students had completed the questionnaires they were collected and a control sheet was attached to the front of the top paper to enable coding to be completed.

Students were thanked and a promise of feedback to the school was made. This was to be a copy of a mini report regarding students responses/survey outcomes as requested by the Department of School Education.
4.5 Data Entry

Items were coded to enable computerised data entry. Data was then entered into a VAX mainframe computing system using a data entry programme developed by staff at the Computer Centre, University of Newcastle. This work was undertaken by an experienced data entry operator.

4.6 Statistical Analysis

In this section the statistical analysis used to interpret the data will be outlined.

Computing was carried out at the University of Wollongong using the Statistical Package for the Social Sciences X (SPSS-X) and the University of Newcastle utilising the S.A.S. and Minitab (Inc.) programmes.

Frequencies for all statements were computed. The chi-squared statistic was used to investigate differences between responses from male students and female students and in selected questions between the students from the two school systems in order to answer the research questions enumerated in chapter 3 section 3.8.

Significance levels were set at 0.05. to control the risk of a type 1 error. In order to increase the power of the test and decrease the risk of a type II error the sample size was increased to more than 500 subjects.
Restrictions on the use of the chi-square statistic were overcome by calculating chi-square on raw frequencies and ensuring observations were independent. Analysis of the data obtained from the questionnaires not included in the study was undertaken using the Minitab statistical software package.

4.8 Limitations

The limitations of the researcher's time precluded a survey of adolescents who had left school, were either employed full time or unemployed and who may have been living away from home.

A possible limitation to the study could be the risk of students feeling a degree of coercion to complete the measure. Taking part in the survey in a classroom setting with or without a teacher being present may have contributed to this. Some students (year 10) were anticipating leaving the school soon, whether to go on to senior school or seek employment, and there was some concern that these students might answer the questionnaire facetiously. Twenty two questionnaires were not included in the statistical analysis because they were either incomplete or it was obvious that the respondents had not answered the questions rationally (See section on non-respondents chapter 5 section 8). A factor that could have affected the responses was the type of health education curriculum being followed by the individual schools. Each school was able to develop its own individual programme within the pre-ordained guidelines. These programmes were not sighted, although a copy of the suggested subject outline from the Education Department was viewed by the
researcher. In particular students' awareness of the condition scoliosis may have been heightened because a screening programme had recently been conducted in local schools by the Area Health Service.

The survey was not administered to adolescents other than those attending schools on the nominated days. Information needs to be obtained from adolescents aged 13 to 16 years who do not attend schools, who may be homeless or those aged 15, 16 or 17 years who may be already in full-time employment.
5.1 Introduction

This chapter documents the results obtained from the responses of the students surveyed in the study.

The results of this study are reported in relation to the main research questions posed in chapter 3 section 8. The sections are as follows:

5.2 Social and demographic information about the respondents.
5.3 What are the adolescents' perceptions of health?
5.4 How do adolescents compare their own health to the health of their peers?
5.5 Where do adolescents go for help about health problems?
5.6 What type of health facility would adolescents in the Hunter area prefer to use?
5.7 What health issues cause the most concern to an adolescent?

Gender differences in relation to the above questions are considered.

Section 5.2 addresses the demographic and social information about the respondents obtained from Part A of the questionnaire. It also addresses information about possible gender differences to selected responses.
5.2 Social and demographic information about respondents

There was a total of 678 completed questionnaires from students at selected schools in the Hunter region submitted for statistical analysis. This represented a response rate of 93 percent. Table 5.1 shows the type of school attended by the respondents, their ages and gender.

Table 5.1 Respondents by school, age and gender

<table>
<thead>
<tr>
<th>AGE (YRS)</th>
<th>GM</th>
<th>GF</th>
<th>IM</th>
<th>IF</th>
<th>TOTAL NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-13</td>
<td>11</td>
<td>10</td>
<td>4</td>
<td>18</td>
<td>43</td>
</tr>
<tr>
<td>14-16</td>
<td>253</td>
<td>232</td>
<td>49</td>
<td>77</td>
<td>611</td>
</tr>
<tr>
<td>17-19</td>
<td>11</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>257</td>
<td>251</td>
<td>53</td>
<td>96</td>
<td>675</td>
</tr>
</tbody>
</table>

KEY: GM - Government School Males
GF - Government School Females
IM - Independent Schools Males
IF - Independent Schools Females

NOTE: There are three missing responses.

Students aged from fourteen to sixteen years constituted 90.5 percent of the total number of respondents; 6.4 percent were aged from eleven to thirteen years and 3.1 percent were seventeen to nineteen years old. Of the total number of students 95.9 percent were from mixed ability or ungraded classes and 4.1 percent from a graded class. Female respondents constituted 51.3 percent and males 48.7 percent of the total. This compares with figures for the Hunter region with females making up 49 percent and males making up 51 percent of the relevant adolescent age group.
Australia wide there is a gender ratio of 104.5 (males per 100 females) in the age range 10 to 19 years. Seventy eight percent of respondents attended Government schools and 22 percent attended Independent or Catholic schools. This is consistent with the Hunter Region’s school population with 77.9 percent attending Government schools, and 22.1 percent attending Independent schools (Hunter Statistical Division, ABS 1986).

Figure 5.1 illustrates the total number of students in each age group and the age distribution at Government and Independent schools. The numbers are expressed as a percentage of the responses from the total sample.

Figure 5.1 Respondents’ ages and school attended.
Students who were born in Australia constituted 95.7 percent of the total number of respondents with the majority of their parents Australian born. Students were asked the question "With whom do you live?" to give an indication of family structure.

Table 5.2 Responses to the question "With whom do you live?"

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother &amp; Father</td>
<td>260 (252.2)</td>
<td>259 (266.8)</td>
<td>519 (76.9%)</td>
</tr>
<tr>
<td>Mother only</td>
<td>26 (28.2)</td>
<td>32 (29.8)</td>
<td>58 (8.6%)</td>
</tr>
<tr>
<td>Father only</td>
<td>8 (5.8)</td>
<td>4 (6.2)</td>
<td>12 (1.8%)</td>
</tr>
<tr>
<td>Mother &amp; Stepfather</td>
<td>24 (30.1)</td>
<td>38 (31.9)</td>
<td>62 (9.2%)</td>
</tr>
<tr>
<td>Father &amp; Stepmother</td>
<td>6 (5.3)</td>
<td>5 (5.7)</td>
<td>11 (1.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (6.3)</td>
<td>9 (6.7)</td>
<td>13 (1.9%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>328 (48.6%)</td>
<td>347 (51.4%)</td>
<td>675 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 6.6, d.f 5; p > .05

Note: Expected frequencies are shown in brackets below observed frequencies.

In table 5.2 the results for the question are shown. The majority of the students lived with both parents - almost 77 percent. The next largest group (9.2 percent) lived with their mother and stepfather, followed by 8.6 percent living with their mother only. The number of students who indicated "other" was thirteen or 1.9 percent. These students stated that they lived with either their grandparents,
brothers or sisters. No significant difference was elicited between the groups by the chi-square statistic at a significance level of 0.05.

Figure 5.2 illustrates the responses of the students to the question "What is the main religion in your household?". The choices were Protestant, Catholic, Non-Christian, Nil and Other.

Figure 5.2   Religion in Students' Households
The percentage of students who were from non-Christian backgrounds was 2.5 percent with 3.7 percent recording "other" and no religion in their families with the "don't know" category at 22 percent. Respondents from a Christian background represented 71.8 percent of the total.

The Australian Standard Classification of Occupations (A.S.C.O.) 1982 as identified by the Department of Employment and Industrial Relations and the Australian Bureau of Statistics (1986) was used to define the occupational characteristics of the parents of the respondents. These classifications are divided into the following major groups, [The A.S.C.O. minor groups were not utilised on this occasion.]

1. Managers and Administrators
2. Professionals
3. Para-professionals
4. Tradespersons
5. Clerks
6. Salespersons and Personal Service Workers
7. Plant and Machine Operators, and Drivers
8. Labourers and Related Workers.
Figure 5.3 shows the responses to the question about father's occupation. Seven percent of the students said their father was unemployed and there were forty-two students or 6.2 percent who either did not know where their father worked or did not answer the question.

Figure 5.3 Profile of father's occupation expressed as a percentage

KEY:
1. Management/Administration
2. Professional
3. Para-Professional
4. Tradesperson
5. Clerks
6. Sales/Personal Service
7. Plant/Machinery Operator
8. Labourer
9. Unemployed
10. Not stated
Approximately 21 percent of the fathers were tradesmen with another 21 percent working as labourers. (see Figure 5.4) Professional persons and those in managerial or administrative positions constituted a further 17 percent. Eight percent worked with plant or machinery with the remaining 20 percent divided fairly evenly between those working in sales or personal service, para professional or clerk positions.

Sixty-two percent of respondents said that their mother worked in paid employment outside the home. There was a higher percentage of mothers working in clerical and sales positions and lower in the trades and professional categories when compared with fathers' occupations.

5.3 Adolescent's perceptions of health and gender differences.

Section 5.3 contains several tables which provide information that examines the perceptions that adolescents identified about health issues. The results of adolescents preferred definition of health, if and why their activity level is decreased by health problems and differences, if any, between the male and female responses are presented.
Table 5.3  Students’ chosen definition of health by gender.

<table>
<thead>
<tr>
<th>DEFINITION OF HEALTH</th>
<th>M</th>
<th>F</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Absence of disease/disability</td>
<td>26 (21.3)</td>
<td>18 (22.7)</td>
<td>44 (6.5%)</td>
</tr>
<tr>
<td>2. Being physically fit.</td>
<td>65 (55.7)</td>
<td>50 (59.3)</td>
<td>115 (17.2%)</td>
</tr>
<tr>
<td>3. State of complete physical, mental &amp; social wellbeing</td>
<td>224 (238.8)</td>
<td>269 (254.2)</td>
<td>493 (73.5%)</td>
</tr>
<tr>
<td>4. Other definition</td>
<td>10 (9.2)</td>
<td>9 (9.8)</td>
<td>19 (2.8%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>325 (48.4%)</td>
<td>346 (51.6%)</td>
<td>671 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 6.92, d.f. 3; p > .05

Note: The expected frequency is shown in brackets below the observed frequency.

Seventy-three percent of the total number of respondents identified the WHO definition of health, with seventeen percent preferring "being physically fit" as their choice. The "other definition" category chosen by three percent of the respondents elicited comments that did in fact closely resemble one of the given definitions. There was no statistically significant difference between the male and female students (p = > .05) see table 5.3.

The responses to the question, "Is your activity decreased because of any illness or disability?" are shown in table 5.4.
Table 5.4  Students responses re decreased activity

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>47</td>
<td>83</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>(62.8)</td>
<td>(67.2)</td>
<td>(19.4%)</td>
</tr>
<tr>
<td>NO</td>
<td>276</td>
<td>263</td>
<td>539</td>
</tr>
<tr>
<td></td>
<td>(260.2)</td>
<td>(278.8)</td>
<td>(80.6)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>383</td>
<td>346</td>
<td>669</td>
</tr>
<tr>
<td></td>
<td>(48.3%)</td>
<td>(51.7%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 9.5, d.f. 1, p = .002

Note: The expected frequency is shown in brackets below observed frequency.

The obtained chi-square value is significant at the 0.05 level (p = < .002) indicating that there was a difference between the responses of the male and female students with the cell for the female responses to "yes" contributing the major difference.

The 19.4 percent of students who identified a decrease in activity because of illness or disability were asked to identify the problem. Table 5.5 shows the responses to the question, "If you answered "yes" to decreased activity can you identify the problem?" The problems were categorised into the areas shown in chapter 4 table 4.3.
Table 5.5  Problem categories causing decreased activity

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Image</td>
<td>11</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexuality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Disease</td>
<td>23</td>
<td>52</td>
<td>75</td>
</tr>
<tr>
<td>Dental</td>
<td>6</td>
<td>11</td>
<td>17</td>
</tr>
</tbody>
</table>

| COLUMN TOTAL      | 40   | 76     | 116       |

Chi-square 7.73, d.f. 3; p < .05

Note: The expected frequency is shown in brackets below the observed frequency.

There are 2 cells with expected frequencies less than 5.

The chi-square statistic indicated a statistically significant difference between male and female responses at the 0.05 level of probability. The categories which contributed to this significant difference are "body image", "lifestyle" and "sexuality" and "disease". More males than would be expected replied "yes" to the "Body Image" category, and more females than expected replied "yes" to the "Disease" category.

Table 5.6 displays the responses to the statement "My knowledge about nutrition and what constitutes a healthy diet is adequate".
Table 5.6  Responses to nutrition statement

<table>
<thead>
<tr>
<th>Response</th>
<th>Male</th>
<th>Female</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>8 (5.4)</td>
<td>3 (5.6)</td>
<td>11 (1.7%)</td>
</tr>
<tr>
<td>Disagree</td>
<td>37 (36.2)</td>
<td>37 (37.8)</td>
<td>74 (11.1%)</td>
</tr>
<tr>
<td>Agree</td>
<td>238 (237.5)</td>
<td>248 (248.5)</td>
<td>486 (73.1%)</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>42 (45.9)</td>
<td>52 (48.1)</td>
<td>94 (14.1%)</td>
</tr>
<tr>
<td>Column Total</td>
<td>325 (48.8%)</td>
<td>340 (51.2%)</td>
<td>665 (100%)</td>
</tr>
</tbody>
</table>

Chi square 3.21, d.f. 3; p > .05

Note: The expected frequency is shown in brackets below the observed frequency.

The chi-square statistic (chi-square 3.21, d.f. 3) was not significant at the 0.5 level suggesting no difference between the responses of the male and female students.

Eighty seven percent of the total sample believed their knowledge about nutrition was adequate.

5.4  Adolescent's comparison of health and gender differences.

Section 5.4 contains several tables that display data to examine how adolescents compare their health with their peer group. The results of this comparison, show often adolescents are concerned or worried about their health and differences between male and female respondents are presented.
Table 5.7  Comparison of health status

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>Male</th>
<th>Female</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR</td>
<td>7 (7.8)</td>
<td>9 (8.2)</td>
<td>16 (3%)</td>
</tr>
<tr>
<td>FAIR</td>
<td>49 (58.1)</td>
<td>71 (61.9)</td>
<td>120 (18%)</td>
</tr>
<tr>
<td>GOOD</td>
<td>178 (180.7)</td>
<td>195 (192.3)</td>
<td>373 (55%)</td>
</tr>
<tr>
<td>EXCELLENT</td>
<td>92 (79.4)</td>
<td>72 (84.6)</td>
<td>164 (24%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>326 (48.4%)</td>
<td>347 (51.6%)</td>
<td>673 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 6.85, d.f. 3; p > 0.05

Note: The expected frequency is shown in brackets below the observed frequency.

In table 5.7 the responses to the question, "Compared to the health of other young people your age, how would you rate your own health?" are shown. The application of the chi-square test indicated that there was no statistically significant difference between the responses of the male and female students (Chi-square 6.87, d.f.3; p > 0.05). Seventy-nine percent of the respondents indicated that their health was "good" or "excellent" with only 21 percent indicating that they thought their health was "poor" or "fair" in comparison to the health of their peers.
Table 5.8  Frequency of concern about health status.

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>37</td>
<td>48</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>(41.2)</td>
<td>(43.8)</td>
<td>(13%)</td>
</tr>
<tr>
<td>Usually</td>
<td>96</td>
<td>121</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>(105.3)</td>
<td>(111.7)</td>
<td>(32%)</td>
</tr>
<tr>
<td>Seldom</td>
<td>137</td>
<td>158</td>
<td>385</td>
</tr>
<tr>
<td></td>
<td>(143.1)</td>
<td>(151.9)</td>
<td>(43.5%)</td>
</tr>
<tr>
<td>Never</td>
<td>57</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>(37.4)</td>
<td>(39.6)</td>
<td>(11.5%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>327</td>
<td>347</td>
<td>674</td>
</tr>
<tr>
<td></td>
<td>(48.5%)</td>
<td>(51.5%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 23, d.f. 3; p < 0.001

Note: The expected frequency is shown in brackets below the observed frequency.

In Table 5.8 the results for the question, "How often are you concerned or worried about your own health status?" are displayed. Sixty-five percent or the respondents said they seldom or never worried about their health status with thirteen percent indicating they always worried about their health status. The chi-square result indicated a statistically significant difference in the responses of the male and female students (chi-square 23, d.f.3; p < 0.001). The categories which contributed to this significant difference were "never", "usually" and "always". There was a greater number of male respondents than expected to "never" and more females than expected replied to "usually" and "always".
Table 5.9 illustrates the response to the question, "How many times did you seek help or advice about a health problem in the last year?". Forty-one percent of the respondents indicated once or twice and twenty-six percent said none at all, whilst eight percent had sought help more than six times.

Table 5.9 Frequency of requirements for help or advice.

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>Male</th>
<th>Female</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 6 times</td>
<td>19 (27.1)</td>
<td>37 (28.9)</td>
<td>56 (8%)</td>
</tr>
<tr>
<td>5 - 6 times</td>
<td>15 (19.8)</td>
<td>26 (21.2)</td>
<td>41 (6%)</td>
</tr>
<tr>
<td>3 - 4 times</td>
<td>46 (56.1)</td>
<td>70 (59.9)</td>
<td>116 (17.2%)</td>
</tr>
<tr>
<td>1 - 2 times</td>
<td>133 (135.4)</td>
<td>147 (144.6)</td>
<td>280 (41%)</td>
</tr>
<tr>
<td>None</td>
<td>110 (83.7)</td>
<td>63 (89.3)</td>
<td>173 (26%)</td>
</tr>
<tr>
<td>Not stated</td>
<td>2 (2.9)</td>
<td>4 (3.1)</td>
<td>6 (0.8%)</td>
</tr>
<tr>
<td>Column total</td>
<td>325 (48.4%)</td>
<td>347 (51.6%)</td>
<td>672 (100%)</td>
</tr>
</tbody>
</table>

Chi square 27.15, d.f. 5; p < .001

Note: The expected frequency is shown in brackets below the observed frequency.

The data yielded a chi-square value which is significant beyond the 0.05 level, indicating a difference between the responses of the male and female students. The categories that contributed to this difference are "none" where more males than
statistically expected responded, and "3-4 times", "5-6 times" and "more than 6
times" where more females than statistically expected responded positively.

Students were asked if they required more information about general health issues or
a specific health problem. Tables 5.10 and 5.19 illustrate their responses to these
questions.

Table 5.10 The need for more information about general health

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>113</td>
<td>142</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td>(123.1)</td>
<td>(131.9)</td>
<td>(38.1%)</td>
</tr>
<tr>
<td>No</td>
<td>210</td>
<td>204</td>
<td>414</td>
</tr>
<tr>
<td></td>
<td>(199.9)</td>
<td>(214.1)</td>
<td>(61.9%)</td>
</tr>
<tr>
<td>Column Total</td>
<td>323</td>
<td>346</td>
<td>669</td>
</tr>
<tr>
<td></td>
<td>(48.3%)</td>
<td>(51.7%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 2.60, d.f. 1; p > 0.05

Note: The expected frequency is shown in brackets below the observed frequency.

There was no statistically significant difference between the responses of the male
and female students, (chi-square 2.60, d.f. 1; p > 0.05). Just over one third of the
students only, said they would like more information.
Table 5.11  The need for information about specific health problems

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
<td>75</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>(64.5)</td>
<td>(67.5)</td>
<td>(19.8%)</td>
</tr>
<tr>
<td>No</td>
<td>269</td>
<td>266</td>
<td>535</td>
</tr>
<tr>
<td></td>
<td>(261.5)</td>
<td>(273.5)</td>
<td>(80.2%)</td>
</tr>
<tr>
<td>Column Total</td>
<td>326</td>
<td>341</td>
<td>667</td>
</tr>
<tr>
<td></td>
<td>(48.9%)</td>
<td>(51.1%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 2.14, d.f. 1; p > 0.05

Note: The expected frequency is shown in brackets below the observed frequency.

Less than 20 percent of the respondents identified a need for more information about a specific or special health problem. There was no statistically significant difference between the responses of the male and females students (chi-square 2.14, d.f. 1; p > 0.05).

5.5 Where do adolescents go for help or advice about health related problems?

In section 5.5 the table provides information about where adolescents get help or advice about health problems, for what reasons and any differences between the male and female responses.

Table 5.12 displays the responses to the question, "Where did you go for your help/advice about your health problem?". Respondents were given the opportunity to nominate one choice or a combination of choices.
Table 5.12  Where help/advice was obtained

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor Only</td>
<td>105</td>
<td>89</td>
<td>194</td>
</tr>
<tr>
<td></td>
<td>(85.9)</td>
<td>(108.1)</td>
<td>(35.2%)</td>
</tr>
<tr>
<td>Hospital, clinic or chemist</td>
<td>7</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>(8.6)</td>
<td>(10.4)</td>
<td>(3.4%)</td>
</tr>
<tr>
<td>Friend only and one other</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>(5.0)</td>
<td>(6.0)</td>
<td>(2.0%)</td>
</tr>
<tr>
<td>Parents only</td>
<td>39</td>
<td>32</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>(32.1)</td>
<td>(38.9)</td>
<td>(12.9%)</td>
</tr>
<tr>
<td>Doctor and parents</td>
<td>34</td>
<td>48</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>(37.1)</td>
<td>(44.9)</td>
<td>(14.8%)</td>
</tr>
<tr>
<td>Doctor and 1 other choice</td>
<td>29</td>
<td>41</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>(31.6)</td>
<td>(38.4)</td>
<td>(12.8%)</td>
</tr>
<tr>
<td>&gt; 3 choices</td>
<td>31</td>
<td>73</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>(47.0)</td>
<td>(57.0)</td>
<td>(18.9%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>249</td>
<td>302</td>
<td>551</td>
</tr>
<tr>
<td></td>
<td>(45.2%)</td>
<td>(54.8%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 20.65, d.f. 6; p < .05

Note: The expected frequency is shown in brackets below the observed frequency.

The computed chi-square value was significant at the 0.05 level, indicating a difference between the responses of the male and female students. The difference between the expected frequency and the observed frequency is evident in the category "doctor only" where more males than expected responded and the category "more than three choices" where more females than expected replied. Friends or peers only plus a combination of "friend and one other choice" constituted two percent of choices, "parents only" accounted for 12.9 percent of choices whilst the
"doctor" category accounted for over forty percent of the responses. Those who nominated the "other" category, identified physiotherapists, chiropractor, podiatrist and gym instructor as well as other family members, for example 'uncle'.

5.6 Preferred Type of Health Facility

In section 5.6 tables are displayed that provide information that examines the adolescents' choice of health care facility, where they would like such a facility and whether or not there was any difference in the male and female responses to these questions.

Table 5.13 Use of a specific health clinic

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>234 (248.5)</td>
<td>276 (261.5)</td>
<td>510 (76.7%)</td>
</tr>
<tr>
<td>No</td>
<td>90 (75.5)</td>
<td>65 (79.5)</td>
<td>155 (23.3%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>324 (48.7%)</td>
<td>341 (51.3%)</td>
<td>665 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 7.06, d.f. 1; p < .01

Note: The expected frequency is shown in brackets below the observed frequency.

In Table 5.13 the responses to the question about proposed usage of a specific health care facility are shown. Respondents answering in the affirmative made up 75.5 percent of the total. There was a difference in the responses of the male and female students as evidenced by the chi-square statistic (p < 0.01). The contribution to
this significant difference comes from the category "no" where male responses were more than expected and yes" where the response of the female students was higher than expected.

The answers to the question, "Where do you think such a health facility should be situated?" are displayed in Table 5.14.

Table 5.14  Preferred site for a health facility

<table>
<thead>
<tr>
<th>OPTION</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Building</td>
<td>32 (23.3)</td>
<td>16 (24.7)</td>
<td>48 (7.1%)</td>
</tr>
<tr>
<td>Hospital Grounds</td>
<td>53 (56.8)</td>
<td>64 (60.2)</td>
<td>117 (17.3%)</td>
</tr>
<tr>
<td>Community Health Centre</td>
<td>143 (150.4)</td>
<td>167 (159.6)</td>
<td>311 (46.1%)</td>
</tr>
<tr>
<td>School Grounds</td>
<td>67 (63.1)</td>
<td>63 (66.9)</td>
<td>130 (19.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>21 (26.2)</td>
<td>33 (27.8)</td>
<td>54 (8%)</td>
</tr>
<tr>
<td>Not Stated</td>
<td>11 (7.3)</td>
<td>4 (7.7)</td>
<td>15 (2.2%)</td>
</tr>
<tr>
<td>COLUMNS TOTAL</td>
<td>328 (48.6)</td>
<td>347 (51.4)</td>
<td>675 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 13.70, d.f. 5; p < .05

Note:  The expected frequency is shown in brackets below the observed frequency.

The results of the chi-square test show a statistically significant difference between the responses of the male and female students (Chi-square 13.70, d.f. 5; p < 0.05).
The categories that contributed to the significant difference are "Community Health Centre" and "hospital building". More females than expected chose "Community Health Centre" whilst more males than expected chose "hospital building".

Those students who chose "other" category were asked to identify where they thought the health clinical should be situated. This eight percent stated "on the main street", "on the bus route", "easy for young people to get to" or "where your parents don’t have to know about you going". Figure 5.4 graphically illustrates the percentage of positive response to this question.
Figure 5.4  Responses to the question "Where do you think a health facility should be situated?"

5.7  Health Issues of Most Concern to Adolescents

Section 5.7 contains several tables supplying information about what health issues currently concern adolescents, what issues have they sought health or advice about, how do adolescents prioritise their concerns and is there a difference in the responses of the male and female students.
5.7.1 General Responses

Table 5.15 Identification of problems by category

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MALE</th>
<th>FEMALE</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(4.4)</td>
<td>(5.6)</td>
<td>(2.4%)</td>
</tr>
<tr>
<td>Body Image</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>24</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>(18.7)</td>
<td>(24.3)</td>
<td>(10.5%)</td>
</tr>
<tr>
<td>Sexuality</td>
<td>1</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>(4.8)</td>
<td>(6.2)</td>
<td>(2.6%)</td>
</tr>
<tr>
<td>Specific diseases</td>
<td>117</td>
<td>166</td>
<td>283</td>
</tr>
<tr>
<td></td>
<td>(123.3)</td>
<td>(159.7)</td>
<td>(68.9%)</td>
</tr>
<tr>
<td>Dental</td>
<td>33</td>
<td>31</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>(27.9)</td>
<td>(56.1)</td>
<td>(15.6%)</td>
</tr>
<tr>
<td>COLUMN TOTAL</td>
<td>179</td>
<td>232</td>
<td>411</td>
</tr>
<tr>
<td></td>
<td>(43.5)</td>
<td>(56.5)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 10.23, d.f. 4; p < .05

Note: The expected frequency is shown in brackets below the observed frequency.

There are two cells with expected counts less than 5.

The results shown in table 5.15 clearly indicate that those ailments that fit into the "specific" disease category accounted for a major reason for seeking help or advice, with dental problems the next most frequent followed by lifestyle issues. The differences between the responses of the male and female students was significant at the 0.05 level as shown in the table. The categories than contributed to the significant difference were "lifestyle", "dental", "specific diseases" and "sexuality". More males than statistically expected responded to "lifestyle" and "dental"
problems. More females than were expected statistically responded to "specific diseases" and "sexuality".

Figure 5.5 Responses to the question, "What problems did you require help for during the last year?"

Figure 5.5 indicates graphically the major reasons why the respondents said they required help with health problems in the last year. The reasons were grouped into the categories previously mentioned (table 4.3) and used throughout this study. These were the students first of two choices as shown in table 5.15. Less than half the students who identified a need for help or advice indicated a second choice. Of the sixty percent of respondents who said they sought help for a health problem (first choice) 68.9 percent identified the category "specific disease".
In this category were included such items as bacterial or viral infections and injuries. A further analysis of this 68.9 percent (n = 283) was undertaken. Over 66 percent of the respondents who identified the specific disease category nominated those problems shown in Table 5.16.

The remaining 2.5 percent of responses about the reasons for seeking medical advice were for a variety of reasons including influenza, 'sinus', tonsillitis, appendicitis, diabetes, chicken pox and shingles. There were four students who had sought help about "moles".
Table 5.16  Reasons for medical advice (Specific categories)

<table>
<thead>
<tr>
<th>DISEASE CATEGORY</th>
<th>f</th>
<th>* f</th>
<th># %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Disease (Asthma)</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Disease (Bronchitis + 1 Whooping cough)</td>
<td>11</td>
<td>A 60</td>
<td>(A) 32</td>
</tr>
<tr>
<td>Injury (Knee)</td>
<td>46</td>
<td>B 65</td>
<td>(B) 34.5</td>
</tr>
<tr>
<td>Injury (Ankle and foot)</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury (Other)</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury (Arm and wrist)</td>
<td>20</td>
<td>C 50</td>
<td>(C) 26.5</td>
</tr>
<tr>
<td>Back Pain/Injury</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma plus knee and ankle injury</td>
<td>13</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>TOTALS</td>
<td>188</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

119
5.7.2 Specific Categories

In section 5.7.2 several tables are displayed that continue to address the research questions, "What health issues cause the most concern to adolescents?" and "Is there a difference between the responses of the male and female students?". The responses to the forty-six individually identified topics provided information that is divided into sub sections to address the following categories:

a) body image
b) lifestyle
c) sexuality
d) mental health
e) specific disorders/disease,
f) social issues.

The obtained data were examined using the chi-square statistic to determine whether or not there was a difference between the responses of the male and female students.

The respondents indicated their concerns about the identified, individual health issues by answering yes (or no) to the statements commencing "I am concerned about .....". The number of "yes" responses was counted, converted to percentages and summarised. The frequency distribution of the "yes" replies was calculated to demonstrate that the obtained results followed a "normal distribution" (see fig. 5.6).
<table>
<thead>
<tr>
<th>Midpoint of Scores</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>50</td>
<td>11</td>
</tr>
<tr>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>3</td>
</tr>
<tr>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 5.6 Responses to the statement "I am concerned about ..........." items from the forty six identified health problems.

The minimum number of "yes" responses for any item was 112 or 17.28 percent of the total, for "problems with weight - too thin". "Risk of Aids" gained the maximum score of 532 "yes" responses or 78.93 percent of the total responses.

The mean and the standard deviation of the scores was then computed. See table 5.17.
Table 5.17  Description of health problem scores.

<table>
<thead>
<tr>
<th>Problems</th>
<th>Mean</th>
<th>St. Dev</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>46.23</td>
<td>12.15</td>
<td>17.28</td>
<td>78.93</td>
</tr>
</tbody>
</table>

Key: St. Dev. - Standard deviation  
Min. - Minimum % score  
Max - Maximum % score

Every item on this section of the questionnaire was identified as a concern by respondents. Those problems that were selected by more than 46 percent of the total sample were identified. That is, those problems gaining a score of the calculated mean (46.23) or better were considered to rate highly as a concern for the students. There were 23 items that satisfied this criterion, representing each of the categories. Table 5.18 shows the categories and the number items from each that were statistically significant. A list of the problems and the response rate for the concerns according to gender, as well as the total sample, are shown in appendix 5.
Table 5.18  Items of statistical significance from each category.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NO of ITEMS</th>
<th>NO of ITEMS in TOP 10 CONCERNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Image</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Sexuality</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Mental Health</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Specific Disease</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Social Issues</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23</td>
<td>10</td>
</tr>
</tbody>
</table>

The categories that contained the ten items that produced the highest percentage of responses from the male and female students are also shown in Table 5.19.
Table 5.19  Ten highest scoring responses by gender.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>MALE</th>
<th>%</th>
<th>FEMALE</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of Aids *</td>
<td>75.8</td>
<td></td>
<td>Risk of Aids *</td>
<td>81.8</td>
</tr>
<tr>
<td>Not having enough money *</td>
<td>68.1</td>
<td></td>
<td>Nuclear war or disaster *</td>
<td>77.5</td>
</tr>
<tr>
<td>S.T.D. *</td>
<td>67.5</td>
<td></td>
<td>Not having enough money*</td>
<td>74.9</td>
</tr>
<tr>
<td>Nuclear war or disaster *</td>
<td>59.6</td>
<td></td>
<td>Sexual abuse *</td>
<td>74.5</td>
</tr>
<tr>
<td>Being unemployed *</td>
<td>56.7</td>
<td></td>
<td>Cancer/Leukemia *</td>
<td>74.1</td>
</tr>
<tr>
<td>Cancer/Leukemia *</td>
<td>50.0</td>
<td></td>
<td>S.T.D. *</td>
<td>73.8</td>
</tr>
<tr>
<td>Girlfriend becoming pregnant</td>
<td>49.5</td>
<td></td>
<td>Feeling depressed</td>
<td>67.6</td>
</tr>
<tr>
<td>Sexual abuse *</td>
<td>47.1</td>
<td></td>
<td>Being unemployed *</td>
<td>65.5</td>
</tr>
<tr>
<td>Sporting accidents</td>
<td>45.1</td>
<td></td>
<td>Emotional upsets</td>
<td>65.3</td>
</tr>
<tr>
<td>Acne</td>
<td>42.9</td>
<td></td>
<td>Headaches</td>
<td>63.1</td>
</tr>
</tbody>
</table>

Note: 1. Percentages rounded to first decimal place
2. * Items common to male and female choices

Seven items chosen frequently by both male and female students were common to the ten highest scoring responses from each group (see asterisked items in table 5.19) with the emphasis on those items related to sexuality and social issues.
In table 5.20 the results for the statements, I am concerned about "problems with weight (too thin)"; "problems with weight (too fat)" and "skin problems e.g. acne" are shown. Both the percentage of "yes" responses and the result of the chi-square test for differences between male and female responses are shown. There was a significant difference shown by the chi-square value, between the male and female students responses to the "problems with weight" (too fat) statement. Female students were considerably more concerned than their male counterparts. The chi-square statistic was approaching significance (p = 0.052) for the question related to acne, with 55.16 percent of the affirmative responses from the female students.

Table 5.20 Summary of data analysis re body image - total sample

<table>
<thead>
<tr>
<th>Q.</th>
<th>Statement</th>
<th>Chi-square</th>
<th>d.f</th>
<th>p</th>
<th>% of &quot;yes&quot; responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Problems with weight (too thin)</td>
<td>2.64</td>
<td>1</td>
<td>.104</td>
<td>17.28</td>
</tr>
<tr>
<td>29</td>
<td>Problems with weight (too fat)</td>
<td>87.3</td>
<td>1</td>
<td>.000*</td>
<td>42.23</td>
</tr>
<tr>
<td>30</td>
<td>Skin problems (acne)</td>
<td>3.78</td>
<td>1</td>
<td>.052</td>
<td>46.76</td>
</tr>
</tbody>
</table>

* Statistically significant at p < .05

Key: Q = Number of statement on tool
d.f. = Degrees of freedom
p = Level of probability
Figure 5.6 illustrates graphically the percentage of the respondents who identified a concern about issues related to body image. "Skin problems - acne" scored above the mean established as the criterion which suggest that this is a major concern for the young people. "Problems with weight - too fat" although not achieving a score equal to or greater than the selected criterion was closely approaching this mark.

Figure 5.7 Responses to concerns about body image
Table 5.21 summarises the data analysis of the responses to the statements about issues related to "lifestyle" and displays the percentage of "yes" responses obtained from the total sample. These statements were - I am concerned about:

- not getting enough exercise
- difficulty with sleeping
- not eating the right foods
- drinking too much alcohol
- cigarette smoking
- motor car accidents
- accidents in sporting activities.
Table 5.21  Summary of data analysis re lifestyle - total sample

<table>
<thead>
<tr>
<th>Q</th>
<th>LIFESTYLE ISSUE</th>
<th>Chi-square</th>
<th>d.f.</th>
<th>p</th>
<th>% &quot;yes&quot; responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Not enough exercise</td>
<td>37.56</td>
<td>1</td>
<td>.000</td>
<td>49.48</td>
</tr>
<tr>
<td>33</td>
<td>Difficulty with sleeping</td>
<td>12.69</td>
<td>1</td>
<td>.000</td>
<td>27.87</td>
</tr>
<tr>
<td>34</td>
<td>Not eating right food</td>
<td>35.98</td>
<td>1</td>
<td>.000</td>
<td>48</td>
</tr>
<tr>
<td>36</td>
<td>Too much alcohol</td>
<td>4.74</td>
<td>1</td>
<td>.029</td>
<td>34.68</td>
</tr>
<tr>
<td>37</td>
<td>Cigarette smoking</td>
<td>1.30</td>
<td>1</td>
<td>.254*</td>
<td>39.47</td>
</tr>
<tr>
<td>38</td>
<td>Use of drugs</td>
<td>1.82</td>
<td>1</td>
<td>.177*</td>
<td>41.47</td>
</tr>
<tr>
<td>39</td>
<td>Motor car accidents</td>
<td>7.92</td>
<td>1</td>
<td>.005</td>
<td>45.75</td>
</tr>
<tr>
<td>40</td>
<td>Motor bike accidents</td>
<td>4.71</td>
<td>1</td>
<td>.030</td>
<td>40.54</td>
</tr>
<tr>
<td>41</td>
<td>Accidents in sport</td>
<td>4.87</td>
<td>1</td>
<td>.027</td>
<td>49.48</td>
</tr>
<tr>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Not statistically significant at the p = .05 level

Note:  Q = Number of statement on tool  
d.f. = Degrees of freedom  
p = Level of probability

There was a statistically significant difference between the response of the male and female students to the statements about exercise (p <0.001), difficulty with sleeping (p <0.001), not eating the right foods (p <0.001) and drinking too much alcohol (p <0.05). More females than expected statistically answered yes to each of these categories. There was no significant difference demonstrated by the chi-square statistic between the two groups of students to the statement about cigarette smoking nor about the use of drugs. The chi-square result for the statements about motor bike accidents, motor car accidents and accidents occurring in sport was significant at p < .05 level for each item, indicating a difference between the responses of the
male and female students. In each case the female students registered a concern more frequently than expected statistically.

Figure 5.8 shows the percentage of the respondents who identified a concern about issues related to lifestyle.

![Figure 5.8 Responses to concerns about lifestyle](image)

Figure 5.8 Responses to concerns about lifestyle

Key: 1 Not enough exercise  
2 Difficulty sleeping  
3 Not eating the right food  
4 Drinking too much alcohol  
5 Cigarette smoking  
6 Use of drugs  
7 Motor car accidents  
8 Motor bike accidents  
9 Sporting accidents
The analysis of the percentage of responses about "not getting enough exercise," "not eating the right food" and "accidents in sporting activities" gave results greater than the sample mean making them quite substantial concerns. A concern about motor car accidents scored 45.75, very close to the significance level of 46.34.

5.7.2c Sexuality

In this section information about student responses to statements related to sexuality is displayed. The statements address the following issues:

- problems with sexual development
- adequate sex education
- difficulty with access to contraceptive advice
- sexually transmitted disease
- risk of AIDS
- sexual abuse
- abortion.

The female students were asked to respond to the statements about becoming pregnant and problems with periods, and the male students were asked to respond to the statement about their girlfriend becoming pregnant.

The responses to statements about abortion (all students) and girlfriends becoming pregnant (boys only) resulted in scores greater than the computed mean score signifying substantial concerns. More significant however were the responses
obtained for concerns about sexual abuse (all students) and becoming pregnant (girls only) which resulted in a percentage score well above the mean. The obtained responses for concerns about sexually transmitted disease and the risk of AIDS proved to be two standard deviations above the sample mean percentage indicating the priority students placed on these problems or issues.

Figure 5.9 graphically illustrates the results of the identified concerns about issues or problems related to sexuality.
Figure 5.9 Responses to concerns about sexuality issues as percentage of total (Mean = 46.23)

Key: 1 Sexual development  
2 Sex education  
3 Access to contraceptive advice  
4 STD  
5 Risk of AIDS  
6 Sexual abuse  
7 Abortion  
8 Problems with periods (female)  
9 Becoming pregnant (female)  
10 Girlfriend becoming pregnant (male)

Table 5.22 displays the summary of the data analysis of students responses to the previously identified statements about sexuality as well as the percentage of the total sample who responded "yes" to a concern about the issues.
Table 5.22 Summary of data analysis re sexuality - total sample

<table>
<thead>
<tr>
<th>Q</th>
<th>STATEMENT</th>
<th>CHI-SQUARE</th>
<th>d.f.</th>
<th>p</th>
<th>% of yes responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Sexual development</td>
<td>12.09</td>
<td>1</td>
<td>.001</td>
<td>23.25</td>
</tr>
<tr>
<td>43</td>
<td>Sex education</td>
<td>14.38</td>
<td>1</td>
<td>.000</td>
<td>35.29</td>
</tr>
<tr>
<td>45</td>
<td>Contraceptive advice</td>
<td>27.9</td>
<td>1</td>
<td>.000</td>
<td>29.20</td>
</tr>
<tr>
<td>48</td>
<td>Sexually transmitted disease</td>
<td>3.21</td>
<td>1</td>
<td>.073*</td>
<td>70.73</td>
</tr>
<tr>
<td>49</td>
<td>Risk of AIDS</td>
<td>3.69</td>
<td>1</td>
<td>.056*</td>
<td>78.93</td>
</tr>
<tr>
<td>50</td>
<td>Sexual abuse</td>
<td>52.96</td>
<td>1</td>
<td>.000</td>
<td>61.19</td>
</tr>
<tr>
<td>51</td>
<td>Abortion</td>
<td>55.49</td>
<td>1</td>
<td>.000</td>
<td>47.94</td>
</tr>
<tr>
<td>44</td>
<td>Problems with periods (f)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td># 44%</td>
</tr>
<tr>
<td>46</td>
<td>Becoming pregnant (f)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td># 58%</td>
</tr>
<tr>
<td>47</td>
<td>Girlfriend becoming (m) pregnant</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td># 49.5%</td>
</tr>
</tbody>
</table>

* Not statistically significant at p < .05

Note: Q = Number of statement on tool
# = Percentage of male or female responses
d.f. = Degrees of freedom
p = Level of probability

The data yielded a chi-square value significant beyond the p = 0.05 level of significance for each statement except that for sexually transmitted disease and the risk of AIDS indicating a difference generally between the responses of the male and
female students (see table 5.22). The female students indicated a concern about the identified issues more frequently than expected in all other categories.

Forty-four percent of the female students who responded, expressed concern about problems with periods and 58 percent of the total number of female respondents expressed a concern about becoming pregnant. Of the 97.8 percent of the male students who responded to the statement about their girlfriend becoming pregnant, 49.5 percent expressed concern.

5.7.2d Mental Health

In this section the information examining students' responses to concerns about issues related to mental health is presented. Answers to the research question "is there a difference between the male and female students?" are also presented.
Table 5.23  Summary of data analysis re mental health - total sample

<table>
<thead>
<tr>
<th>Q</th>
<th>STATEMENT</th>
<th>CHI-SQUARE</th>
<th>d.f.</th>
<th>p</th>
<th>% yes responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Not coping with stress/tension</td>
<td>41.28</td>
<td>1</td>
<td>.000</td>
<td>46.23</td>
</tr>
<tr>
<td>53</td>
<td>Feelings of anxiety</td>
<td>18.15</td>
<td>1</td>
<td>.000</td>
<td>31.78</td>
</tr>
<tr>
<td>54</td>
<td>Emotional upsets</td>
<td>65.44</td>
<td>1</td>
<td>.000</td>
<td>50.15</td>
</tr>
<tr>
<td>55</td>
<td>Feeling good about myself</td>
<td>6.47</td>
<td>1</td>
<td>.011</td>
<td>45.39</td>
</tr>
<tr>
<td>56</td>
<td>Feeling bad about myself</td>
<td>34.71</td>
<td>1</td>
<td>.000</td>
<td>48.36</td>
</tr>
<tr>
<td>57</td>
<td>Feeling depressed</td>
<td>62.71</td>
<td>1</td>
<td>.000</td>
<td>52.83</td>
</tr>
<tr>
<td>58</td>
<td>Thoughts about suicide</td>
<td>11.38</td>
<td>1</td>
<td>.001</td>
<td>46.88</td>
</tr>
<tr>
<td>59</td>
<td>Not getting along @ school</td>
<td>10.88</td>
<td>1</td>
<td>.000</td>
<td>43.43</td>
</tr>
<tr>
<td>60</td>
<td>Not getting along @ home</td>
<td>15.67</td>
<td>1</td>
<td>.000</td>
<td>50.52</td>
</tr>
<tr>
<td>61</td>
<td>Not getting along with friends</td>
<td>32.05</td>
<td>1</td>
<td>.000</td>
<td>45.37</td>
</tr>
<tr>
<td>62</td>
<td>Not being able to talk to parents</td>
<td>18.84</td>
<td>1</td>
<td>.000</td>
<td>44.51</td>
</tr>
</tbody>
</table>

Note:  
Q = Number of statement on questionnaire  
d.f. = Degrees of freedom  
p = Level of probability
In table 5.23 the results for the statements "I am concerned about -- various related to mental health are displayed, as well as the summary of the data analysis used to examine the question of gender differences.

The chi-square statistic is significant for each of the identified issues to mental health (see table 5.23). An examination of the data reveals that the female students expressed concern more frequently than expected in every case.

The statements where the expected responses were greater than expected and contributed a major difference were "I am concerned about emotional upsets" and "I am concerned about feeling depressed".

Figure 5.10 illustrates the positive responses to the statements for concern about issues and problems related to mental health for the total sample.
Figure 5.10  Responses to concerns about mental health statements as a percentage of the total. (Mean 46.23)

Key: 1  Not coping with stress/tension
    2  Feelings of anxiety
    3  Emotional upsets
    4  Feeling good about myself
    5  Feeling bad about myself
    6  Feeling depressed
    7  Thoughts about suicide
    8  Not getting along at school
    9  Not getting along at home
   10  Not getting along with friends
   11  Not being able to talk to parents

The responses of concern to statements about the following issues scored at or more than the sample mean indicating the students' priority for these issues.
I am concerned about

- feeling good about myself
- stress or tension
- thoughts about suicide
- emotional upsets
- not getting on at home and
- feeling depressed

These issues then, have been identified as having a major degree of import for the adolescents surveyed.

5.7.2e Specific Disorders

The information about student responses to statements related to specific diseases or disorders is provided in this section. The statements were about:

- heart disease
- diabetes
- cystic fibrosis
- scoliosis
- cancer/leukemia
- kidney disease
- epilepsy
- headaches.
Table 5.24    Summary of data analysis re specific diseases - total sample

<table>
<thead>
<tr>
<th>Q</th>
<th>Item</th>
<th>Chi-square</th>
<th>d.f.</th>
<th>p</th>
<th>% yes Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>Heart disease</td>
<td>10.98</td>
<td>1</td>
<td>.001</td>
<td>43.95</td>
</tr>
<tr>
<td>64</td>
<td>Diabetes</td>
<td>24.73</td>
<td>1</td>
<td>.000</td>
<td>43.22</td>
</tr>
<tr>
<td>65</td>
<td>Cystic Fibrosis</td>
<td>17.54</td>
<td>1</td>
<td>.000</td>
<td>34.40</td>
</tr>
<tr>
<td>66</td>
<td>Scoliosis</td>
<td>34.51</td>
<td>1</td>
<td>.000</td>
<td>47.30</td>
</tr>
<tr>
<td>67</td>
<td>Cancer/Leukemia</td>
<td>41.52</td>
<td>1</td>
<td>.000</td>
<td>62.39</td>
</tr>
<tr>
<td>68</td>
<td>Kidney disease</td>
<td>21.58</td>
<td>1</td>
<td>.000</td>
<td>47.83</td>
</tr>
<tr>
<td>69</td>
<td>Epilepsy</td>
<td>16.93</td>
<td>1</td>
<td>.000</td>
<td>42.60</td>
</tr>
<tr>
<td>70</td>
<td>Headaches</td>
<td>34.17</td>
<td>1</td>
<td>.000</td>
<td>52.24</td>
</tr>
</tbody>
</table>

Note:  
Q = Number of statement on questionnaire  
d.f = Degrees of freedom  
p = Level of probability

The chi-square statistical test, when applied to the responses to statements about specific diseases was highly significant on every occasion as demonstrated in table 5.24. Female students identified concerns more frequently than their male colleagues. A high proportion of the total respondents overall identified a concern about Cancer and Leukemia, placing it in the ten concerns with highest percentage of responses.

The data displayed in Figure 5.11 indicates the positive responses to the statements about concern for specific diseases which were identified as having some relevance to adolescents in the literature review (Chapter 3, section 3.5). These responses are expressed as a percentage of the total sample.
Figure 5.11 Responses to concerns about specific diseases as percentages of total. (Mean = 46.23)

Key: 1 Heart disease
2 Diabetes
3 Cystic fibrosis
4 Scoliosis
5 Cancer/Leukemia
6 Kidney disease
7 Epilepsy
8 Headaches

The obtained scores for scoliosis, kidney disease and headaches were beyond the computed sample mean with concern about cancer/leukemia scoring more than one standard deviation from the mean.
This section provides information about the students' responses to the statements about social issues that are classified as impacting on health.

These issues are defined as:

- being unemployed
- having nowhere to live
- not having enough money, and
- nuclear disaster or war.

Table 5.25 Summary of data analysis re social issues - total sample

<table>
<thead>
<tr>
<th>Q</th>
<th>Item</th>
<th>Chi-square</th>
<th>d.f.</th>
<th>p</th>
<th>% yes Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>71</td>
<td>Being unemployed</td>
<td>5.53</td>
<td>1</td>
<td>.019</td>
<td>61.30</td>
</tr>
<tr>
<td>72</td>
<td>Having nowhere to live</td>
<td>11.44</td>
<td>1</td>
<td>.001</td>
<td>49.47</td>
</tr>
<tr>
<td>73</td>
<td>Not having enough money</td>
<td>3.76</td>
<td>1</td>
<td>.052*</td>
<td>71.58</td>
</tr>
<tr>
<td>74</td>
<td>Nuclear disaster or war</td>
<td>25.16</td>
<td>1</td>
<td>.000</td>
<td>68.75</td>
</tr>
</tbody>
</table>

* Not significant at p = 0.05

Note: Q = Number of statement on tool
d.f. = Degrees of freedom
p = Level of probability
In table 5.25 the responses to the statements "I am concerned about" - the identified social issues, are displayed. The data for each statement except "not having enough money" yielded a chi-square value which is significant beyond the 0.05 level of significance, although the result to this prompt showed a strong trend towards significance. These findings indicate a difference in the responses of the female and male students. This difference is most marked for "I am concerned about nuclear disaster or war" in this section on social issues which places it in the ten concerns with a high percentage of responses.

An inspection of the data displayed in Figure 5.12 indicates the significance of the responses about concerns related to social issues.
Figure 5.12  Responses to concerns about social issues, as percentage of total. (Mean = 46.23)

Key: 1  Being unemployed
     2  Having nowhere to live
     3  Not having enough money
     4  Nuclear disaster or war

"Having nowhere to live" scored at the computed sample mean with "having nowhere to live" and "nuclear disaster or war" scored one standard deviation beyond the mean. "Not having enough money" scored two standard deviations beyond the sample mean, indicating a concern of some importance to the respondents.
5.8 Prioritisation of Concerns

In this section data are presented that continue to answer the questions about health issues of concern to adolescents and whether or not there is a difference between the responses of the male and female students.

The students were requested to review the items they had identified and to list in order of priority those that caused them the most concern. The responses were described and grouped into the categories previously defined and used throughout this study. The responses were expressed as percentages according to gender and the total sample. They were then scored according to their order of priority as chosen by the students. Points were allocated in descending order from 5 to 1 for the ranked choices. The total point score attracted by each category was used as a guide to determine the importance of that category for the respondents.
Table 5.26 displays this scoring method and identifies total scores assigned to each category.

Table 5.26 Scoring method for prioritisation of problems by category

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PRIORITY</th>
<th>TOTAL SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Body Image</td>
<td>1 0 0 0 0</td>
<td>1</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>2 4 5 5 5</td>
<td>21</td>
</tr>
<tr>
<td>Sexuality</td>
<td>5 5 4 4 2</td>
<td>20</td>
</tr>
<tr>
<td>Mental Health</td>
<td>0 1 1 1 1</td>
<td>4</td>
</tr>
<tr>
<td>Specific Disease</td>
<td>4 3 3 3 4</td>
<td>17</td>
</tr>
<tr>
<td>Social Issues</td>
<td>3 2 2 2 3</td>
<td>12</td>
</tr>
</tbody>
</table>

Figure 5.13 illustrates the students’ choices as they prioritised them and shown in the categories used throughout this study. Issues related to sexuality rated strongly for first, second and third choices, whilst lifestyle issues, though rating quite well as first and second choices became important as third, fourth and fifth choices.
Figure 5.13 Most important health concerns

The order of priority therefore for the categories of issues or problems that elicited the most response from students is as follows:

1. Lifestyle
2. Sexuality
3. Specific diseases
4. Social issues
5. Mental Health
6. Body image
The chi-square test was applied to the data to elicit any difference in the way the male and female students responded to the question about the prioritisation of their identified concerns. Table 5.27 displays the resulting data analysis of the male and female responses.

Table 5.27 Summary of data analysis for prioritisation of problems.

<table>
<thead>
<tr>
<th>Prioritisation</th>
<th>Chi-Square</th>
<th>d.f.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>19.76</td>
<td>6</td>
<td>.003*</td>
</tr>
<tr>
<td>Second</td>
<td>11.36</td>
<td>6</td>
<td>.078</td>
</tr>
<tr>
<td>Third</td>
<td>20.87</td>
<td>6</td>
<td>.002*</td>
</tr>
<tr>
<td>Fourth</td>
<td>22.05</td>
<td>6</td>
<td>.001*</td>
</tr>
<tr>
<td>Fifth</td>
<td>17.20</td>
<td>6</td>
<td>.009*</td>
</tr>
</tbody>
</table>

* Significant at $p < 0.05$

The categories which contributed to the significant difference in the "first choice" are body image, sexuality and mental health where more females than statistically expected responded and lifestyle, specific disorders and social issues where more males than statistically expected responded positively. There was no statistically significant difference in the way the male and female students responded for their second choices. When choosing their third most important problem, more females than expected identified body image, sexuality and social issues whilst more males than expected identified lifestyle and specific disorders, all contributing to the chi-square statistic ($20.87, p = 0.002$.)
The areas which contributed to the statistically significant difference for the fourth choices were mental health where the female response was more than expected and lifestyle and specific disorders where the male response was more than expected.

Fewer students identified a fifth choice, however the male students contributed to the statistically significant difference by responding more frequently than expected for lifestyle, with the female students responding more frequently than expected to sexuality.

5.9 Non-Respondents

The incomplete or facetiously completed questionnaires of 22 students (3.2 percent of the total responses) were not included in the statistical analysis. When students were reminded about their option not to take part in the survey they were told that they could complete Part A only, if they wished. This was intended to give the students the opportunity to appear to be completing the questionnaire if they so wanted. It also enabled the researcher to get some general demographic information from these students. Woods and Catanzaro (1988) point out when individuals refuse to participate in a study, there is little that the researcher can do to estimate the type of bias, if any, that is operating. Woods and Catanzaro suggest that the investigator obtain some demographic data from the non-respondents to allow "the investigator to assess the non-response bias with respect to the demography of the sample" (1988:182). All of the group identified as non-respondents completed part A and a portion of part B of the questionnaire.
PART A.

Non-respondent males comprised 54.5 percent of the total and females made up 45.5 percent. Ninety five point five percent of the non-respondents were aged between fourteen years and sixteen years of age with 4.5 percent aged between eleven and thirteen years. Australian born non-respondents totalled 95.5 percent. This compares with the 95.7 percent of the respondents whose replies were submitted for analysis, who stated they were Australian born.

Forty one percent of the non-respondent group said there was no religion in their household, whilst 36.4 percent said the household was Catholic. Non Christians were 4.5 percent of the total and 18.2 percent identified Protestantism as the main religion in their households.

Seventy seven percent of the non-respondents lived with both parents; 4.5 percent lived with either their mother only or father only whilst fourteen percent identified the "other" category. These results match fairly closely the results obtained from analysis of the replies from the main sample where 77 percent lived with both parents; 6 percent lived with mother only; 2 percent lived with father only.
Table 5.28 shows a comparison between the responses of the two groups to the question about their fathers' occupations. The results of this comparison did not show any statistically significant difference although there was a trend towards such a difference.

Table 5.28  Comparison of father's occupation

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>SAMPLE</th>
<th>NON RESPONDENTS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial/Administrative Professional/Para-Professional</td>
<td>146 (147.3)</td>
<td>6 (4.7)</td>
<td>152 (23.3%)</td>
</tr>
<tr>
<td>Tradesperson</td>
<td>140 (138.6)</td>
<td>3 (4.4)</td>
<td>143 (22%)</td>
</tr>
<tr>
<td>Clerks, Sales &amp; Personal Services</td>
<td>67 (64.9)</td>
<td>0 (2.1)</td>
<td>67 (10.3%)</td>
</tr>
<tr>
<td>Plant Machine Operator, Labourer</td>
<td>231 (231.7)</td>
<td>8 (7.3)</td>
<td>239 (36.6%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>48 (49.4)</td>
<td>3 (1.6)</td>
<td>51 (7.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>632 (96.9%)</td>
<td>20 (3.1%)</td>
<td>652 (100%)</td>
</tr>
</tbody>
</table>

Chi-square 4.39, d.f. 4; p > 0.05

Note: Expected frequencies are shown below observed frequencies.

Thirty seven percent of the non-respondents group said their mother did not work outside the home; 54.5 percent said their mother did work outside the home, whilst nine percent either did not know or did not answer. In the main sample, 62 percent of mothers worked outside the home.
PART B

Although this group of students did not answer all of the questions in Part B of the questionnaire, they did answer most of them. Following are their responses to nominated questions about general health issues.

When asked about a definition of health the majority of the students chose the definition closest to that of the WHO coinciding with the previous results from the main sample. Table 5.29 shows the analysis of these responses that indicated there was no statistically significant difference between the two groups of students.

Table 5.29 Comparisons between definitions of health.

<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>SAMPLE</th>
<th>NON-RESPONDENTS</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence of disease or disability</td>
<td>44</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>(45.5)</td>
<td>(1.5)</td>
<td>(7%)</td>
</tr>
<tr>
<td>Being physically fit</td>
<td>115</td>
<td>7</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>(118.0)</td>
<td>(4.0)</td>
<td>(18.1%)</td>
</tr>
<tr>
<td>State of complete physical, mental and social well being</td>
<td>493</td>
<td>12</td>
<td>505</td>
</tr>
<tr>
<td></td>
<td>(488.5)</td>
<td>(16.5)</td>
<td>(74.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>652</td>
<td>22</td>
<td>674</td>
</tr>
<tr>
<td></td>
<td>(96.7%)</td>
<td>(3.3%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 5.07, d.f.2; p = >0.05

Note: Expected frequency is shown below the observed frequency.

When asked to compare their own health with that of their peers, the following results were obtained. Thirty two percent said it was fair; 59 percent said good and 9 percent said their health was excellent compared to that of their peers. No
students thought their health was poor. The answers from the sample showed that 18 percent recorded fair; 55 percent said good and 24 percent noted the excellent category. Twenty seven percent of the non respondent group said their activity level had been decreased because of illness compared with 19 percent from the sample group. Sixty four percent of the non respondent group sought help or advice from a doctor about health problems compared with 34 percent from the sample group.

In response to the question "If there was a health facility or clinic specifically for young people would you use it?", 45.4 percent of the non respondent group said yes. This compares with 74 percent who said "yes" from the sample group. Fifty percent said "no" to this question, whilst "no’ was the response from 24 percent of the sample group. Two percent of the sample group did not give an answer to the question and 4.5 percent of the non respondent did not give an answer.

Table 5.30 shows a comparison of the answers of the two groups to the question about where the students would like such a facility situated.
Table 5.30  Comparison of preferred sites for health facility

<table>
<thead>
<tr>
<th>SITUATION OF CLINIC</th>
<th>SAMPLE</th>
<th>NON-RESPONDENTS</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital building</td>
<td>48</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>(49.4)</td>
<td>(1.6)</td>
<td>(7.3%)</td>
</tr>
<tr>
<td>Hospital grounds</td>
<td>117</td>
<td>3</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>(116.2)</td>
<td>(3.8)</td>
<td>(17.2%)</td>
</tr>
<tr>
<td>Community Health Centre</td>
<td>311</td>
<td>6</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>(307)</td>
<td>(10)</td>
<td>(45.5%)</td>
</tr>
<tr>
<td>School grounds</td>
<td>130</td>
<td>6</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>(131.7)</td>
<td>(4.3)</td>
<td>(19.5%)</td>
</tr>
<tr>
<td>Other or Not stated</td>
<td>69</td>
<td>4</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>(70.7)</td>
<td>(2.3)</td>
<td>(10.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>675</td>
<td>22</td>
<td>697</td>
</tr>
<tr>
<td></td>
<td>(96.8%)</td>
<td>(31.2%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Chi-square 5.05, d.f.4; p > 0.05

Note: Expected frequencies are shown below observed frequencies.

The non respondent group were in the same age range as the sample group and they presented a similar demographic profile. More of the non respondents' fathers were in managerial positions and labouring positions than the sample and there were more fathers identified as tradespersons in the sample group. Mothers who were in paid employment constituted 54.5 percent of the non respondent group and 62 percent of the sample group.

Not all of the questions in part B were answered by the non respondent group, however they did answer what could be considered key questions in this research. When asked to compare their own health with that of their peers the non respondents...
identified "fair" more frequently and "excellent" less frequently than the students from the sample group.

There was a difference in the response regarding the possible usage of a special health facility with 74 percent of the sample group saying yes and 45.5 percent of the non respondents saying yes. Of the students who said they would use such a facility the sample group gave a different response pattern.

Because of the size of the non response group it is very difficult to draw any valid conclusions about their answers.
Summary of Results

This chapter has reported on the responses of students to a survey on adolescent perception of health. The survey sampled 700 students attending various high schools in the Hunter Region. Their ages ranged from the "11 to 13 year" group to the "17 to 19 year" group with ninety percent of the respondents aged 14, 15 & 16 years of age. Forty eight percent were male and fifty one percent were female students. The students answered questions about themselves and their knowledge, concern and experience of selected health issues and health problems.

Students were from a geographic area that included rural, city and lakeside areas. They were mostly Australian born and came from a variety of socio-economic backgrounds. The majority (seventy-seven percent) of students lived in a two parent household with six percent living with their mother only.

Seventy three percent of all students agreed with the WHO definition of health and seventy nine percent believed their health to be "good" or "excellent" when compared to the health of their peers, with no statistically significant difference between the male and female student responses.

Medical practitioners were rated as the group of people most used for advice or help with health problems while "friends only" rated very poorly. Over 68 percent of students actually sought help in the previous 12 months for problems related to the specific disorders category.
There was an identifiable difference between the response of the male and female students to the question about why they sought help or advice, particularly in the categories of lifestyle, sexuality and specific disorders.

On the key issue of usage of a special health facility 75 percent of the respondents said yes they would use such a facility if it were available.

Students indicated a concern about a range of issues related to their health. Students generally expressed some concern about the issues in categories defined as mental health, sexuality, lifestyle, social factors, body image and some specific disorders.

There was a difference between the responses of the male and female students to most questions, except those related to problems with weight (too thin), cigarette smoking, drug usage, sporting accidents and sexually transmitted disease, where there were no identifiable differences. Male students identified less concern than female students about all other topics.

Students gave a range of concerns when asked to prioritise their own particular health concerns in descending order from one to five and data analysis showed a significant difference in the way the male and female students responded.
CHAPTER 6

DISCUSSION
This chapter discusses the results obtained from the survey and displayed in Chapter 5.

6.1 Introduction

All areas of the Hunter Region as previously described were represented in this survey. The schools attended by students who took part covered a wide geographical area and each of the major population centres from the inner city, east and west lakeside areas, large and medium urban centres and smaller cities and towns were represented. The feeder areas for these schools contained a wide variety of socio-economic status groups as demonstrated by residential area postcodes, parents occupations and family structures.

Figure 6.1 Map of NSW showing Hunter Region
The geographical area covered by this survey represented a diversity of social, economic industrial and cultural environments. The Hunter River and its tributaries form one of the largest river valleys on the New South Wales coast. Documentation by the Hunter Valley Research Foundation (1992) points out that with the broadening and strengthening of the area’s agricultural base, service industries such as electric power stations fuelled by Upper Hunter Coal and the encouragement of tourism, there has been the development of a full range of primary, secondary and tertiary industries. These facts give weight to the idea that the Hunter Region can be seen as a microcosm of Australian Society (1990:2). At the 1986 Census of Population and Housing the largest urban centre was Newcastle/Lake Macquarie with other large urban centres at Maitland, Cessnock, Kurri and Singleton. The population residing in urban centres was 86.4 percent (ABS, 1304.1). Thirty eight percent of the total number of respondents lived in the larger city or lakeside areas of the Hunter Region; forty four percent were from rural areas; and 17 percent from smaller cities serving both urban and rural areas.

6.2 Social and Demographic Profile

The majority of the students who responded to the survey questionnaire were aged between fourteen and sixteen years of age. It is well recognised that "chronological age and biological age diverge at adolescence" (Newman and Newman, 1988) and that chronological age groupings include persons who are at varying stages of physical, intellectual and social maturation. The fourteen to sixteen age group or "middle adolescents" are those most often described as adolescents (Peterson, 1982)
and they display all of the recognised stages of development, although as Kreipe, Churchill and Strauss point out most have already experienced the majority of their physical growth and development (1989:104).

It is during middle adolescence also that the development of personal values, the capacity for judging issues of concern and a sense of responsibility become evident (Connell et al 1975). According to the WHO, (1986) it is also the time of the establishment of their individual identity incorporating adaptive social roles. The noted work by Havighurst and Taba (1949) emphasizes the impact the social milieu in which the adolescent resides has on the development of their character and personality. They advance the premise that by sixteen years of age, patterns of conduct have become consistent allowing observations to be made about adolescent behaviours and opinions.

In the similar age group in a 1983 study, approximately 80 percent of the respondents were at school (Department of Education and Youth Affairs) and in the 1986 Australian Youth survey, 61.3 percent of respondents were attending school. The difference in the 1986 figures is due to the age group including some students beyond the compulsory school attendance age.

The male to female ratio of students in the sample (male 48.7 percent, female 51.3 percent), compares with both the Hunter area figures and the national figures. The proportions of students in the sample attending the Government school system and the Independent school system also follow very closely the proportions for the
Hunter region in general. The Australian Youth Survey (D.E.E.T 1989) identified that 29 percent students were in Independent schools and 71 percent in Government schools.

The percentage of students in the sample who were born in Australia was a higher percentage than anticipated given the general population trend towards multiculturalism. This, plus the fact that only 2.5 percent of the sample were from a non Christian background, indicates a fairly homogeneous group.

Generally speaking the importance of religion during the adolescent years declines. Those adolescents, however, who maintain affiliation with a religion, do so with the religion that they knew as children (Steinberg, 1985). Religion can give a hint towards a person's ethnic or cultural background. Belief systems associated with some religions can frequently prescribe notions about illness and health, usage of traditional or non traditional treatments, dietary habits and attitudes towards health care (Pender, 1987; Boddy, 1987; Davis and George, 1988; Murray and Zentner 1989; Hopkins in Vimpani and Parry 1989).

Discussing support systems relevant to health, Pender identifies the relevance of religious organizations. "Religious organizations or denominations constitute the oldest community support systems evident today" (1987:397). Those young people who attend a school where their ethnic or socio-economic group is in the minority are more likely to have self image problems than those who are in the majority group (Rosenberg in Steinberg, 1985). Using this criterion it would be anticipated
that there would be no related problems for of students in this sample who constituted the "majority" group. It is the students from the non-Christian or minority group who may experience difficulties as described by Rosenberg.

A higher than expected number of the students lived in a two parent family. The proportion of single parent families has increased considerably over the last few years, both in Australia and in other countries (Department of Education and Youth Affairs 1983; Steinberg, 1985; ABS, 1986; WHO, 1989). The obtained figures however are similar to the findings from the Australian Youth Survey of 1989. Of the respondents who lived with one parent the majority identified their mother as the sole parent, with very few living only with their father.

A significant aspect of the 1983 study undertaken by Department of Education that matches the findings from the present study was that approximately 87 percent of single parents are female. How adolescents and their parents respond to one another is more important than whether the family has one parent or two, according to (Steinberg, 1985). However single parent families may experience difficulties with accommodation, finance, decreased social networks and decreased social interactions. There is the potential therefore for 12.3 percent of this sample group of adolescents in single parent families to be at an increased risk of some of these problems. Robertson, 1986; Newacheck, 1989; Eckersley, 1989; Papini, Roggman & Anderson, 1991 noted that adolescents who could demonstrate attachment to both parents, reported less depression and social anxiety and appeared to deal better with the challenges of adolescent development.
If the reason for the single parent family was divorce or separation there may be evidence of stress or anxiety and some difficulty for the adolescent in adapting to the changed situation. Adolescent suicide can usually be linked to family conflict and breakdown. Eckersley cites a study by Kosky (1987) that found that suicidal behaviour was clearly associated with depression, family violence, divorce or separation of parents. Also as identified by clinical psychologist John Howard "the development of delinquency can be associated (in part) with the quality of parental care, specifically with a father who is ...... absent which then places more pressure on an already overburdened mother." (Eckersley 1991:4)

There was no significant difference between the responses of the male and female students to this question (Chi-square 6.6, d.f. 5; p > 0.05) indicating that gender is not a component of the obtained results.

An examination of the occupational profile of fathers revealed an incidence of unemployment very close to the area figures. The rate of unemployment in the Hunter Region in 1990 was 8.6 percent for males. The figure for young people aged between 15 and 19 years registered as unemployed was 20.1 percent. The unemployment rate for NSW in 1990 was 6.5 percent for males and for the 15 to 19 years age group, 14.6 percent (ABS 1991). These figures show that the unemployment rate for the Hunter area is higher than the State average. The incidence of unemployment for fathers in this survey was close to the Hunter area average even taking into account the small percentage of the respondents who did not reply or said they did not know. Although a large percentage of mothers work
outside the home, the fathers' occupation is used in most studies to define the socioeconomic status of the family. (Roelofse & Middleton, 1985; Hodgson et al, 1986;) This influenced the concentration on the father's occupation. The consequences of that unemployment on the adolescent's family may include inadequate nutrition, housing difficulties, anxiety and stress. "Unemployment ... seems to have some causal relationship with illness" (Davis & George, 1988:46). In a major study undertaken in USA by Newacheck, it was identified that adolescents from poorer families received less physician contacts despite poor health and spent more time in hospitals than "non poor youth". "Adolescents from poor families were 47 percent more likely to suffer from a chronic disabling condition than were adolescents from non poor families" (Newacheck, 1989:1059). The Department of Education and Youth Affairs noted that

"unemployment is not only contributing financial hardship and reduced overall material welfare but is creating animosity between generations of families, restricting career opportunities increasing the amount of enforced leisure time exerting a threat to self esteem, particularly for those with least skills and the lowest level of education" (1983:9)

Eckersley (1989) points out that youth unemployment tends to be concentrated in families where the parents have low incomes or are themselves unemployed.

Sixty two percent of the respondents said their mothers worked outside the home. In an unpublished survey of adolescents in the Western Sydney region in 1982 (Weston, et al) 57 percent of the mothers undertook outside work and in the Australian Youth Survey of 1989, 54.6 percent of mothers worked in a paid job or business. There was only a slightly higher percentage of working mothers in this
survey than in the two studies mentioned. "The movement of married women back into the paid labour force..... is another significant factor effecting the nature of family life in Australia today" (Edgar in Vimpani and Parry 1989:109). This effect of course could result in positive as well as negative outcomes.

Factors identified in this section of the study appear to match those of some other studies carried out in Australia (Dept. of Education and Youth Affairs 1983, Australian Youth Survey 1986). These factors, age, religion, family structure, fathers' occupation and whether or not there are two incomes for the family of the adolescent, can effect the health practices of that family. "Current social and family changes and other environmental influences are likely to test children's (and adolescent's) resilience and adaptability in fresh ways" (Vimpani, 1989:91)

Although there are some minor differences between the information from this sample and samples from other studies, there is a close correlation with the figures for the wider population.

6.3 Perceptions of Health

There are many definitions of health in the current literature (see chapter 3.3). One thing that writers about health and health promotion have in common is the notion that these issues have an inherent range of meanings with different personal and social significances (Perry, 1984; Pender, 1987). It is important then to identify individual perceptions of health before implementing appropriate strategies for
increasing the level of health in the particular society as identified by Stanhope and Lancaster (1991) and that is what this study was attempting to do.

In choosing the definition of health from the WHO, "a state of complete physical mental and social wellbeing", the majority of the sample indicated a recognition that health was more than an absence of disease and involved more than just a physical dimension. At an International Youth Year workshop in Western Australia in August, 1985 reported by Robertson 1987 the participating young people listed eleven statements about what health meant to them. Their first choice was that health was to do with the state of mind, body and emotions. A similar undertaking in the A.C.T. in 1986 had adolescents identify health with responses indicating a focus consistent with the WHO definition (Burkinshaw 1987:11). It is encouraging to have almost three quarters of the sample choose this definition because "as children mature chronologically and physiologically so too do their conceptualisations of health and disease" (Michalide, 1986:6). In this study there was a lack of support for a difference between the male and female responses (see chapter 5, table 5.3) to the chosen definition of health.

Eighty percent of respondents indicated that their activity was not decreased by any health problems. Activity levels as an indication of physical fitness have long been used and any decrease in usual activity levels can be indicative of chronic illness or physical disability. (Hamburg in Coates, Peterson and Perry 1982; Pender, 1987; Newacheck, 1989; Saucier, 1991)
The difference between the answers of the male and female adolescents about activity was significant mainly because the female students answered "Yes" more frequently than expected to decreased activity. An examination of the reasons for this decreased activity (chapter 5, table 5.5) indicates the male students responses to the "Body Image, Lifestyle and Sexuality" category were slightly more than expected. However with only 20 percent of the students indicating a decreased activity level the significance of the data without further clarification is questionable. It is necessary to consider this information in combination with additional data about why help was needed for health problems.

According to Pender (1987) dietary inadequacies in the guise of over-nutrition or under-nutrition plague persons at all socio-economic levels. Although a wide variety of factors influence eating behaviours, knowledge about nutritional requirements is essential to reduce the prevalence of many nutritional-status related problems among adolescents (Dwyer, 1982:324). There was a high number of "agree" and "strongly agree" responses to the statement about having adequate knowledge about nutrition and what constitutes a healthy diet. Although this positive response rate was quite high, due possibly to specific programmes within the schools about nutrition, the questionnaire failed to ask about healthy eating practices. This was an omission that should be addressed if this study was to be repeated, as evidence shows that a substantial part of an adolescent's nutritional intake comes from "takeaway food" and snacks which tend to be high in calories (Daniel, 1982; Story 1982; Skinner and Woodburn, 1984; Balaam, 1986; Muscari, 1988; Marks and Fisher, 1987).
In response to a later question 48 percent of the students indicated that they had a concern about not eating the right foods (chapter 5, table 5.18). A comparison between the responses to these two questions suggest that though the majority of students believed that their knowledge about nutrition was good or better, nearly half of them identified not eating the right food as a concern. This may indicate a discrepancy between knowledge, and action that identifies application of that knowledge. However it is more likely that the young people are influenced by the media emphasis on fast or convenience foods and current eating patterns of society in general. The chi-square statistic did not demonstrate a difference in the responses of the male and female students regarding knowledge of nutrition in general.
6.4 Comparisons between own health states with consideration of gender differences

No significant difference was observed between the responses of the male and female students regarding a comparison between their own health and that of their peers (p > 0.05 see chapter 5, table 5.6). The percentage of adolescents who thought that their health was "good" or "excellent" when compared to their peers corresponded to the percentage who indicated that their activity was not decreased by any illness or health problem (chapter 5, table 5.4). Pletsch and Leslie (1988) who used a four point scale for their questionnaire discovered that a similar percentage (76 percent) of adolescents perceived their health status as good as, or better than their friends. In the survey by Weston and colleagues (1982) in Western Sydney 86 percent of respondents believed their health to be "good". A similar question to over 22,000 adolescents in USA obtained 77 percent response to the "excellent" or "very good" category (Newacheck, 1989).

Whilst the majority of the adolescents thought their health was good, the answers to the question "how often do you worry about your health?" drew a different response. An examination of these results indicates that 55 percent seldom or never worried about their health and a further examination of table 5.8 in chapter 5 shows that 26 percent of the adolescents did not seek help or advice about a health problem or concern in the last twelve months and 41 percent did so once or twice. These results support the results from Pletsch and Leslie (1988) who found that although 76 percent perceived their health as good or better only 20 percent said they had not
received any health care in the last year, with a further 24 percent saying once only.

Three percent of respondents in this study indicated their health was poor compared with their peers, but more than four times that percentage said that they sought help or advice more than five times during the last year. The percentage of students who said they 'always' or "usually" worry about their health was more than double the percentage of respondents who said they would like more information about their health problems. It appears that being worried about their health or considering that their health was poor did not mean that the young people necessarily go looking for information that may help to alleviate the worries. Could it be that they do not know where to go, do not know if help is available or is it that they do not consider that any help or advice is needed?

The difference (p < 0.001) between the responses of the male and female adolescents to both questions about how often they worry about their health and how often they sought help was due to female students more frequently indicating they "always" or "usually" worry about their health status and male students responding more frequently to the "never" category. More females than males sought help or advice more than five times the preceding year and more males than females said they sought no help at all.
These data viewed as a whole suggest two issues. The first is that although the respondents generally considered themselves to be healthy, more than half had required help about a health problem and 45 percent always or usually worried about health problems. This may indicate a discrepancy in the perception of health as previously identified. When the reasons for seeking help or advice were identified over 68 percent indicated the specific disease category (see chapter 5, table 5.12) which was heavily weighted towards viral or bacterial infections and injuries indicating a possible need for treatment (therapeutics, X-Rays, or referrals) rather than "help" or "advice". This may indicate a reliance on treatment for existing conditions of ill health rather than an orientation towards illness prevention.

The second issue is that clearly the female adolescents are more concerned about health problems and seek help for those problems more frequently than their male colleagues. There is no apparent reason for this, evident in these findings.
6.5 Source of help or advice

Leading on from the fact that many of the respondents did seek help or advice in the previous twelve months, is the information that medical practitioners alone provided the bulk of this help or advice and doctors plus a combination of other choices, including parents, accounted for over a quarter of the responses. Parents alone were specifically consulted by a small proportion of the adolescents (12.9 percent). An unexpected result was the responses to the category "friends". A much higher percentage of responses for that category was anticipated in view of the overwhelming evidence/suggestion of the influence of the peer group on the behaviour and thoughts of adolescents (Petersen, 1982, Steinberg, 1985). Moran & Eckenrode (1991) reviewed studies that evidenced both the costs and benefits of peer relationships and their relative impact on emotional well being. They found from their own study that many adolescents spent more time interacting with peers than with their families or alone. There is evidence to suggest that "the overall balance of the costs versus the benefits of peer relationships during adolescence appears to be tipped favourably for males and unfavourably for females" (1991:404). Although their study was done on a small sample (188 adolescents), there is an indication of the need for further research and the results from this present survey seem to suggest that the area of peer relationships and influences warrants further investigation. Another question asking with whom health related issues were discussed, as separate from obtaining help or advice, may have elicited a different response.
Males consulting the doctor only and females opting for more than three choices were mainly responsible for the differences elicited between the two groups (p < 0.01). Other studies in Australia and overseas have also identified this predilection for medical advice, rather than advice from other health professionals (Bennett, 1985; Marks and Fisher 1987; Pletsch and Leslie, 1988; Fisher, Marks and Trieller, 1988).

As stated previously, the nature of the help required determined visits to the doctor as the primary care giver (see chapter 5, table 5.13). An important variable that also contributed to this result is the dearth of specialist adolescent services in this Region particularly in the rural areas. The very low percentage of the students who indicated usage of services at hospital, clinics or chemist is also interesting in light of the further information that injuries accounted for a substantial reason for requirement for help. An examination of adolescents' health concerns in section 6.7 will enable more discussion about the question of who it is that adolescents go to for help about health problems or advice. However there is an increasing recognition that the general practitioner is the adolescent's initial contact for treatment or advice. Notwithstanding that the family doctor is in an excellent position to provide accessible, broadbased and non-stigmatising health care for teenagers (Bennett, 1985), there is a concern among adolescent health care workers that many busy general practitioners or indeed hospital outpatient staff, do not have time to let the adolescents talk or to explore broader health issues with them (WHO, 1977 and 1989; Australian College of Paediatrics, 1980; Commonwealth Department of Health 1981; Weston et al, 1982; Robertson, 1986; Burkinshaw, 1986; Court, 1987). This
has implications for the preparation/training of general practitioners and the need for specific education units to address the issues adolescents regard as important. Indeed many general paediatricians do not have particular preparation that aids their development of skills required to care for adolescents (Wilcox, 1991).

6.6 Preferred health care facility

The majority of students (75.5 percent) would prefer a health care facility or clinic that was specifically for young people (chapter 5, table 5.10). As there is no such facility in the Hunter area it is doubtful that the majority of respondents to this survey had even a rudimentary knowledge of what such a facility could provide. It can therefore, be inferred that this result identifies a real need. It also means that further and more specific discussion about a specific service would be beneficial both to the young people and the providers of care. In Pletsch and Leslie’s study (1988) 84 percent indicated they would be interested in using a "teen health clinic". The significant difference in responses between the groups (p = <0.05) is due to the higher than expected females responses to "yes" and the higher then expected male responses to "no". This difference is also reflected in the responses to where the health facility should be situated.

Almost half of the students nominated the "Community Health Centre" as their preferred site, with "school grounds" the next preferred site but with only 19.3 percent choosing this option (table 5.11). It is obvious that these young people did not choose the site associated with traditional health (or illness) care, the hospital
buildings. It appears that a building in the hospital grounds would be more acceptable, at least for the female students. The reasons for the differences between the female responses for "Community Health Centre" choice and the male responses for "hospital building" choice are obscure. Perhaps the difference could be attributed to the males lack of knowledge about Community Health Centres. It could be that the girls know Womens Health Centres are frequently situated within local community health centres. It is also staff from the local centres who carry out the screening for scoliosis and administer the rubella immunizations, two activities currently aimed at the female population. Further investigation may determine other or more salient relationships between the differences in the choices of the male and female adolescent students.

6.7 Health Issues of Most Concern To Adolescents

The individual health issues were grouped into the categories used throughout this study. Overall, the category that gained the most response in answer to the question "If you sought help or advice about your health in the last year, please identify the problem" was the specific disease category (68.9 percent). It is highly likely, in view of the response to this question that "help or advice" was interpreted as "treatment". The evidence for this supposition comes from the analysis of reasons respondents sought help or advice. Thirty nine percent of the consultations were for respiratory problems (See chapter 5, table 5.14). This figure highlights a deficiency in this survey. That there was no specific statement related to respiratory disease in Part C of the questionnaire was an unfortunate error considering an increasing

The major reason given for seeking "help or advice" was "injury", which accounted for the majority of the responses (See chapter 5, table 5.14). Although it is not known exactly how these "injuries" were sustained, for example motor car or motor bike accidents, sporting injuries at school or at weekends or other injuries, the students concern about sporting injuries attracted a significant response of 49.48 percent. Other specific diseases for which help was sought included a variety of viral illnesses such as influenza, chicken pox and surgical interventions for tonsillitis and appendicitis.

When the categories were examined individually a variety of concerns were identified. Of the 46 items on Part C of the questionnaire, 23 gained a score at or higher than the computed mean, chosen as the level of statistical significance for the concerns of the students. Sexuality, mental health and social issues were the categories most frequently chosen as concerns overall.

6.7.1 Body Image

In relation to body image, the issue identified as being of most concern was having skin problems or acne. The difference between the responses of the male and female students about acne was not statistically significant but was approaching significance at $p = 0.052$ (See chapter 5, table 5.17). This finding matches the
results in almost any study previously undertaken in this area and is related to the emphasis adolescent place on personal appearance (Steinlab and Munan, 1972; Resnick, 1982; Smith, Turner and Jacobson, 1987; Marks and Fisher, 1987; Fisher, Marks and Trielllar, 1988; Pletsch and Leslie, 1988). It could also be related to the media advertisement featuring clean skinned young people who recommend various treatments for a commonly occurring adolescent problem, acne.

Twice as many girls as boys expressed a concern about problems with weight. Whilst obesity has been implicated in current or potential health problems, personal observation of the respondents by the researcher gave no indication of a majority of females being overweight, nor of having any real degree of acne! Appearance is an important factor in the development of self concept and visible changes in image such as body weight and skin problems may assume an unwarranted importance. This does not mean that the concerns are not valid, just that they may be inappropriate. Concerns about weight gain can develop into a fear of gaining a normal amount of weight, which may in turn develop into a disturbance in body image and consequently lead to an eating disorder. Education about eating, normal distribution of body weight and the unhealthy media image of extreme thinness are important issues for health education programmes directed at adolescents.

The concern about being overweight and having acne is consistent with the findings of other studies (Steinlab and Munan, 1972; Resnick, 1982; Smith, Turner and Jacobson, 1987; Marks and Fisher, 1987; Fisher, Marks and Trielllar, 1988; Pletsch and Leslie, 1988)
6.7.2 Lifestyle

The lifestyle issues that caused most concern were sporting accidents, lack of exercise and not eating the right foods, which scored higher than the selected criterion for significance, that is a mean score of 46.23. Motor car accidents came very close to this score and indicated a worry as well. It is interesting to note that the identified lifestyle issues were ranked quite highly as a concern by most students. Kulbok, Earls and Montgomery note that "adolescence is . . . measured by traditional indicators of mortality and morbidity, and yet the initiation of harmful behaviours in this phase of life may lead to premature disease" (1988:22.) The fact that many of these young people have identified these concerns is reassuring. Young people surveyed by Benedict, Lundeen and Morr, (1981); Resnick, (1982) and Perry, Griffin and Murray, (1985) indicated similar responses to concerns about lifestyle or behavioural issues.

The concern about sporting accidents is well founded in the light of previous responses, discussed in chapter 5.7.1, that indicated 26.5 percent of the respondents sought medical help for injuries. Although sport is a significant cause of injury and suggestions have been made that sport may be responsible for up to 10-20 percent of total injury costs (Egger, 1991:28), the risk of injury needs to be balanced against the benefits of physical activity. It is suggested however that 30 to 40 percent of sporting injuries are preventable (Egger, 1991). Despite the justifiable concern about sporting accidents, the respondents' expressed concerns about not getting
enough exercise were also very high. In fact the percentage of concerns expressed about sporting accidents equalled the concern about not getting enough exercise. The respondents appear to recognise the advantage of regular exercise and are just as obviously aware of the inherent dangers. What is not identified in this survey is whether the young people are aware of potentially unsafe practices during sport and exercise and if they are, do they follow the guidelines associated with the sport they are playing?

Lack of exercise and not eating the right foods are problems that have implications for adult health later and need to be addressed not only in health education programmes, but in the day to day guidance of teachers, sporting coaches and parents. It is interesting to compare the 48 percent response rate for a concern about not eating the right foods with the 87.2 percent of the students who indicated that their knowledge of nutrition and a healthy diet was adequate! (See table 5.6). It appears that half of the students who know about a healthy diet are concerned that they are not eating one!

Car accidents are more than a lifestyle issue with consequences for the future health of the adolescent. The problems and potential problems of associated behaviours can be exacerbated if a level of risk taking becomes dangerous. Car accidents were responsible for approximately 45 percent of deaths for the 15 - 24 years age group in 1989 (ABS, November 1990) and there can be a high percentage of morbidity for survivors. Driving a car (or motorcycle) is seen by many young people as an entree into adulthood. What needs to be emphasised and encouraged is the development of
safe and effective driving habits. The opportunity could be provided for the young people to participate in special driving education programmes that may lead to responsible teenage drivers and ultimately responsible adult drivers.

The female group identified more concern than the males in all of the nominated issues except cigarette smoking and drug usage (table 5.15). There was no statistically significant difference between the two groups for the latter two issues. It was expected that the male students would identify more concern about car, bike and sporting accidents and usage of alcohol but that was not the case in this survey. The figure for male deaths from motor vehicle accidents is four times higher than for females (Nucifora, Forbes and Sheehan, 1989:30 and A. B. S. 1986) yet the males in this survey expressed a concern at a considerably less degree than the female students (p < 0.005). Males may see behaviour associated with driving and driving accidents as exciting rather than a safety risk.

Franzkowiak (1988) points out that it is important to recognise that risk taking for adolescents has a definite function related to their development but health education or health promotion programmes need to take into account the young people’s own priorities and concerns. These programmes can then be tailored according to the adolescents’ needs and priorities as well as society’s concerns and expertise in dealing with these concerns.
Table 5.20 in chapter 5, shows the results for the responses about concerns related to sexuality and associated issues. The risk of AIDS was identified as causing most concern, 78.93 percent. This is the highest response rate of all the nominated concerns from the total number of categories on the survey. Sexually transmitted disease also gained a very high positive response rate overall at 70.73 percent. There was no statistically significant difference between the responses of the female and male students in identifying these concerns. This level of concern about the risk of AIDS highlights a substantial degree of awareness demonstrated by young people also supported by other studies. The level of concern about sexually transmitted disease in general is also symptomatic of a growing emphasis on sexuality and sexual health in adolescence. The acknowledgment of the vital role of health promotion programmes by health workers, health planners and educators concerning AIDS has lead to subsequent media and other campaigns directed towards the identification of risk factors and protective behaviours designed to reduce the risk factors.

This result is not surprising given the media coverage and the high priority placed on AIDS education within the state’s schools, both systemic and independent. There is now a number of AIDS Education packages for use in schools and some subjects, (particularly the key learning area of the NSW secondary curriculum, Personal Development, Health and Physical Education) address the wider issue of sexual
health. Being a key learning area this subject is mandatory for all students from Year 7 through to year 12 (NSW Board of Studies, 1990 and 1991).

Although the identification of concern appears to be positive in terms of a knowledge base, recent studies have indicated that teenagers continue to indulge in unprotected sexual activity regardless of their familiarity with risk factors (Miller and Downer, 1988; Howard, 1988; Curtis, Lawrence and Tripp, 1989; Howard, 1991; Van Beek, 1991; Kang, 1991; Calamidas, 1991). Shirley (1991) reported figures from a health service essentially provided for disadvantaged youth in a Sydney suburban area. Of the 96 percent of clients who were sexually active, 30 percent never used any protection and 55 percent sometimes used protection. Only 15 percent said they always took protective measures - defined as using a condom or insisting that their partner do so. These figures are very concerning and demonstrate that knowledge about risk behaviours is not necessarily translated into practice. The question that also needs to be asked is "Are the various education programmes relevant and meaningful to the adolescents?"

Sexual abuse was also identified as a very real concern in this study with over 61 percent of "yes" responses. Sexual abuse of young people is a worrying problem in most societies (WHO, 1989). There has been evidence of an increase in sexual abuse world wide, with the rate estimated to be about one in three or four with at least twice as many girls abused as boys (James, 1988; Oates, 1989; Moeller and Bachman, 1989; Hogarth, 1991). "Adolescent victims are at greater risk ......[than older persons] for sexually abusive assaults outside the home and physical assault by
strangers," (Moeller and Bachman, 1989:69). In many instances of sexual abuse however, the assailant is known to the victim. Education programmes and media campaigns have raised the awareness of young people towards potentially dangerous situations. There does however appear to be very few "campaigns" aimed at the perpetrators of the abuse.

The issue of abortion concerned 47.94 percent of the total sample with females constituting 67.52 percent of that group. There was no qualifying statement for this question, so there can be no judgement made about the respondents' personal stands on this matter. It is also difficult to find a reason for this high percentage of concerns. It was not expected to rate so highly in the survey. An examination of the data from each school system reveals that 43.7 percent of students from the Government system said "yes" and 56.3 percent of the students from the Independent or Catholic school system said "yes". This difference may be due to the Catholic perspective and teachings that abortion is not an acceptable means of birth control. Most sex education programmes do address the issue of choices related to the outcomes of an unplanned/unwanted pregnancy as well as choices associated with contraception. An unwanted pregnancy often leads to an abortion, although the figures for teenage abortions in Australia are not very reliable to date (Siedlecky, 1986; Learner, 1989; Weisberg, 1983). It is however noted that the rate is quite high (Howard, 1989; Raphael, 1989, Stanley and Newnham, 1989). "In 1984 in South Australia an estimated 90 percent of under 15-year-old pregnancies were terminated," (Stanley and Newnham, 1989:212). In the USA in 1984
approximately 40 percent of all teen pregnancies were terminated (Hogarth, 1991).

Part of the community's concern about teenage abortion results from the delay in seeking help till later in the pregnancy. This delay is probably due to a mixture of inexperience, shame, lack of knowledge, fear of parental response, absence of supportive partner and general anxiety and may result in the use of riskier termination procedures (Campbell, Franco and Jurs, 1988; Weisberg, 1983).

It is important for young people to consider abortion as a concern in light of the information about the deleterious consequences of possible psychiatric morbidity (Raphael, 1989; Campbell, Franco & Jurs, 1988) and the increased risk of pelvic inflammatory disease and infertility (Seidlecky, 1984; WHO, 1989). It could follow that an increased concern about an unplanned pregnancy with the need for abortion, might lead to a more serious consideration of sexual activity and the use of protective measures against both pregnancy and sexually transmitted diseases.

Becoming pregnant was a concern for 58.5 percent of the female respondents. Unfortunately the question was not asked about sexual activity and whether or not girls who were having sexual intercourse, or their partners, were using any form of contraception. There was a slight increase in the number of births to mothers under the age of nineteen in the Hunter area in 1989 and 1990 despite a tendency for a small decrease in figures in previous years (ABS, 1990). It would be sensible to
continue to monitor these figures and consider putting into place appropriate education and support facilities for the young mothers/parents.

The issue of access to contraception is a relevant factor. (Approximately 38 percent of the female respondents and approximately 19 percent of the male respondents indicated a concern about difficulty with access to contraceptive advice).

That 49.5 percent of male respondents expressed a concern about their girlfriend becoming pregnant is interesting when it is generally considered that 'double standards' exist in the community about sexual activity. The question was not asked about the sexual activity of the boys or about the use of contraception by those boys or their partners.

The gender difference in the responses comes from the female students. Of those who identified a concern 62.68 percent were female and 37.32 percent were male. Sexual abuse was not defined on the questionnaire. It was the respondents' perception of this issue that was considered important. A greater awareness of this as a concern or problem may lead the young person to attempt to avoid compromising situations or if they have experienced sexual abuse or feel themselves at risk, they may seek help.
6.7.4 Mental Health

Issues related to mental health produced a range of concerns that were obviously worrying to the respondents. Of the eleven issues requiring a response more than half accumulated a score higher than that set as being significant (46.23). The lowest response rate was for "feelings of anxiety" at 31.78 percent.

Over 50 percent of the respondents identified a concern about feeling depressed and not getting on at home. The high response rates to feeling concerned about "feeling depressed", "not getting along at home" and "emotional upsets" are most likely interrelated with the concerns "feeling bad about myself" and "thoughts about suicide" as proposed by Hurrelman and Losel, who stated that "A substantial proportion of .... problems do not manifest themselves independently of each other but are to a greater or lesser degree interrelated" (Hurrelman and Losel, 1990:9).

In a Perth study Silburn and Zubrick (1991) examined rates of attempted suicide by young people in that city and found that the main precipitating stressors were related to the relationships between the young people and their families or boyfriend/girlfriend (40 percent). Twenty eight percent had experienced a substantial degree of depression and/or grief. McLeod (1991) from Perth discovered a possible link between rapid change in social factors and depressive symptomatology in adolescents by using the Reynolds Adolescent Depression Scale. Surveying some students as part of a larger study, Brightman found that half the students had an average depression score that was equivalent to a clinical population
with mild depression (1990:448). He continued, to say that these students were found to suffer a decline in coping ability following failure and that 5 percent to 10 percent of these students would represent a group at some risk.

Low self esteem, as may be evidenced by "feeling bad about myself" (as well as other symptoms) has been implicated in suicidal ideation (Birleson, 1988; Robertson, 1989 in Vimpani and Parry; Lau, 1990; Block, Gjerde and Block, 1991; Reinherz, Frost & Pakiz, 1991; Jensen, 1991). In the last twenty years the incidence of adolescent suicide and suicide attempts has increased worldwide in both developed and developing countries (WHO, 1989, Robertson, 1989; Hogarth, 1991; Hazell, 1991). Suicide runs second after accidents as a leading cause of death among young people, aged between 15 and 19 years (Hazell, 1991; Dudley, Waters, Kelk and Howard, 1992). Given that anxiety, low self esteem and depression are implicated in most suicides (Nicol, 1990; Block, Gjerde & Block, 1991) it becomes evident that identifying these problems may help some young people avoid or deal with suicide ideation before it becomes suicide or self harm.

Whilst stressors can cause problems during adolescence that can develop into mental health problems, the episodes of self harm, or attempted suicide and suicide result in substantial mortality and morbidity for young people. Stressful events for young people, once identified, can be anticipated, considered and possibly modified to lessen any deleterious impact on their mental health.
It is well documented that girls attempt suicide more frequently than boys, due to a range of factors including their higher propensity for anxiety and depression, although they are not as successful (WHO, 1989). This survey shows that in all areas addressed, the girls answered 'yes' to concerns much more frequently than expected, thus bearing out the findings of previous studies such as those by Block and colleagues (1991); Reinherz and colleagues, (1991).

The concerns expressed by the young people in this study are a clear indication of real worry for them. Because there was no room for elaboration of these issues, it would be advantageous to repeat and extend the questionnaire to confirm these results and provide more specific information. This information could be incorporated not only into student education programmes but also in-service continuing education and health services planning for those who work with adolescents.

6.7.5 Specific Disorders

Of the specific disorders category, the problems scoring the highest percentage response rate were "cancer/leukemia", "headaches", "kidney disease" and "scoliosis" all scoring more than 47 percent.

The higher score for scoliosis could be attributed to the screening programme carried out in the schools that effects all of the female school population in the age group surveyed. Certainly there was a higher than expected response from the
female students. This is a growth related medical problem that has an approximate incidence of 1 in 1000 adolescents, with about 85 percent of cases occurring in females (Bennett, 1985; Robertson, 1989).

Both Nowotny and Robertson writing individually in Vimpani and Parry (1989) point out that although the value of the scoliosis screening programme is questioned in some areas (it is not carried out in Victoria for example) an awareness of the problem with efficient and adequate follow up is essential for correct treatment. As a condition specifically of adolescents it was included in this survey. In the USA, Litt (1982) notes one in five teenagers exhibit some form of growth related problem including scoliosis.

Why 47.83 percent of students were concerned about kidney disease is obscure and certainly unexpected. The statement was included in order to help identify the incidence of chronic disorders within the sample population and students were also asked to indicate their experience of the disease. Separations data from Hunter Area hospitals for the periods 1989 - 1990 and 1990 - 1991 indicated that 8.9 percent of the total separations for the 12 years to 20 years age group was for genito-urinary disorders. The figures from other Area Health Services were not obtained for comparison. Blum (1988) reported a prevalence rate of kidney disorders (based on Gortmaker) at 0.08 per 1000 young people. Upon reflection the inclusion of this problem was not really necessary. Should this survey be repeated, unless available epidemiological data indicate a change over time in the incidence of kidney disease in children and adolescence, it should be deleted.
The percentage of positive responses to a concern about experiences of headaches was above the identified mean at 52.2 percent. There was no distinction made between diagnosed migraine headaches and other types of headaches. The study undertaken by Weston et al (1982) in the Western Suburbs of Sydney noted that a total of 55.4 percent of respondents affirmed they had a problem with headaches. Murray and Clifford (1988) in a study conducted in Ireland found that over 30 percent complained of frequent headaches and that these and similar complaints (difficulty with sleeping) were related to a certain degree of anxiety. They noted however, that the anxiety level and the associated health behaviours did not differ from a similar study conducted in the United States of America. An early Canadian study (Steinlieb & Munan, 1972) showed that 8.9 percent of young people indicated a wish to address problems about headaches. A recent study of adolescents in Australia, by Praeger and Liebenberg (1991) indicated that 25 percent of the respondents found headaches to be a problem. This response rate placed headaches high on the list of those problems identified by more than 20 percent of the sample.

Many writers, when discussing headaches in adolescents, relate the disorder to underlying stress or anxiety. Curtis and Adams (1991) include headaches as an item in their research into a stress response scale. Robertson (1989) points out that physical complaints such as headaches may be associated with adolescent depression, a view also expressed by other writers (Radius et al, 1980; Davis & George, 1988, Ryan, 1988; Puskar, Lamb and Norton, 1990; McLeod, 1991; Reinherz, Frost and Pakiz, 1991).
All of the above studies mentioned identified a gender difference in the responses of the samples. Females report more frequent experience and concern with headaches than males. This finding was also apparent in this study with females responding more frequently than expected (See chapter 5, table 5.21). Further investigation into headaches, the possible causes and measures taken to relieve them could be advantageous particularly in light of the research undertaken by Marschall (1989). He found that adolescents report and so probably experience more physical symptoms and that these complaints correlated significantly with anxiety and depression (Marschall, 1989:214).

Cancer/leukemia was chosen instead of 'malignancies' or 'neoplastic disorders' for this survey to avoid any difficulty some respondents may have had with the terminology. The high response rate to the statement about cancer/leukemia (52.39 percent) was not expected, even though neoplasm is a major cause of death for the 15 year to 24 year age group in Australia, being second only to accidents in frequency of cause of death over all (ABS, 1984; Davis & George, 1988; Stanley & Williams, 1989).

Blum (1987) calls leukemia a 'low incidence/high morbidity disorder' and it was because of the relatively low incidence that it was thought that there would have been less concern expressed by the sample. Perhaps the community's fear of malignancy and the often described inability of the medical profession to effect a cure has been taken up by the adolescents. There has been considerable media information about the increasing evidence of malignant melanoma and also the link
between both the human papilloma virus and cancer of the cervix. The relationship between early age of first intercourse, multiple sex partners and cancer of the cervix, has been addressed in sexuality education programmes within the schools. There has also been recent media discussion about the risk of cancers as a result of nuclear accidents.

Students were asked to indicate if they had experience of the identified disorders and the results will be the subject for a further paper comparing adolescents identified concerns and experiences. However information obtained through this survey indicates that 2.4 percent of the respondents said they had actually experienced cancer/leukemia. Although it was meant to identify a personal experience, some may have had this experience through the illness of a friend or relative. The separations data from the Hunter Area Health Service hospitals indicate that neoplasms were responsible for 3.1 percent of the total separations or discharges. The figures available do not indicate if there were multiple admissions for some young people or if each record is an individual instance. The similarity of these figures suggest that the responses are accurate.

Adolescents with any chronic illness, including cancers, experience a range of problems that could become obvious to their schoolmates. These could include the effects of chemotherapy, (hair loss, nausea, weight loss, extended absences from school) as well as possible difficulties with relationships. (Balaam, 1866; Blum, 1987; Keller & Nicolls, 1990.) Once again the female students expressed more concern than the male students about the diseases of cancer or leukemia.
It is possible that what the respondents identified as "concern" was in fact fear for themselves, coupled with concern for others. This aspect needs more investigation and it is possible that information about malignant disease processes should be included in education programmes, firstly to make young people aware of specific risk factors that may predispose the onset of the disease and secondly to help them deal with fears that they may have about malignant disease, or of their own or a friend's diagnosis.

Over 43 percent of the respondents identified a concern about heart disease. Although close this result did not reach the designated score set for a significant concern, 46.23 it was quite close. It was expected that this response would be higher in light of the education programmes in schools and via the media about the risk factors and behaviours associated with heart disease. Already in this survey the adolescents have registered concerns about "lack of exercise", "not eating the right foods", "stress and tensions", and "cigarette smoking". They may not have made connections between the lifestyle behaviours and heart disease or they may not be taking any notice of health education programmes.

Weston and colleagues in their 1982 study in Western Sydney found that 11.8 percent of respondents identified heart disease as an actual problem and in the 1989 Australian Youth Survey, 1.3 percent said that heart, blood pressure or circulation problems caused them some degree of disability.
Although heart disease is not usually a major factor in adolescent ill-health, there has been a slight increase in circulatory disease as a cause of death (4.1 percent) in adolescents aged between 15 and 19 years (ABS, 1984). It is during adolescence that choices are made about behaviours that can effect the cardiovascular system during adulthood (Perry et al 1985: Blum, 1987; Marks & Fisher, 1987; Owen, Coonan & Worsley, 1989). The adolescent's 'weak orientation for the future' has to be taken into account when developing health education and health promotion programmes in order to make them more relevant to the young people. Also to be taken into account is the knowledge that "information does not change attitudes, which in turn are only loosely correlated with behaviour" (Hurrelmann & Losel 1990:13).

6.7.6 Social Issues

The four social issues on the survey (having nowhere to live, being unemployed, the threat of nuclear war and not having enough money) rated highly as concerns for the young people (see chapter 5, table 5.22 and figure 5.12) with each gaining a percentage score higher than the computed mean, chosen as indicating significance.

Having nowhere to live concerned half of the sample highlighting what is becoming a topical issue as more young people are opting out of distressing and untenable family situations each year. Robertson (1989) noted that it is difficult to be sure about the actual numbers of adolescents who are not living at home. Although there are numbers available for places sought in Government and non-Government
refuges, there are many more young people who do not seek help or shelter. A recent newspaper article (Hunter Valley Weekend, Saturday December 19th, 1992) quotes figures from a local large welfare agency report that indicates there are more than one thousand 12 to 24 year old youths homeless in the Hunter area alone. There is no doubt that homeless youth are at risk for a variety of health problems. (see chapter 3 section 6)

Around the time this survey was conducted there was a considerable amount of publicity given to the issue of homeless youth in general, and in particular to the death of a young locally well known "street kid". This may have heightened the respondents awareness of homelessness.

The female students expressed a concern more frequently than the male students, contributing to the significant difference in responses (p = <0.05). However an extensive report by the Perth Inner City Youth Service (1985) about their work with homeless youth described a predominance of males (63.7 percent) over females (36.3 percent) in the 'street scene'. A similar ratio of males to females was found in surveys undertaken by Howard (1990) and Miner (1991) in Sydney. It could have been expected, then that the male students would have identified a higher rate of concern. A concern about having nowhere to live gives an indication that the young people may be considering future situations. This particular concern can be related to the issue of the total economic environment and the possibility of unemployment and its concomitant problems.
Being unemployed is another very worrying consideration and a probable reality for some young people and is reflected in the score of 61.3 percent of the total respondents who identified a concern. This finding is consistent with the worry by and for young people in other papers (Smith et al. 1981; NSW Department of Health, 1985; Donnelly & Leeds, 1987; Connelly and Borger, 1985; Griffith, 1987; W.H.O 1989; Patton & Noller, 1990; Miner 1991). Eckersley (1989) quotes Australian and overseas studies that have linked unemployment to mental and physical ill health, suicide, drugs and crime. He states "Unemployment consistently ranks among the top concerns of Australians and young Australians in particular" (Eckersley, 1989:7). Robertson (1989) points out that the unemployment rate for young Australians has more than doubled since 1975. A study undertaken by Patton and Noller (1990) in Queensland, confirmed findings from previous studies that unemployment for young people produces clear and negative effects on self image and self esteem and contributes to their stress and depression.

Unemployment and the subsequent poverty cycle that is likely to develop, lead to the young persons loss of opportunity to develop their own abilities, personality and many of the competencies required for functioning effectively in an adult environment (Griffith, 1987:17). Davis and George (1988) cite several studies that implicate some physical health problems that are correlated with unemployment. The concern expressed by the young people in the survey about unemployment appear to be well founded particularly with the unemployment rate of 20 percent in the Hunter Region. It is important to identify this concern so that persons working with adolescents may better understand the problems they fear and may face in their
futures. "If a young person cannot gain employment ….. they are unable to achieve their economic independence, decide on an appropriate lifestyle or even achieve a social role" (Donnelly & Leeds, 1987:21).

The depressed state of the economy in rural areas leads to increased problems for young people from these areas and decreased opportunities for employment especially for girls (Carnegie, 1990). Forty four percent of the respondents to this survey come from rural areas and are probably very aware of the situations within their own families that are causing hardship! The female respondents identified a concern more frequently than did the male students. As this is a problem likely to effect girls more than boys particularly in rural areas this is an expected finding.

The threat of nuclear war or disaster is identified in studies as being a problem for many young people. It was with some scepticism that this statement was included in this survey. The scepticism was due to a personal notion that perhaps young people in Australia were removed from an immediate threat of a nuclear accident or disaster and that war (of any type) was not a major concern to young people likely to have a weak orientation to the future. This notion was dispelled with the results from this survey. Overall the response of 68.75 percent indicated this issue was fourth in total priority, with the response rate for the male and female students at 59.6 percent and 77.5 percent respectively. These results emphasize the recurrent tendency for the female respondents to express a concern about a range of topics more frequently than the male respondents.
A study reported from England by Gillies (1988) showed that of a group of students (n = 178) who were surveyed in 1984, 22 percent were worried about nuclear war. The same group of students were re-interviewed in 1986 and 37 percent admitted a worry about nuclear war, with girls expressing worry more often than boys. A similar study in the United States of America found that young adolescents and females are more anxious about the nuclear threat than older ones and males (Goldenring 1988:58). Goldenring's study showed that nuclear war is one of the three most consistent worries of adolescents. In Australia, Raphael and Lynch (1988) discussed some studies that show adolescents are concerned about the likelihood of a nuclear war as not only a possibility but regarded as likely to occur. Robertson (1989) argued that adolescents are concerned for their future and yet there is a tendency to feel powerless about such things as nuclear disaster or war.

Over 70 percent of the respondents experienced a concern about not having enough money. This high percentage gave this concern second place in the total number of concerns expressed by the respondents. The wording of this statement did not give the respondents the opportunity to indicate if their concern was for the present or their future, given that the concern about unemployment was significantly high. Hurrelmann (1991) identifies "money" as a stress for young people and states that the concern about money points to the significance of material resources in the everyday life of adolescents (1991:217). There was no statistically significant difference between the responses of the male and female students on this issue indicating that the males and females were equally concerned.
6.8 Prioritisation of Concerns

It can be seen by viewing figure 5.13 and table 5.23 in chapter 5, that the respondents considered the issues in the sexuality and lifestyle categories to concern them quite significantly. The specific organic disease category also rated highly, followed by social issues for which responses remained fairly constant at the middle point for each of the five choices making it fourth in order of priority.

Although the lifestyle category rated most highly overall (considering five choices), the sexuality category scored most points for first and second choices.

These results match those obtained from the replies to the statements about concerns for the individual items in the sexuality category. There were five concerns about sexual related issues which scored above the level of significance with three of these scoring at a level to place them in the top ten concerns. There is a definite correlation between the way the students prioritised these problems and the frequency with which they expressed concerns. This pattern indicates not only an awareness of problems and issues surrounding and surrounded by adolescent sexuality but it also indicates the importance the young people place on this part of their health and lives. These concerns by young people themselves mirror or shape the concerns other people have for them. This information should be taken seriously by those who care for, support, teach and provide health services for young people.

The items from the social issues category were identified quite frequently in the individual concerns. The score for each of the four nominated items was highly
significant. There is some obvious difference between the way the students see these issues as a concern and how they prioritise those concerns. This difference may be due to a time orientation. The issues are generally related to the future lives of the adolescents and, apart from the item about not having enough money, which could be a present as well as a future problem, are seen as remote and not currently relevant to them.

Although concerned about the issues related to the mental health as indicated by the responses to the statements from this category, mental health was not accorded high priority. There is evidence from the survey to suggest that the respondents are aware that mental health is an integral part of their personal health (see chapter 5, table 5.3 re definition of health). There was no relationship evident in these results between concern for mental health issues and the importance or relevance of these issues, for example anxiety and depression, as part of a mental and emotional health orientation. It is possible that the young people surveyed are not cognisant of the interrelationships of a number of concerns that they identified and their own physical and mental health.

Having the information about the current concerns of the young people enables planning to be undertaken for the inclusion of mental health issues in school health education programmes. The concept of mental health as a major health requirement is not specifically addressed currently although new curricula for health address the issues and factors that are part of mental and emotional health. The specific disease category contained the problems which led the majority of respondents to seek help
or advice in the twelve months prior to the survey but rated third when students were asked to prioritise their identified concerns. Problems within this category are probably the most visible for the young people at this time and also probably the most easy to resolve. There is often no real decision making for the adolescent about what treatment should or could be undertaken for their specific problems. Information about common disorders can be readily available, particularly if these are chronic in nature. The young people may not view some disorders, for example heart disease, as being relevant to them. Adolescents generally could benefit by learning more about some disorders that may effect classmates and their peers to enable them to understand the difficulties that these other adolescents may face and to enable them to be supportive.

Issues related to lifestyle behaviours gained the highest score for the prioritisation question. This category did not rate highly for first choice, but increased in priority for the rest of the five choices. Of the nine lifestyle issues identified on the questionnaire, three (accidents in sport, not getting enough exercise and not eating the right food) produced a statistically significant result (see table 5.19) that placed them in the twenty most commonly chosen concerns. It is interesting that lifestyle behaviours attracted the top priority as a worry or concern for the young people, yet it did not produce a large percentage of responses to the question about what concerns or problems led the respondents to seek help or advice in the previous year.
It is possible that young people are not aware that there is help available for their problems and concerns if they are not of a medical nature and thus obvious, or if they do know, they do not know how to access that information or help. It is more likely however that there is not enough information and help available, particularly given the wide geographical area over which this survey was conducted. Not all of the areas have a community health centre in close proximity, a youth centre, or a co-ordinated health facilities specifically for young people. Education programmes within the schools are currently being developed and implemented to address lifestyle issues.

There was no gender difference in the way students responded to the second priority choice. There were however differences between the responses of the male and female students in the way they prioritised their other choices. Overall the female students responded more frequently than statistically expected to the body image, sexuality and mental health categories for first, third, fourth and fifth choices, and the male students responded more frequently than statistically expected to the lifestyle and specific diseases categories for their first, third, fourth and fifth choices. These results indicate that there is a differing emphasis placed on specific health issues by male and female students.

The area of sexuality is one of the categories that highlights differences between the responses of males and females. The findings about gender differences in response to questions about sexuality support the findings of other studies particularly that of Carver, Kittleson and Lacey (1990). This study into sexual knowledge and
behaviours showed that the average score about knowledge for the female students was 47 percent whilst the score for the male students was 37 percent. The results from the attitude testing showed quite clearly that girls were more concerned about a range of issues than the boys. Carver and colleagues point out that their findings support the findings of other studies by Philliber and Tutum (1982) and Walleton (1987). Williams (1987) also discusses the gender differences obvious in the behaviours and attitudes of adolescents and points out that the projected media images depict males as openly sexual and assertive (often to the point of aggression). Alternatively, females are encouraged to be attractive and passive.

Mental health issues were chosen more frequently than expected by the female students as a first and fourth choice and for the individual statements about concern the female students responded significantly more frequently than the male students. The tendency for the females to express concern more than the males that has been frequently identified in studies by Benedict and colleagues, 1981; Pletsch & Leslie, 1988 and Rehfeldt, 1989 is also evident in this study.

Factors related to or leading to a breakdown in mental health are experienced more frequently by female adolescents than males (Raphael, 1989; Jensen 1991; Moran and Eckenrode, 1991). Although young males are more likely to succeed at a suicide attempt, females are four to five times more likely than males to attempt suicide (Keidel, 1983, Blum, 1987; Slap et al, 1989; Dudley et al, 1992).
Rehfeldt’s study into stressful life events for girls discovered that adolescents girls know very little about stress management and the prevention of stress or the relevance of this to health promotion (1989:58).

There is considerable evidence today that highlights increasing stressors for young people of both genders and the subsequent harm that may arise from these stressors, to cause disquiet for those who care for young people. There is an urgent need to listen to what young people are saying and to provide help and education to meet their needs. It is likely that education or support programmes aimed at adolescents should be two pronged - for all adolescents and then specifically for females or males.

The male students prioritised lifestyle issues in their five choices more frequently than expected. Lifestyle was noted in each of the five choices. This indicates a very high priority for these people. This prioritisation does not match the way the males responded to the individual statements about lifestyle issues in the earlier part of the questionnaire (See chapter 5, table 5.19). Apart from cigarette smoking and use of drugs it was the females who expressed concern more frequently than expected. An interpretation of this results that although the males do recognise the importance of these issues in their lives and a considerable number of them did identify concerns, they do not worry however, about the consequences of their behaviours as much as their female colleagues. Are males more likely to indulge in risk taking behaviour than girls? Research reported by Kulbock, Earls and Montgomery, Hamburg (1989) and others identified throughout this work indicate
that this is so. This has implications for education for healthy lifestyles, suggesting that different issues should be directed towards males and females.
CHAPTER 7

SUMMARY AND CONCLUSIONS
7.1 Introduction.

In this chapter the results obtained from the research and the points raised in the discussion of those results are summarised and reviewed in light of the overall purpose of the study (See chapter 1 section 2). Major themes identified throughout this work are discussed in relation to the research questions posed in chapter 3 section 8. The implications of these findings are explored and directions for future and further study are recommended.

Indications from this survey point to the generalizability of these findings to a wider adolescent student population. However, caution must be exercised when applying the results to other populations of adolescents (See chapter 7 section 2).

The findings reported in this study, lead to the conclusion that the major objectives and the purpose of this study have been achieved.

1. A tool to elicit or provide information about the demographic profile of the adolescent students in the area and their perceived areas of concern about health was developed, trialled and used.

2. The information provided by the survey can form a basis for recommendations about the provision of health care activities designed to meet the needs of adolescents.

3. Dependent on the achievement of the second purpose, there is the opportunity to improve the health profile of adolescents in the Hunter region in an effective and economical manner.
The demographic profile of the respondents in this study matched that of adolescents in the Hunter Area, in New South Wales and in Australia. As well, this profile correlates with the profile of respondents in a number of other studies into adolescent health and health concerns that were carried out in other countries.

The respondents' profile showed that the majority of students were born in Australia of predominantly Australian born parents. A larger than expected number of them (n = 519 or 76.9 percent) live in a two parent family, although 12.3 percent of them did not. In light of current evidence that these latter young people may be disadvantaged economically and socially, this is a worrying statistic.

The majority (approximately 93 percent) of the students had a father in employment and over 60 percent of the mothers were in paid employment. A range of income groups was identified, with a majority in middle income earning positions. There was a mixture of urban and rural post codes for home addresses. These factors, plus the male to female student ratio and the government to independent school student ratio, ensured an appropriate and effective sample. This indicates that the results obtained can be generalised to the wider, similar population of adolescent students in a similar setting - extending statewide.
7.3 Adolescents’ perceptions of health

The responses to the definition of health indicated that the majority of students recognised the interrelationship between physical, psychological and social factors. Although nearly eighty percent of the students thought their health was good compared to that of their peers, forty five percent said they always or usually worried about their health. There was some discrepancy between the responses about this item. There was a better match between the responses to the question about decreased activity due to a health problem, when eighty percent of respondents said they had no decrease. The students also said they had a good knowledge about adequate nutrition. Only 19.8 percent of respondents said they would like more information about a specific health issue and thirty eight percent said they would like more help about health generally.

The adolescents in this survey considered that they had a good knowledge about health and health related matters. They considered that compared to the health of their peer group or friends, their health was good or better. This did not stop nearly half of them from worrying about their health usually or always. Why is this so? Sixty two percent of the respondents said they did not need any further information about health issues. Yet their responses indicate that they do. Again why the mismatch? There appears to be a lack of recognition that various lifestyle factors impinge on total health. Whatever the reason, these results indicate a need for new programmes, aimed at health education and health promotion, to address particular worries. Health is important to young people and the concerns expressed later in the
survey give some guidance to the issues that should be addressed in these programmes.

Current programmes or courses within the schools need to be reviewed to ensure that they are meeting the needs identified by the students. It is not only the content of programmes that should be reviewed but the method by which such programmes are implemented. It is within the school population that the foundations and motivation for healthy behaviours can be established and the opportunity to explore options can be utilised in a reasonably controlled environment where there can be consideration of the different developmental levels of the young people. Hurrelman (1990) noted that the school is one of the most important institutions being responsible for the competent and healthy development of adolescents. School may be a major source of stress in the lives of adolescents. However it is also a major source of support (1990:225).

7.4 Sources of health advice or help

The doctor, presumably the family general practitioner, was the major source of help or advice for health related problems, with parents only as the next choice whilst friends provided the least contact for help and advice. The preparation of general practitioners to effectively assist young people is an area of current concern, as is the preparation of personnel working in hospital outpatient areas who are also persons of first contact for the young people with problems. The role of the peer
group in this situation is not clearly specified in this instance, and requires further investigation.

Whether it is actually the choice of the adolescents themselves or not, the first contact for health care is the medical profession, usually in a general practice setting. Many of the issues the adolescents expressed concerns about do not require medical treatment but education, or in fact some treatment plus education. This type of service (education plus some treatment) could be given more effectively and economically using alternative avenues and the skills of a variety of health professionals such as nurses, psychologists and social workers.

7.5 Preferred type of health facility

A health care facility specifically for young people would be used by a majority of the respondents, who preferred this facility to be situated at a community health centre or in the school grounds with services aimed at adolescents. This is a very real need in light of the unavailability of a suitable facility for adolescents in this area. Care, help and support offered by an adolescent health unit should be offered by a team of health workers, including nurses, social workers, psychologists, dentists and medical officers. Not all team members would need to be available on a full time basis, but could be employed on a sessional basis. Others could be in attendance on a permanent basis to provide continuity and cohesion to both the team and the service provision. The achievements of special adolescent units in Australia have been well recognised and the services they offer appreciated by their clients.
Adolescents themselves have identified some characteristics of the persons they prefer to consult. Personal characteristics such as kindness, friendliness, understanding, honesty and humour are more important than 'qualifications' (Hodgson, et al, 1986). An important consideration for an adolescent health care activity is the provision of services outside of the routine office hours when most young people are at school or possibly working. Access problems could arise because of inappropriate opening times and inadequate transport facilities in the area. These issues need to be taken into consideration when planning facilities.

In addressing the findings of their study, Pletsch and Leslie (1988) recommend a number of strategies to help make the establishment and maintenance of a "teen clinic" effective. These strategies include:

- the development of relationships with other services already offered in the area
- the undertaking of a community needs assessment
- the dispersal of accurate information about the services provided, both formal and informal
- the co-ordination and usage of established services
- the communication about the provision of confidential care.

Fisher and colleagues (1988) recommend an adequate referral system, into and out from the centre and they also recommend some modified form of payment for service or fee that is not compulsory, to both assist funding, and give value to the service.
Because the majority of young people are at school, consideration should be given to the establishment of youth health clinics within the environs of schools, and this was the second preferred option of the respondents in this survey. The strategies for establishing a school clinic are the same as for a free standing clinic, with the need for a co-operative effort between the Governmental Education and Health Departments. Personnel in a health clinic attached to a school could play an important role in health education.

The United States of America, Canada and Great Britain have found the provision of school based adolescent clinics or centres to be most beneficial (Stone, 1991; Mutter, Ashworth and Cameron, 1990; Nutbeam, Farley and Smith, 1990). Some Australian States (Western Australia and Northern Territory) provide school based health services and they too have proven to be well utilised and are important in meeting the needs of young people. After all the majority of adolescents are attending schools and a higher percentage of students are remaining at school longer than was the case previously.

7.6 Health issues causing the most concern

The specific disease category contained the reasons why most of the young people required help or advice in the 12 months prior to the survey. However, when the students began to identify their concerns a different picture emerged.
Every item on Part C of the questionnaire was identified as a concern to a greater or lesser degree by a minimum of 17.28 percent of the respondents. There were few findings contrary to expectations and overall the results obtained in this part of the study were consistent with the expectations about problems. This was partly because the items included were specifically chosen after a literature review helped define those problems and issues that are known to affect adolescents.

Of most concern to the respondents were sexuality, mental health and social issues, followed by specific diseases, lifestyle and body image in that order. When the respondents were asked to review the concerns that they had identified and rank them from one to five, the order of the categories became lifestyle, sexuality, specific diseases, social issues, mental health and body image.
The top ten issues of concern from all respondents in order of priority were:

<table>
<thead>
<tr>
<th>Concern</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 risk of AIDS</td>
<td>sexuality</td>
</tr>
<tr>
<td>2 not having enough money</td>
<td>social issues</td>
</tr>
<tr>
<td>3 sexually transmitted disease</td>
<td>sexuality</td>
</tr>
<tr>
<td>4 nuclear disaster or war</td>
<td>social issues</td>
</tr>
<tr>
<td>5 cancer or leukemia</td>
<td>specific disorders</td>
</tr>
<tr>
<td>6 being unemployed</td>
<td>social issues</td>
</tr>
<tr>
<td>7 having nowhere to live</td>
<td>social issues</td>
</tr>
<tr>
<td>8 sexual abuse</td>
<td>sexuality</td>
</tr>
<tr>
<td>9 feeling depressed and</td>
<td>mental health</td>
</tr>
<tr>
<td>10 getting headaches</td>
<td>specific disorders</td>
</tr>
</tbody>
</table>

The statements or questions where there was no significant difference between the responses of the male and female were: living situations; understanding and/or definition of health; self rated health status; knowledge of a healthy diet; weight and skin problems; substance use; nicotine and other drugs; sexually transmitted diseases including AIDS and financial difficulty.

All of the students responded as expected, displaying concerns that were equally distributed between males and females.

The other questions or statements produced results where there was a statistically significant difference between the male and female responses. In each case the
female students identified a concern more frequently than statistically expected to contribute to this difference.

The exception to this was seen in the last question when students were asked to prioritise their concerns. There was no difference between the way the male and female students prioritised their second choice but there were differences for the other four choices. The female students nominated sexuality, body image and mental health more frequently than expected and the male students selected issues of lifestyle and specific diseases more frequently than expected as shown in the appropriate tables.

Benedict and colleagues (1981) have noted the tendency for female adolescents to report health concerns more frequently than males and suggest that

"middle adolescence may be the key developmental period where girls are significantly starting to report increased numbers of health concerns and utilize the medical care system to a greater extent than boys" (1981:244).

This has been found by others researching in this field (Radius and colleagues, 1980; Weston and colleagues, 1982; Smith and colleagues, 1987; and Froman and Owen, 1991) who also identified the trend for females to express concerns more often than the male adolescents. The reason for this could be related to the evidence that females generally enter puberty earlier and therefore mature earlier. There is also frequently a societal expectation that males are confident and knowledgeable and admitting a "concern" may be interpreted as lack of "maleness".
The students who responded to this survey identified issues related to sexuality as being of particular concern to them. These results mirror those of other surveys and indicate an area in which adults, including some parents and teachers, are not always comfortable, have difficulty discussing and giving advice to their children and students.

Because it is often difficult to gain accurate and detailed sexual background information from an adolescent, Laube (1982) suggests that health professionals should be well prepared to deal more effectively with adolescent sexuality. They would then be better equipped to initiate and direct care in a trusting environment. Sexual abuse, risk of sexually transmitted diseases and unplanned pregnancy are serious problems and often the most difficult to communicate.

Those people teaching adolescents about sexuality need also to be well prepared to cope with the special needs for information that these young people identify. Young people themselves have identified the type of person they prefer to teach them about sexuality. Szirom (1987) points out that consistent with other studies the results she obtained from a study in Victoria showed that students wanted sex educators who were "caring, understanding, able to relate, comfortable, relaxed and not embarrassed" (1987:34). In addition the students wanted the information presented by someone with knowledge, qualifications and experience.

The other major areas of concern were related to lifestyle and social issues. The inter-relationships among a range of health habits, risk behaviours and social or
leisure activities, has been identified by writers including Perry and colleagues, (1985); Marks & Fisher, (1987); Raphael, (1989); Whatley, (1991). Marks and Fisher (1987) observe that screening for health risk behaviours is a crucial part of any well adolescent checkup regardless of the fact that many health professionals do not address this aspect of the assessment procedure.

Dealing with adolescent negative health behaviours is not easy, particularly as Fromen and Owen (1991) reiterating Elkind, point out, that the adolescent stage of egocentrism can make it difficult for the adolescent to really understand the link between current behaviour and consequences later in life (1991:182). Sprunger and Pellaux (1989) note that far too many young people are victims of harmful health habits, possibly as a result of negative peer pressure and a lack of skills necessary to successfully negotiate the transition from childhood to adulthood. They say that patterns of harmful behaviour lead to a variety of problems and they stress the need for the young people to develop positive social behaviours. Activities that help to decrease current and possible maladaptive health behaviours and reduce the risk taking inclination that occurs in adolescents can be introduced early in the child’s education and reinforced throughout the adolescent period (Whatley, 1991:148). Addressing and identifying positive adolescent health behaviours is an urgent need. The study by Radius and colleagues (1980) showed that 60 percent of the respondents had not made the link between their behaviours and the possible resulting outcomes.
There may not be very much that can be done to address the expressed concerns about social issues particularly in the current socio-economic climate. What can be done however, is to raise the awareness of funding bodies and service providers to the young people's social needs. These needs are frequently related to developmental tasks of adolescence such as striving for independence and seeking economic and social stability.

Being unemployed rated very highly as a concern. Hurrelmann and Losel (1990) point out that for decades employment has been a decisive and symbolic step into adulthood and that if this step into this aspect of adulthood cannot be taken, we deprive adolescents of the social foundations of a healthy personality development (1990:17). The study by Patton and Noller (1990) from the University of Queensland supports the notions of other researchers that there are evident and consistent negative effects of the experience of unemployment for young school leavers. These effects include a significant decrease in the self-image of the young people and negative psychological consequences.

Because other social issues about which the respondents were concerned are directly or indirectly related to unemployment, it becomes clear that within the existing depleted job market a different educational direction should be taken. Where once students in the school system were prepared for career choices and almost certain employment, more courses should now be directed to specific and effective "life survival skills". Some schools have already established such programmes.
Mental health issues were chosen as a concern quite frequently but not prioritised highly. Adolescents generally do not have a good knowledge or understanding of mental health issues. Jensen (1991) points out that it is usually the concern of parents or teachers rather than the young people themselves, that result in consultations for mental health problems. Jensen continues to emphasise that various life stressors have been shown to correlate with depression, suicidal behaviour, need for mental health services, general psychological impairment and poor academic performance (1991:6).

Because the issues defined as mental health were not prioritised in the same ratio as concerns expressed, there appears to be a need for education to enable young people to more readily see mental health as an inseparable part of health generally. The behaviours that adolescents can use to cope with stressful life events need to be positive rather than negative (self-harm) behaviours. The aim should be towards prevention of problems or at least the reduction of the deleterious effects that occur as a result of these problems.

7.7 Limitations

Although this study makes an important contribution to the establishment of a data base of information about the health perceptions of adolescent students in the Hunter Region, there are some limitations in generalising this information to all adolescents in the region. Other studies cited in chapter 3 of this work indicate that it is the adolescents who have left school or who do not attend when they should, that have
the highest risk of psycho-social problems. Also, they have a higher risk of contracting diseases resulting from unsafe behaviours.

According to Kohen-Raz (1988), potential sources of bias in experiments, surveys and observations of adolescents are those factors that are linked with socio-economic and political stress and pressure such as an economic crisis, a state of local or distant warfare or a natural disaster which may coincide with the time of conducting the research or more frequently which may have occurred during the informative years of the investigated subjects lifespan (Kohen-Raz, 1988:119). If such a bias existed in this study, then all or a large majority of the respondents were exposed to the same factors, as the survey was undertaken within a three week time-frame.

7.8 Implications for Nursing

What are the implications for nursing that arise out of this study?

Emphasis has been given throughout this work to the importance of effective and appropriate health education and health promotion for adolescents. An even greater emphasis should be placed on the education and preparation for nurses who are going to care for adolescents. This care can be undertaken in a variety of settings. Such settings may include general hospitals, psychiatric hospitals, community health centres, mainstream or specifically for young people, schools, drop-in centres, prisons, industry, maternity units, on the street, in mobile vans, in fact any location where young people are to be found. In some cases adolescents may approach personnel for their health care problems or even advice. In other cases the health
care personnel may have to go to the young people in their own particular environment. Only those people who are well aware of the various needs of young people, the implications of their particular stage of development and who are genuinely interested in adolescents should aim to help, support or treat them. The education and preparation for nurses could be part of a wider educational preparation or in courses specifically designed to address those special adolescent needs.

Nurses should be part of a team of health workers with special interest and skills in caring for young people. Because of this, the ability to work with other health professionals, to share ideas and to manage case loads is extremely important. Frequently the role of the nurses is one of co-ordination and referral. This necessitates an up-to-date, working knowledge of the services currently available and the establishment and maintenance of effective communication networks. Nurses should be able to relate to adolescents on their own level in order to communicate their needs to the health care team.

It is important that nurses are skilled in assessment procedures. It may be that an effective assessment of a young person’s health and behaviours can identify potential problems. This allows measures to be implemented to avoid and lessen maladaptive behaviours and various crises.

The development and implementation of health education and health promotion programmes are skills most nurses already have and it is important that they be given the opportunity to further develop and maintain these skills. The maintenance
and evaluation of such programmes can lead the nurses to be change agents in the area of adolescent health. Inherent in the requirement for the provision of adequate and expert care for adolescents and the necessity to give direction to education and treatment and support strategies, is the urgent and serious need for research to be undertaken into the myriad issues surrounding adolescent health care. This study is one such beginning.
7.9 Summary

The theoretical framework for this study (see chapter 2 section 6) identified various factors that contributed to positive or negative health behaviours that in turn could lead to health or health breakdown in the individual. The framework also illustrated interventions that could be implemented to either reinforce positive health behaviours, or change negative behaviours to assist in the individual's health status. It was also noted within the framework that the health behaviours could in turn have an effect on those factors that contribute to health.

The application of this theoretical framework to the present study resulted in the acquisition of information about the factors contributing to health and behaviours influencing health. The interventions described (health education, health promotion, support and or treatment) are not explored in this particular study. However from the information obtained, strategies could be planned and developed to address these components of the framework.

The purpose of this study was to identify the health needs of adolescents in the Hunter Region as identified by adolescents themselves. Once these health needs were identified, strategies to maintain or improve the health profile for the young people of the area could be constructed. It was anticipated that the information obtained could provide a knowledge base on which to build better and more effective health service provision, health promotion activities and health education. In order to achieve these goals a survey tool was developed. This tool addressed the
demographic profile of adolescents currently attending randomly selected schools throughout the Hunter Region. It provided the students with the opportunity to express their perceptions of health and enabled them to identify issues about health that personally concerned them. The tool was effective in so far as it was a vehicle for obtaining the required information.

If the tool were to be used again to ascertain similar information it would require some modification. The tool was designed to produce a data base. It did not ask the respondents to provide reasons for their answers, nor did it ask about specifics. An example is the statement about usage of drugs. There was no opportunity for the respondents to choose from a list of specific drugs, nor was there the opportunity to identify how often various drugs were used. Answers to an extended statement about drug usage could have lent direction for targeted education programmes.

The tool was originally designed and administered to obtain information that would enable a comparison to be made between the expressed concerns of the adolescents and their identified experience of those issues for which they did express concern. It was after the collection of data that the decision was made to report only on the "concerns". An examination of the relationships between the expressed concern and the experience of various health problems as identified by this survey will be possible in the future using the available data.

The results of this study support the findings of previous studies into the health needs and concerns of adolescents and the writings mentioned in the literature
review. These results contribute to the existing knowledge about adolescents in general, but more importantly they contribute knowledge not previously obtained for the Hunter Region. This information will be useful in indicating areas for further research and identifying areas where young people themselves currently identify problems and issues of concern.

The young people have identified a range of problems and concerns that cannot be looked at in isolation. The interrelatedness of all aspects of health has long been recognised. As in previous studies there is an emphasis on psycho-social issues which are often the most difficult to address. Notwithstanding a gap between the needs of young people and the existing services, and the many issues needed to be resolved in understanding how specific inter-governmental policies about programmes and funding are developed, priorities for care must be developed and programmes implemented according to current needs.

Unfortunately many of the current adolescent health programmes are focussed on the dramatic situation of the adolescent already in some type of crisis, rather than on early prevention and in the promotion of healthy adolescent development as stated by Hamburg (1989). Hamburg continues with the warning that better efforts at effective, caring strategies have been plagued by professional divisions among health, education and social services systems and by the lack of communications among people engaged in each of the problem domains.
7.10 Recommendations

There are a number of recommendations arising out of this research. These recommendations relate to various aspects of the findings and are listed below.

1. The first recommendation about future research is that the study be repeated in a different geographical area to identify commonalities and differences between the two populations. It is also important to survey those adolescents not currently attending school.

2. Because the survey was extensive and looked at a broad range of issues, the second recommendation is that specific areas be chosen from the survey to be modified and extended and then repeated. This would provide the focus for an in-depth study of a particular topic, for example, mental health of adolescents, accident prevention or teenage pregnancy.

3. The third recommendation is to not just incorporate the needs and concerns of young people into planning for health, social and recreational facilities, but to involve young people themselves in both planning and implementation of services and facilities. The adults providing the service and the young people needing or using the service need to work together to establish open and effective dialogue and rapport.
4. It is also important to encourage medical practitioners and other first contact health personnel, especially nurses to become adequately prepared and better equipped to deal with the physical, emotional and social needs of adolescents. Special emphasis should be to given issues related to sexuality and health risk behaviours. The fourth recommendation then is to ensure that strategies for achieving effective education and support programmes are available for all health care workers.

5. It is further recommended that consideration be given to the differences between the needs identified by male and female adolescents when planning and offering education and services. It might be more effective in some instances to develop health education programmes that target males and females separately. The effectiveness of combined classes should not be overlooked however, as this gives each group the opportunity to share ideas, problems and suggested solutions with each other. A balance between combined and segregated classes appears to be the most sensible way to proceed.

6. New or different approaches to education should be explored and existing health education programmes for young people be reviewed. It is extremely concerning that a review of literature about adolescent health from as early as 1968 (Alexiou & Werner, 1968) till the present, reveals remarkable similarities with the problems and concerns identified. Marvin Powell's paper, 'Twenty five years of Adolescent Problems' contains the following statement. "Major problems of high school attending youth remain relatively similar over time, even though many other
problems reflect the culture as it exists at the time of a given study" (1987:5). Some problems need to be addressed individually. New and creative ways of designing health promotion programmes should be explored so that these programmes become more effective in addressing the needs of young people. There is much work going on in this area at the present time and a critical assessment of the outcomes of such programmes is vital. Whether the particular programme is aimed at increasing self esteem to help make decision making easier, or teaching problem solving techniques, or is disease oriented, or is aimed at risk reduction or is health oriented, or has a primary health care focus or sets out to strengthen health enhancing behaviour and so on, it must meet the needs of the young people and be the best for their developmental psycho-social, emotional and cognitive levels.

7. An important recommendation arising out of this study is for the establishment of several free standing adolescent health clinics throughout the Region. Each of these centres need not be operating on a full time basis. A survey to establish a need should be undertaken, then hours to respond to the identified needs could be established. There is ample evidence that such facilities are very helpful for young people, are economical in terms of service delivery and can help in the training of health care workers. Consideration could be given to school based clinics.

8. It is further recommended that there be an co-ordinating agency for all of the services currently available for young people in the Hunter region. Effective communication networks should be set in place so that these services could be
utilised by more young people, regardless of their geographical location, social or economic situation and original information source.

Hamburg (1989) has defined some changes that take place during the adolescent period. These changes are:-

- the lengthening period of adolescence
- the disjunction between biological and social development
- confusion in young minds about adult roles and difficulty in foreseeing the years ahead
- the erosion of family and social support networks and
- the easy access by adolescents to potentially life threatening mechanisms, substances and activities

which require consideration when planning and implementing support programmes for adolescents.

Hamburg (1989) emphasized that adolescence, as the critical passage from childhood to adulthood, deserves careful patient attention and responsible innovation.

This research was undertaken to inquire into the health, ideas about health and possible problems of adolescents, particularly those attending schools in the Hunter region. It is highly likely that the ideas and problems identified through this study are the same for adolescents throughout the country particularly for those attending school. Some questions have been answered, and underlying premises have been
confirmed. There are however, some questions, the answers to which raise additional issues that require further elaboration and investigation. The issues raised throughout this paper therefore, could be used to give direction for further studies into the health and health needs of adolescents.
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Thank you for agreeing to complete this questionnaire. This questionnaire is voluntary, and anonymous. No names need be written on the paper.

Many young people have concerns about their health and the information obtained from this survey will help health care providers better understand your needs and help plan to meet those needs in the future. Your time and interest are appreciated and your opinions are valuable.

If you have any questions about any of the statements please ask me.

MARGO NANCARROW R.N. Dip Teach (N) B.Ed.
(M.Nursing (Hons) Student)
University of Wollongong

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259
PART A

Please read each question then either circle the number of the appropriate response or record your answer in the space provided.

1. How old are you?
   - 11-13 years 1
   - 14-16 years 2
   - 17-19 years 3

2. What sex are you?
   - M 1
   - F 2

3. Please write down the postcode of the suburb where you live
   ........................................................

4. (a) Where were you born? (What country?)
   ........................................................

4. (b) Where was your father born? (What country?)
   ........................................................

4. (c) Where was your mother born? (What country?)
   ........................................................

5. What is the main religion in your household?
   - Protestant 1
   - Catholic 2
   - Non Christian 3
   - Nil 4
   - Other........................................ 5
      (please specify)

6. With whom do you live?
   - Both parents 1
   - Mother only 2
   - Father only 3
   - Mother/Stepfather 4
   - Father/Stepmother 5
   - Other (please state) 6

   ........................................................

7. Please write down your father's occupation or if unemployed write unemployed.
   ........................................................

8. (a) Does your mother work outside the home?
   - No 1
   - Yes 2

8. (b) If yes what is your mother's occupation?
   ........................................................
PART B

Please circle the number that best describes your answer to the following statements.

Here is an example.

'Sport is an essential part of a school programme'

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

By circling Number 3 you have told me that you agree that sport is an essential part of a school programme.

There is also space for you to write additional information in some places.

9. Which of the following statements best describes your understanding of health.
   (a) Health is the absence of disease or disability 1
   (b) Health is being physically fit 2
   (c) Health is a state of complete physical, mental and social well being. 3
   (d) Other (Please specify).............................................................. 4

10. Compared to the health of other young people your age, how would you rate your own health? (circle the number that best describes your answer)

<table>
<thead>
<tr>
<th>Poor</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair</td>
<td>2</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
</tr>
<tr>
<td>Excellent</td>
<td>4</td>
</tr>
</tbody>
</table>

11. How often are you concerned or worried about your own health status?

<table>
<thead>
<tr>
<th>Always</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually</td>
<td>2</td>
</tr>
<tr>
<td>Seldom</td>
<td>3</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
</tr>
</tbody>
</table>
12. Is your activity decreased because of any illness or disability? Yes 1

No 2

13. If YES can you identify the problem?


14. How many times did you seek help/advice on a health problem in the last year?

<table>
<thead>
<tr>
<th>Times</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 6 times</td>
<td>1</td>
</tr>
<tr>
<td>5-6</td>
<td>2</td>
</tr>
<tr>
<td>3-4</td>
<td>3</td>
</tr>
<tr>
<td>1 or 2</td>
<td>4</td>
</tr>
<tr>
<td>None</td>
<td>5</td>
</tr>
</tbody>
</table>

15. Where did you go for your help/advice about your health problem? (You may mark more than one item)

- Doctor 1
- Hospital/outpatients 2
- Clinic 3
- Chemist 4
- Friends 5
- Parents 6
- Other 7

If you marked "other"
please specify ............................................................

16. If you sought help/advice about your health in the last year, please identify the problem or problems you had.


17. Do you clean your teeth on a regular basis?

- No 1
- Yes 2

18. How often do you clean your teeth?

- 2 times a day 1
- 1 a day 2
- every second day 3
- other (please specify) 4
19. How many times did you visit a dentist or Dental Clinic in the last year?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 4 times</td>
<td>1</td>
</tr>
<tr>
<td>3 - 4 times</td>
<td>2</td>
</tr>
<tr>
<td>1 or 2 times</td>
<td>3</td>
</tr>
<tr>
<td>None</td>
<td>4</td>
</tr>
</tbody>
</table>

20. If you attended for dental treatment in the last year please identify the reason:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. Do you wear spectacles or contact lenses to help your eyesight?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
</tr>
</tbody>
</table>

22. My knowledge about nutrition and what constitutes a healthy diet is adequate.

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>4</td>
</tr>
</tbody>
</table>

23. I need more information and knowledge about my general health.

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

24. I need more information and knowledge about a specific/special health problem.

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

25. Can you identify this problem?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

26. If there was a health facility or clinic specifically for young people would you use it?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

27. Where do you think such a health facility should be situated?

<table>
<thead>
<tr>
<th>Location</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Building</td>
<td>1</td>
</tr>
<tr>
<td>Hospital Grounds</td>
<td>2</td>
</tr>
<tr>
<td>Local Health Centre</td>
<td>3</td>
</tr>
<tr>
<td>School Grounds</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

If "other" please write where:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following questions are designed to assist in identifying specific areas of health that may cause some concern to young people. You may have already experienced some of these concerns.

Please indicate those areas about which you are concerned and those you have experienced yourself by placing a circle around the appropriate response.

<table>
<thead>
<tr>
<th>I am concerned about</th>
<th>I have experienced</th>
<th>Office Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>28. Problems with weight (too thin)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>29. Problems with weight (too fat)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30. Skin problems e.g. (acne)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>31. Unwanted facial/body hair</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>32. Not getting enough exercise</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33. Difficulty with sleeping</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>34. Not eating the right foods</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>35. Dental problems</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>36. Drinking too much Alcohol</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>37. Cigarette smoking</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>38. Use of drugs</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>39. Motor car accidents</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40. Motor bike accidents</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>41. Accidents in sporting activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>42. Problems with sexual development</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>I am concerned about</td>
<td>I have experienced</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>43.</td>
<td>Adequate sex education</td>
<td>1 2</td>
</tr>
<tr>
<td>44.</td>
<td>Problems with periods (Girls)</td>
<td>1 2</td>
</tr>
<tr>
<td>45.</td>
<td>Difficulty with access to contraception advice</td>
<td>1 2</td>
</tr>
<tr>
<td>46.</td>
<td>Becoming pregnant (Girls)</td>
<td>1 2</td>
</tr>
<tr>
<td>47.</td>
<td>My girlfriend becoming pregnant (Boys)</td>
<td>1 2</td>
</tr>
<tr>
<td>48.</td>
<td>Sexually transmitted disease</td>
<td>1 2</td>
</tr>
<tr>
<td>49.</td>
<td>Risk of A.I.D.S.</td>
<td>1 2</td>
</tr>
<tr>
<td>50.</td>
<td>Sexual abuse</td>
<td>1 2</td>
</tr>
<tr>
<td>51.</td>
<td>Abortion</td>
<td>1 2</td>
</tr>
<tr>
<td>52.</td>
<td>Not coping with stress/tension</td>
<td>1 2</td>
</tr>
<tr>
<td>53.</td>
<td>Feelings of anxiety</td>
<td>1 2</td>
</tr>
<tr>
<td>54.</td>
<td>Emotional upsets</td>
<td>1 2</td>
</tr>
<tr>
<td>55.</td>
<td>Feeling good about myself</td>
<td>1 2</td>
</tr>
<tr>
<td>56.</td>
<td>Not getting along at school</td>
<td>1 2</td>
</tr>
<tr>
<td>57.</td>
<td>Feeling depressed</td>
<td>1 2</td>
</tr>
<tr>
<td>58.</td>
<td>Thoughts about suicide</td>
<td>1 2</td>
</tr>
<tr>
<td>59.</td>
<td>Not getting along at school</td>
<td>1 2</td>
</tr>
<tr>
<td>60.</td>
<td>Not getting along at home</td>
<td>1 2</td>
</tr>
<tr>
<td>61.</td>
<td>Not getting along with friends</td>
<td>1 2</td>
</tr>
<tr>
<td></td>
<td>I am concerned about</td>
<td>I have experienced</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>62.</td>
<td>Not being able to talk to my parents</td>
<td>1</td>
</tr>
<tr>
<td>63.</td>
<td>Heart disease</td>
<td>1</td>
</tr>
<tr>
<td>64.</td>
<td>Diabetes (sugar)</td>
<td>1</td>
</tr>
<tr>
<td>65.</td>
<td>Cystic Fibrosis</td>
<td>1</td>
</tr>
<tr>
<td>66.</td>
<td>Scoliosis (curvature of the spine)</td>
<td>1</td>
</tr>
<tr>
<td>67.</td>
<td>Cancer / Leukemia</td>
<td>1</td>
</tr>
<tr>
<td>68.</td>
<td>Kidney disease</td>
<td>1</td>
</tr>
<tr>
<td>69.</td>
<td>Epilepsy (fits)</td>
<td>1</td>
</tr>
<tr>
<td>70.</td>
<td>Getting headaches</td>
<td>1</td>
</tr>
<tr>
<td>71.</td>
<td>Being unemployed</td>
<td>1</td>
</tr>
<tr>
<td>72.</td>
<td>Having nowhere to live</td>
<td>1</td>
</tr>
<tr>
<td>73.</td>
<td>Not having enough money</td>
<td>1</td>
</tr>
<tr>
<td>74.</td>
<td>Nuclear disaster or war</td>
<td>1</td>
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</tbody>
</table>
Now that you have identified your health concerns (from questions No. 28 to 74) please review the list and write down the five problems that concern you the most.

List these problems in their order of importance to you. You can use the number beside the problem if you wish.

1. ........................................................... most important
2. ...........................................................
3. ...........................................................
4. ...........................................................
5. ........................................................... least important

Thank you for your participation.

MARGO NANCARROW
Dear Principal’s name ~,

I am currently undertaking a Master of Science (Hons) degree through the University of Wollongong. The title of my thesis is *Adolescent Health in the Hunter Region*. My study is designed to elicit information about the actual and perceived health needs of young people attending a variety of High Schools in this region.

In order to complete this study I am seeking access to some Year 8, Year 9 and possibly Year 10 students who could complete the questionnaire. Your school has been randomly chosen from a list of local High Schools for participation in this study should you agree to my proposition.

Attached is a copy of some background information about the proposed study that I have forwarded to the Catholic Education Office. This document provides more detailed information about this proposed study including an estimate of your time, some teacher’s time, and the time it should take the students to complete the questionnaire. The questionnaire would be administered by myself and/or some helpers and there would be no cost to the school apart from the time factor. The results of the survey will be communicated to those schools taking part in the exercise. I would welcome the opportunity to talk to you about the project and will phone to ascertain your availability within two weeks.

I look forward to meeting with you.

Yours sincerely,

Margo Nancarrow
The Principal
School ~
Address ~

Dear Principal's name ~,

I am currently undertaking a Master of Science (Hons) degree through the University of Wollongong. The title of my thesis is *Adolescent Health in the Hunter Region*. My study is designed to elicit information about the actual and perceived health needs of young people attending a variety of High Schools in this region.

In order to complete this study I am seeking access to some Year 8, Year 9 and possibly Year 10 students who could complete the questionnaire. Your school has been randomly chosen from a list of local High Schools for participation in this study should you agree to my proposition.

Attached is a copy of the "Application to Conduct Research in NSW Departmental Schools" that I have forwarded to the appropriate personnel. This document provides more detailed information about this proposed study including an estimate of your time, some teacher's time, and the time it should take the students to complete the questionnaire. The questionnaire would be administered by myself and/or some helpers and there would be no cost to the school apart from the time factor. The results of the survey will be communicated to those schools taking part in the exercise. I would welcome the opportunity to talk to you about the project and will phone to ascertain your availability within two weeks.

I look forward to meeting with you.

Yours sincerely,

Margo Nancarrow
Dear Parents,

I am a Lecturer in the Department of Nursing Studies at the University of Newcastle. I am currently undertaking studies for a Masters of Science (Honours) degree through the University of Wollongong.

I am very interested in the health and well being of the young people in this region. This is why my study is aimed at establishing the specific health needs and concerns of the young people as they themselves identify them.

In the next few weeks I am planning to carry out a survey of students to obtain information that will help to develop health education programmes and better health services for our young people.

I am seeking your permission to allow your child to take part in the survey. There will be no names written on the questionnaires and no individual student will be identified so that complete privacy and anonymity can be maintained. Participation in the survey is entirely voluntary and students may choose to take part or not to take part as they see fit.

Could you please complete the attached form and return it to the school to indicate if you do not wish your child to participate.

I thank you in anticipation of your support for this project.

Yours sincerely,

MARGO NANCARROW, R.N

re: Student Health Survey

I have read the above letter and do not give permission for my child ..................

........................................ of class .............................. to complete the survey questionnaire.

Signed .......................................................... Parent/Guardian
APPENDIX 5

Percentage of students identifying concerns by gender and total in order of priority.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PROBLEM</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL SAMPLE</th>
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<td>STD</td>
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<td>Nuclear Disaster or War</td>
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