AN ANALYSIS OF NEW ZEALAND SUICIDE ATTEMPTS IN 1980 - 1988

A thesis presented in partial fulfilment of the requirements for the degree of Master of Science in Statistics at Massey University, New Zealand

Ming Yik Tan

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ABSTRACT

Suicide attempts have been of concern throughout the world especially in youths so that a study of the distribution of these acts is important and necessary. The aim of this thesis is to study the influence of certain demographic variables on suicide attempts.

The New Zealand Morbidity Data were merged with Population Census Data to obtain frequencies and rates of suicide attempts for subgroups of the population. The data were displayed in different ways to find the affect of various demographic variables such as sex, age, race, method of attempt, length of stay in hospital and geographical area. These variables were examined singly and jointly to reveal possible interactions.

The graphs and tables produced provided some confirmation of trends noted in the literature, namely that attempts were high for females and for adolescents but males tend to dominate the cases of successful suicide. Reasons for these differences are explored.

This study did not confirm the belief that suicide attempts are correlated with population density. The influence of time of year was examined and there was shown to be a trend of increased attempts in the warmer months.

The two sets of morbidity data, 1980 and 1988, enabled comparisons to be made over time.

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Introduction

1.1 Background

A study of the distribution of acts of suicide or attempted suicide is important and relevant as it is one of the leading causes of death in most countries. For young people in New Zealand in 1987, it was the second highest cause of death (Mortality and Demographic Data in 1987). In New Zealand in 1988, 3130 instances of attempted suicide were recorded which represented a rate of 9.33 per 10,000 head of population. In this study, only the second category, namely attempted suicides, will be examined in detail.

Acts of suicide or attempted suicide are a common occurrence throughout the world. The death rates by suicides in thirteen selected countries in 1987 are listed in Table 1.1.

In recent years, concern has been expressed at the increase in the number of suicides particularly among teenagers. Suggestions have also been made that 'cluster suicides' or a 'suicide virus' occur amon young people when there is an increase in teenage suicides spurred by suicides committed by their peers. This study, will not be able confirm or contradict these suggestions, but the distributions of suici attempts over ages, sex and geographical areas will be.

Table 1.1 The Death Rates by Suicide in the Selected Countries.

COUNTRY	RATE PER 100,000
AUSTRALIA	12.4*
AUSTRIA	27.3
BULGARIA	16.6
HONG KONG	11.0
HUNGARY	45.1
ICELAND	14.6
JAPAN	19.5
NEW ZEALAND	13.8**
NORWAY	15.5
POLAND	13.3
SWITZERLAND	24.1
UNITED KINGDOM	7.9
YUGOSLAVIA	17.2

NOTE:
* The suicide rate of Australia is for 1986.
** The suicide rate of New Zealand in 1987 was estimated from the information obtained from "New Zealand Pocket Digest of Statistics, 1991" and "Monthly Abstract of Statistics, November, 1990".
Rates of other countries were obtained from "1988 Demographic Yearbook, United Nations.

Are the frequencies and rates of suicide attempts constant for people of different ages or different geographical areas? Are they the same for males as for females? Do the methods of suicide attempts vary with age, gender or other demographic or geographic variables? In the following chapters, answers will be sought to questions such as these.

Furthermore, are the rates of suicide attempts increasing over time? Data for the years 1980 through 1988 will be examined to determine whether certain trends are evident.

1.2 Some Findings on Suicide and Suicide Attempts in the Literature

"There is good reason to believe that attempted suicide is a common and increasing problem in all Western countries" (Edwards, 1968). For many years, studies have been carried out to produce pictures of the reasons why suicide attempts occur and to contribute in some way to the prevention of these acts. Many differences between the sexes, method preferences, frequent of attempts varying among ages, areas and many other variables have been observed. In this section, some findings of those studies in the literature will be reviewed.

"Was it a serious attempt? This is a question immediately asked in every case by everybody who gets to know about the attempts" (Goldney, 1981). It has always being difficult to judge the intention behind the act. This was referred to by Dorpat in 1967 who noted that "Most investigators agree that even the suicide gesture should be considered a 'cry for help' which, if ignored, may later lead to more serious and lethal self destructive behaviour". Also, there is always some confusion between suicide attempts and accidents so that there are possibilities of errors occurring in the recorded database. Connell (1972) indicated this in saying "Most authorities agree that published figures for childhood suicides are underestimated and that many masquerade as accidents".

Faigel (1966) noted that "Suicide is rare in childhood, but becomes common during adolescence". Hawton (1986) made a similar point in saying that "Suicide among children is very rare, whereas among adolescents the incidence of suicide is a significant problem, with rates increasing markedly throughout the teenage years".

Many studies have shown a disturbingly high number of suicide attempts among young people. Holinger (1977) noted that "Suicide is the second or third leading cause of death in adolescence in many Western countries" Antoniadis (1988) supported these findings in saying "Overseas studies show that the greatest percentage increase in European countries has occurred among the young of both sexes. In the United States, increases in suicide among the young have also been reported". In 1972, Connell noted some possible reasons for the high number of suicide attempts from the young group could be due to unsatisfactory relationships with parental figures, unstable homes with an excess of physical violence, inability to express overt aggression in an atmosphere of family hostility and the pressure from school work.

Beside the high risk group of the young, concerns are also needed for the aged as Antoniadis (1988) noted that "Although the trends in suicide rates among the elderly have not changed much, the rates have been consistently high over the years, particularly among men". An indication that the aged are more likely to make second attempts was given by Gage (1971) when she noted that "Suicide attempts in the over 60 age group are not idle gestures. They must be looked at and worked out, or the person may attempt it again". Antoniadis (1988) mentioned that loneliness, social isolation and bereavement can contribute to suicide, especially among the older age-group". Wilson (1981) noted in the study that older people complete suicides more frequently than younger people and this could be due to a number of factors. Among these might be physical isolation, which makes being found and given aid less likely. Older people may have more intention to commit suicide because of their social, psychological and physiological states.

"It has, of course long being known that the suicidal behaviour of men and women is very different although the reasons for this difference are unclear" (Gove, 1972). Davis (1968) said that "One consistent finding in studies of suicide is that more men than women commit suicide, while more women than men attempt it" and this was supported by Lester (1970) in saying that "In a wide variety of populations it is found that males commit suicide more than females whereas females attempt suicide more often than males".

Lester (1969) and Wilson (1981) had a common finding that "Females self-injure more frequently than males and males complete suicide more frequently than females". Kessler and McRae (1983) noted that "For many years, unsuccessful suicide attempts were assumed to be instances of suicide that failed more because of method than motivation". Perhaps, the method is one of the main factors in explaining the difference as Linehan (1973) pointed out that "One common explanation of the sex difference in both types of suicidal behaviour is that males use more lethal methods and therefore they are more successful". The difference between sexes in the method used was also noted by Davis (1968), "Investigations of both suicide and attempted suicide show that relatively more males use violent methods such as firearms, hanging and jumping; females usually prefer less violent techniques such as poisoning and suffocation".

Apart from the differences which were mentioned before, Kessler and McRae (1983) also noted that women are more likely than men to obtain psychiatric treatment for comparable feelings of distress.

Suicide and suicide attempts not only show differences between sexes and ages, but also between areas with different levels of urbanization. In

1960, Capstick noted that "It has long been known that, usually, suicide and suicide attempts are proportionately more frequent in towns than in the country and that this is so in many parts of the world".

Capstick (1960) also noted that "Suicide was commoner in spring and early summer than in other seasons, and this was observed by various writers (Morselli, 1881; Durkheim, 1897; Dublin and Bunzel, 1933; Dahlgren, 1945; Swinscow, 1951)". Capstick also quoted that "The reason for the seasonal variations in the frequency of suicide is not known. Morselli (1881) suggested that the unaccustomed warmth of spring caused 'irritability'. Fifty years later, Mills (1935) said that the weather was more influential than economic conditions in the determination of suicide rates, and that suicide was most common in districts where changes in temperature and barometric pressure were severe and common".

1.3 Sources of Data on Suicide Attempts

In New Zealand, it is a requirement on hospitals (private and public) to report instances of attempted suicide. These are collected and aggregated by the National Health Statistics Centre in Wellington. Information is collected on many variables. Below are the definitions of the variables that we will be looking at in this study:

a. Discharge Date

The discharge date is the day when the patients are discharged.

b. Admission Date

The admission date is the day when the patients enter the hospi-

tal.

c. Gender*

Sexes of the patients.

d. Days Stay

Days stay is the number of days patients stayed in the hospital for the injury originally sustained. If a patient is transferred this would be counted as another admission.

e. Domicile

Domicile is an indication of area unit where the person lives, which is interpreted to be where he or she is usually resident.

f. Race*

The ethnic origin as stated by the patient.

g. Marital Status*

Marital status is recorded on a 6 point scale, namely Single, Married, de Facto, Divorced, Widowed and Separated. The categories are mutually exclusive to each other in marital status. In other words, patients recorded as one group would not belong to other groups.

h. Age

The age of the patient is the age at date of discharge.

i. Discharge Type*

Discharge type indicates where the person is sent. It could be that the patient leaves hospital to return home, transfers to another

hospital or residential institution or dies at the hospital following formal admission.

j. Ecode (Method)*

Ecode is the method used in suicide attempts. Methods are classified according to the International Classification of Diseases, 9th Revision Clinical Modification (ICD.9.CM.) VOL.1, 2, and 3.

* For details of coding for the variables refer to Appendix A.

1.4 Limitations of the Data on Attempted Suicide Data

It is difficult to decide what constitutes an attempt at suicide. A deliberate experiment with drugs which resulted in a more drastic outcome than was intended, in other words, an overdose, may be thought to be a suicide attempt or it could be an accident. Such difficulties with definitions suggest that errors could occur in coding suicide attempts as accidents and vice versa.

Although it is not the aim of this study to highlight the accuracy of the data supplied by the National Health Statistics Centre, it must be said that the possibility of error does exist at each stage of the collection process.

The information is only collected from hospitals (public and private). Instances of suicide attempts by individuals who do not attend a medical centre will not appear in the data. Others may at the time, or at a later date, visit their general practitioner but if they are not referred to a hospital they will not enter into the database. It is also possible that

there were unrecorded suicides in categories such as motor vehicle accidents and fires, and suicide attempts using alcohol might be considered to be only alcohol abuse.

The data include those who have been admitted to a hospital for a day or less. Different hospitals, however, might have different procedures when dealing with the day patients as some might not include the day patients whereas others would include the day patients as having had a one day stay in hospital.

Doctors are often busy people who must balance the time they spend in giving medical attention to their patients with the often odious task of maintaining current and complete records of the condition of their patients and the medical responses. Time pressures may lead them to make errors or omissions in patients' records.

The information on the forms filled out by the medical staff are coded and entered into a computer. Coders would not normally have the detailed knowledge of medical procedures to make a decision on a code, particularly if the writing is not very legible. Of course, hospitals would presumably have clear guidelines for these situations when the responses are not obvious but time pressures, again, may lead to incorrect decisions being made. Also, different coders in different hospitals might not come up with the same decision when the same problem is faced.

The number of suicide attempts in this study is the number of patient discharges not the number of patients concerned. The number of discharges will be larger than the number of patients as many patients have more than one stay in hospital in one year. Each of these stays yield a discharge which is counted. In other words, the data may include

more than one record per person.

Some specific difficulties arise in the responses to certain of the questions on the form, for instances, Domicile, Race and Marital status.

Domicile - There may be some confusion about the normal, current or permanent address as the patients could be at the specified place for only a temporary stay. There may be some ambiguity in answering this question.

Race - Data on ethnicity is always difficult to acquire particularly when a person has more than one race in his or her ancestry. Responses do reflect the attitudes of society at the time. The response given by a particular individual may differ at two different points in time. The coders could only code according to whatever was written down. In some cases, patients might refuse to answer this type of question and then the person filling in the form might have to guess the race of the patients by their name or by their accent.

Marital status - This question may have appeared simple at some time in the past but there is generally in society a more open attitude to couples who are living together but not in a legal marriage arrangement.

Other difficulties arise in the aggregation of data and the forming of rates of suicide and these will be considered later.

1.5 The Population Census Data

To obtain the rates of attempted suicide, information from the New Zealand Population Census has been combined with the data from the National Health Statistics Centre. The morbidity data is collected on an annual basis but the population census is only carried out every five years. As the total population of New Zealand has not changed dramatically in the years 1980 through 1988, the rates of suicide attempts will not be affected greatly if the Census Data of 1986 is used for the Morbidity Data in the surrounding years of 1984 through 1988. Similarly if the Census Data of 1981 is used for the Morbidity Data in the surrounding years of 1980 through 1983. The 1981 and 1986 Census Data were chosen to obtain the rate of suicide attempts is because they have sufficient information on the cross tabulation of different variables which is required in this study, whereas others did not.

As a check on the degree of change in the population count over time, the differences between the census of 1981 and 1986 were examined by the marginal totals formed by breaking the population counts down by gender, marital status, geographical area and the other variables of the Morbidity Data. This examination revealed that there were very small differences over the censuses of these two years. For example, single females increased 0.30% from the 1981 Census to the 1986 Census and males increased by 0.02%. Females with ages 10-14 decreased by 4.35% from the 1981 Census to the 1986 Census, and males showed a corresponding decrease in percentage of 4.46%. Christchurch, only, showed a small percentage increase over 1981 and 1986 Census years in both sexes, with females increasing by 2.46% and males up by 1.94% (see 1981 NZ Census, Vol. 1 and 2, and 1986 NZ Census, Series C).

1.6 Combining Morbidity and Census Data

The Morbidity Data from the National Health Statistics Centre are basically aggregated into calendar years according to the discharge date. In order to study the number of suicide attempts in every year, the Morbidity Data from 1980 to 1988 were grouped together into yearly data according to the admission date. We may have missed some cases of suicide attempts, for example, if patients entered the hospital in 1988 (more likely at the end of 1988) and had a long stay and were not discharged to anywhere in 1988, they would not be included in our study since the Morbidity Data are aggregated according to the patients discharge date.

A few problems arose because the two sets of data, morbidity and census, were collected at different times and had different definitions and ways of tabulating some of the variables. For instance, race in the Morbidity Data has separate categories for Pacific Islander, Fijian, Tongan, and other Pacific Islander Polynesian groups, whereas in the 1986 New Zealand Census of Population and Dwelling, the Pacific Islander category included all Polynesians (this is Tongan, Samoan, and so on), Melanesian and Micronesian. To overcome this problem, all Polynesians, Micronesians and Melanesian have been grouped together for both the Morbidity and Census Data to form a single category of Pacific Islander which enables us to study the rate of suicide attempts for this category.

For the Morbidity Data, all the categories in marital status are mutually exclusive, whereas the 1986 New Zealand Census of Population and Dwelling Data does not provide information in mutually exclusive categories for marital status directly except for the group de Facto. Figures from a few tables in the 1986 New Zealand Census of Population and

Dwellings, Series C, had to be combined in order to obtain the independent figures of population in marital status. The actual figure of de Facto for the population data was obtained from Table 8. Beside the de Facto group, Table 7 give the figures of the various categories of marital status, but unfortunately the figures also include the people having a de Facto relationship. Thus, to obtain the mutually exclusive figures for the various categories in marital status, figures from Table 8 were subtracted from the figures in Table 7, to end up with mutually exclusive figures of population for categories like Married, Separated, Widowed, Divorced and Unknown except Single. As the figures in Table 7 and Table 8 only involved the ages of 15 and over, therefore, the population with ages under 15 would not be included here. In the Morbidity Data, the patients of age under 15 are grouped as Single (as described in Appendix A). Therefore to obtain the correct population figure of the independent category Single, the total number of the population with ages under 15 (see 1986 NZ Census, Series C) is added to the previous figure from group Single that were obtained after the subtraction of Table 7 and Table 8. In this section, Table numbers refer to 1986 NZ Census, Series C.

In order to obtain the geographic variables (Statistical Area and Urban and Rural Area), matching by 'Domicile' (Area Units) has been done on the two sets of data (Morbidity Data and Census Data). The domicile in the Census Data indicates the area units and each area unit can be broken down further to indicate which Statistical Area and Urban and Rural Area that area unit belongs to. There were a total of thirteen Statistical Areas and forty Urban and Rural Areas in New Zealand (refer to Appendix B for the details of these areas).

Because some area unit codes in the Morbidity Data do not occur in the

area units of Census Data, we were not able to retain the whole set of Morbidity Data. After the matching of files, 40 of the 3130 (1.28%) cases could not be matched and were treated as missing values. This study will only consider the valid cases (3090) after the matching.

1.7 Analysis

The statistical analysis in this study was obtained from the statistical packages, SPSSx (Version 3.0), Minitab (Release 7.2) and Microsoft Excel (Version 3.0).

Chapter 2
Frequencies and Rates of Suicide Attempts Broken Down by Single Variables

2.0 Introduction

In this chapter, we consider the frequencies of suicide attempts and their rates of occurrence for the 1988 Morbidity Data. We begin by relating the frequencies and rates to each demographic variable taken one at a time. In the next two chapters, the interaction of two or more demographic variables will be explored.

2.1 Gender

Of the 3090 cases of suicide attempts, 1911 (61.8%) were female and 1179 (38.2%) were male (see Table 2.1). Therefore, females recorded about 62% more suicide attempts than males.

The actual rate (Number of Attempts per 10,000 people) of both sexes may be calculated as follows:

Rate of female attempts = (1911/1646616) * 10,000 = 11.61

Rate of male attempts = (1179/1616667) * 10,000 = 7.29

That is, females have a suicide attempts rate of 11.61 per 10,000, a rate which is 59% higher than males with only 7.29 per 10,000. These

figures include children who would usually be considered too young to wilfully attempt suicide so that the rates quoted above are lower than would be obtained if these ineligible groups were omitted. Later in this study, suicide rates have been calculated by omitting those who are younger than 10 years of age.

As there are only slightly more females than males in the population (1,646,616 versus 1,616,667), the rates of attempted suicide for females and males are in about the same ratio as the frequencies of attempts.

Table 2.1 Frequency and Rate of Attempted Suicide by Gender.

	FEMALE	MALE
ATTEMPTS		
FREQUENCY	1911	1179
PERCENTAGE OF FREQUENCY	61.8%	38.2%
RATE[a]	11.61	7.29

Note:

a The Number of Attempts per 10,000 people.

2.2 Length of Stays in Hospital after Attempted Suicide

From Table 2.2, most of the people who attempted suicide did not stay long in hospital with 90.6% leaving within 9 days. About 50% of the patients were discharged on the same day or after 1 day. As we shall see later, the majority of the people are taken to the hospital suffering from substance abuse so that they may only need observation for less than a day, perhaps with the need of a stomach pump. As one may

expect, the number of people discharged decreases with the length of stay.

The numbers show a smooth decrease from day 1 onwards although day 6 with 77 is larger than would be expected in this overall trend. Those who stayed for 10 or more days constituted 9.4% of the data base which may again suggest a plateau rather than a continuity decrease in numbers. The trend seems to have reached a plateau for stays of 7 to 9 days.

Table 2.2 Frequency of Attempted Suicide by Number of Days Stay in Hospital.

DAYS STAY	FREQUENCY	PERCENTAGE
0	381	12.3
1	1185	38.3
2	540	17.5
3	290	9.4
4	147	4.8
5	83	2.7
6	77	2.5
7	37	1.2
8	28	0.9
9	31	1.0
10 OR MORE	291	9.4
TOTAL	3090	100

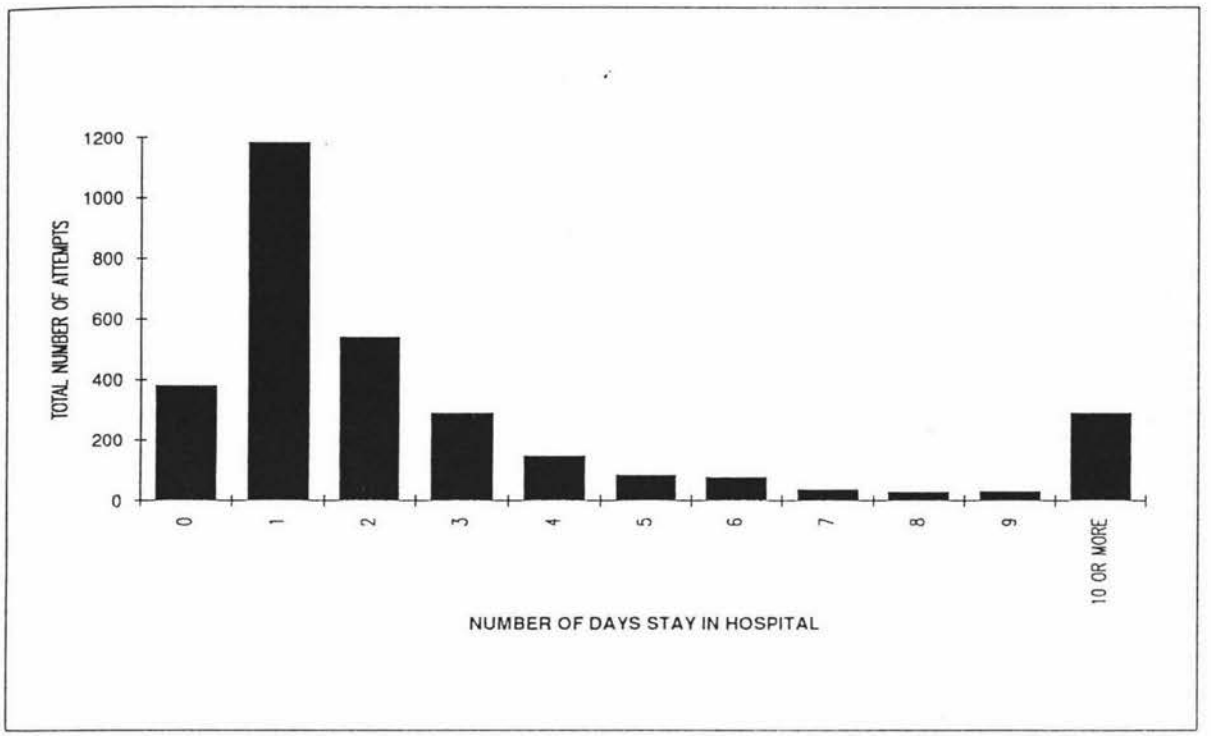


Figure 2.1 Total Number of Attempts by Number of Days Stay in Hospital.

2.3 Ethnicity

Referring to Table 2.3, we note that 70.3% of the attempted suicides are European followed by 15.5% for Maori. The next largest group is that termed Others.

Although Europeans have the highest number of attempted suicides, the highest attempted suicide rate comes from Maori people, which is approximately 16 per 10,000 head. This rate is disturbingly high as it is almost double the national average, and, indeed, double that of each of the other racial groups.

Indians appear to have a slightly higher rate than Europeans but this

might not be significant as this is probably caused by the small total population of Indians in New Zealand.

The Others category is a problem in that it is ill defined and has an extremely large suicide attempts rate (71.40 per 10,000). It should be noted that ethnic questions usually result in very variable answers particularly from people of mixed races. The problem is compounded in this study as data bases from the Health Department and the Statistics Department have been merged. For example, those who attempt suicide may be less inclined to provide their ethnic background than those who fill out a census questionnaire. For these reasons, the Others category is omitted from the number of attempts and the rate of attempting in Figures 2.2 and 2.3.

As suicide attempt is rare for children, therefore, the differences in frequency of attempts between different ethnic background will not expect to be much for the younger ages between the different ethnic groups. Maori, especially have had a significant increase in total population in recent years, and they have a large population of children. Without the children, the situation would be more serious than shown in Table 2.3. Therefore, it is worthwhile to study the details of the ethnic groups excluding the cases of children. The figures without cases under the ages of 10 for the different ethnic groups were calculated and are shown in Table 2.3a. The table clearly shown that every group had an increasing value in rate of attempts and the ranking for rate of attempts remains unchanged. The differences between the highest rate (for Maori) with others in Table 2.3a have a bigger margin compared to those from Table 2.3.

Table 2.3 Frequency and Rate of Attempted Suicide by Race.

RACE	POPULATION	FREQUENCY	PERCENTAGE	RATE(T)[a]
EUROPEAN	2776923	2172	70.3	7.82
MAORI	304047	480	15.5	15.79
PACIFIC ISLANDER	100968	68	2.3	6.73
CHINESE	19869	10	0.3	5.03
INDIAN	12456	10	0.3	8.03
OTHERS	49020	350	11.3	71.40[b]
TOTAL		3090	100	

Note:
a The Total Number of Attempts per 10,000 people.
b The Rate for this group, Others, is spuriously large.

Table 2.3a Frequency and Rate of Attempted Suicide by Race (without the cases of ages under 10).

RACE	POPULATION	FREQUENCY	RATE(T)[a]
EUROPEAN	2384184	2169	9.10
MAORI	230799	478	20.71
PACIFIC ISLANDER	77424	67	8.65
CHINESE	17211	10	5.81
INDIAN	10374	10	9.64

Note:
a The Total Number of Attempts per 10,000 people.

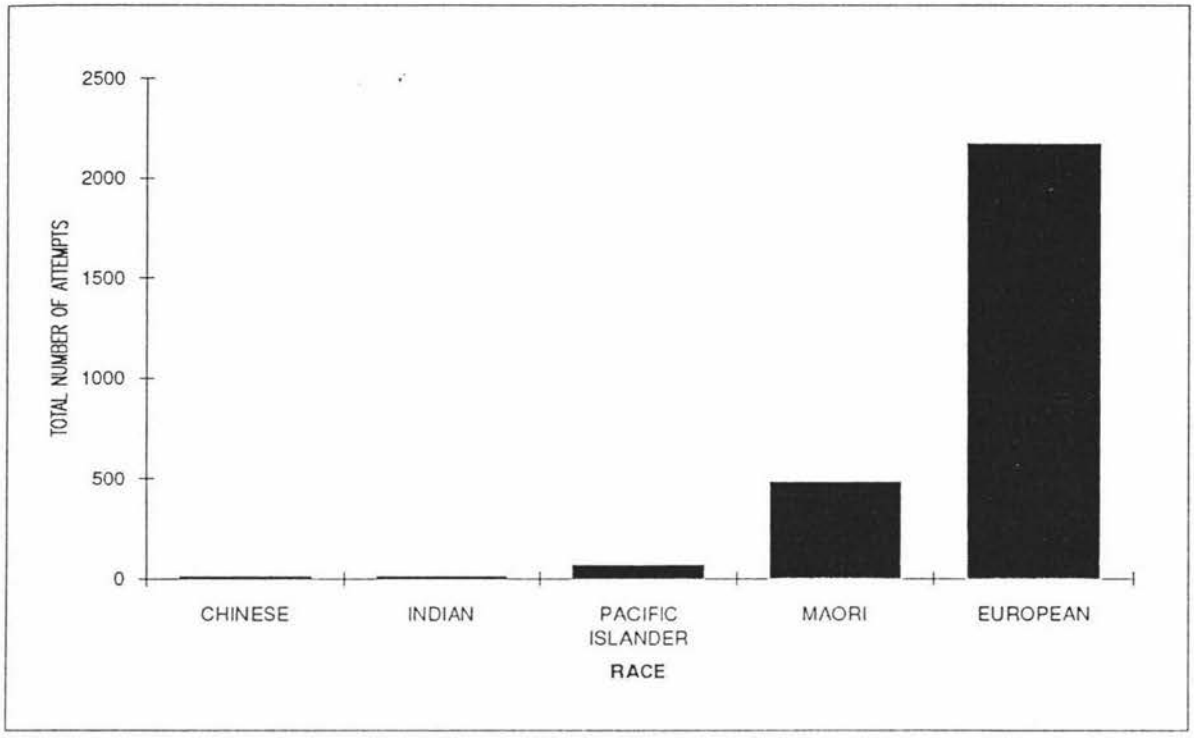


Figure 2.2 Total Number of Attempts by Race.

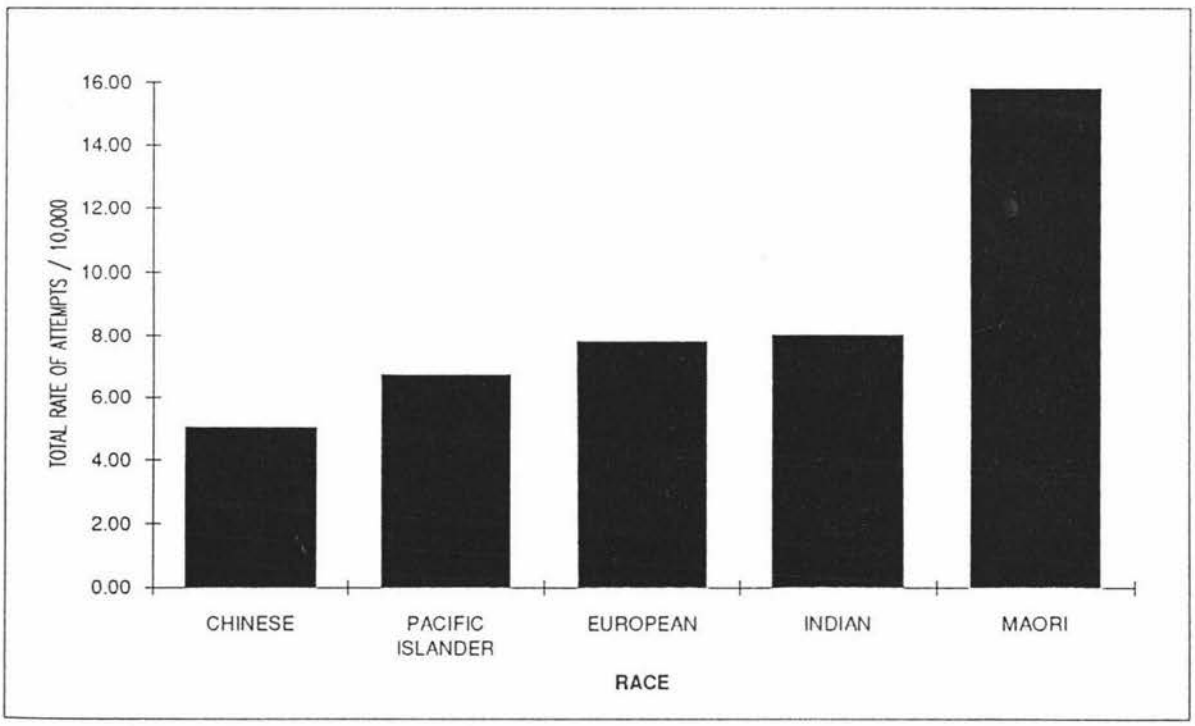


Figure 2.3 Rate of Attempts per 10,000 by Race.

2.4 Marital Status

More than half, 58.2%, of those who attempted suicide gave their marital status as Single while 21.7% replied that they were Married with smaller percentages occurring for each of the other categories (Table 2.4 and Figure 2.4).

This may reflect the large number of young unmarried people who attempted suicide but this only tells us part of the story as we need to compare these frequencies with the total numbers in the population in these categories.

When the population figures are take into account, the rates of suicide attempts by marital status show a very different picture (Table 2.4 and Figure 2.5). Now, the highest rate of attempted suicide is from those who are separated. It is noteworthy that apart from the category of widowed, the highest rates occurred with those who were now living alone. Loneliness could be one of the reasons which leads to the act of suicide attempts.

Those currently living in a relationship or who were widowed resulted in the lowest rate of attempted suicide. This is a very interesting finding but it may be confounded with the age distribution as widows and widowers tend to be older. We shall return to this in a later section.

There is a problem with the rate of Single category as the population figures include children but suicide attempts were found to be rare in the younger ages. Therefore, the real picture of rate of attempts might be affected. For this reason, figures for Single group with ages 10 and over was calculated. It showed a different when ages under 10 were

taken off the group with rate of attempts increasing from 12.42 per 10,000 to 18.98 per 10,000 which is overall, the second highest in ranks.

Table 2.4 Frequency and Rate of Attempted Suicide by Marital Status.

MARITAL STATUS	POPULATION	FREQUENCY	PERCENTAGE	RATE(T)[a]
MARRIED	1357080	672	21.7	4.95
DE FACTO	115029	97	3.1	8.43
DIVORCED	74229	131	4.2	17.65
SEPARATED	73323	222	7.2	30.28
WIDOWED	161709	89	2.9	5.50
SINGLE	1446423	1797	58.2	12.42
SINGLE (10+ YEARS)[e]	943326	1790	58.1[d]	18.98
UNKNOWN	35487	82[c]	2.7	-[b]
TOTAL		3090	100	

Note:
a The Total Number of Attempts per 10,000 people.
b The Rate for Unknown was not calculated as the Population (c) may have a different profile to those in Attempts (d).
c The population of the category Unknown in the 1986 Census.
d The frequency of the category Unknown in the 1988 Morbidity Data.
e Calculated without the cases of ages under 10.

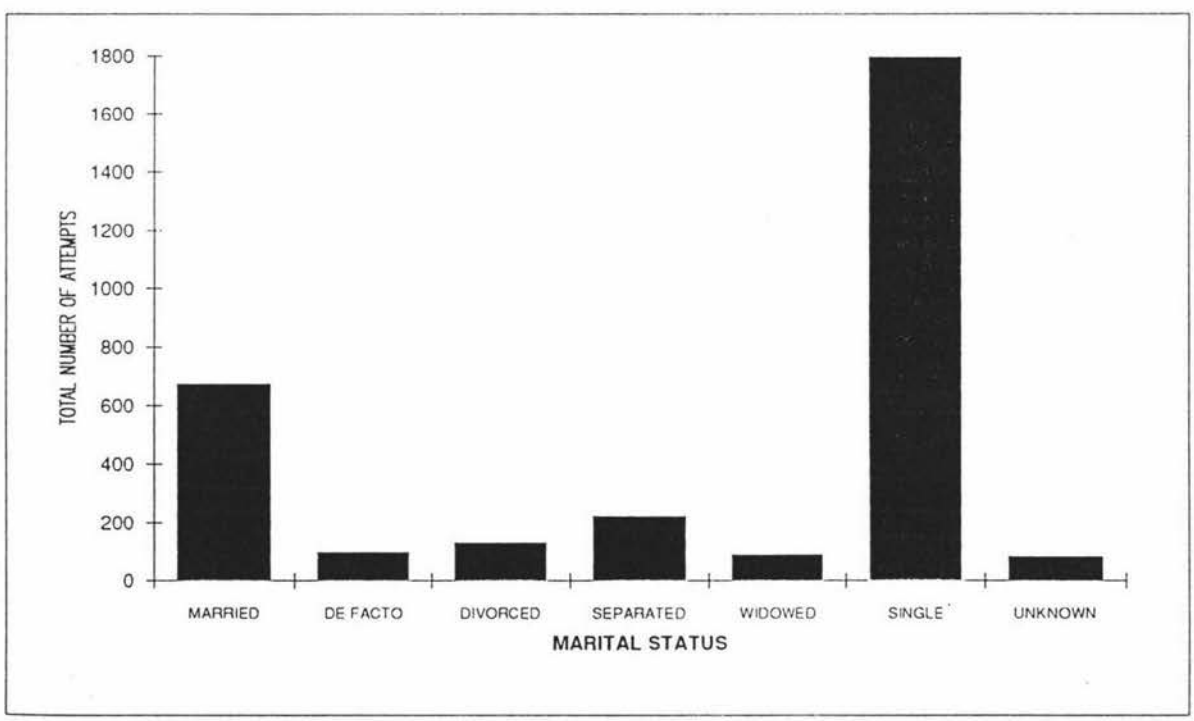


Figure 2.4 Total Number of Attempts by Marital Status.

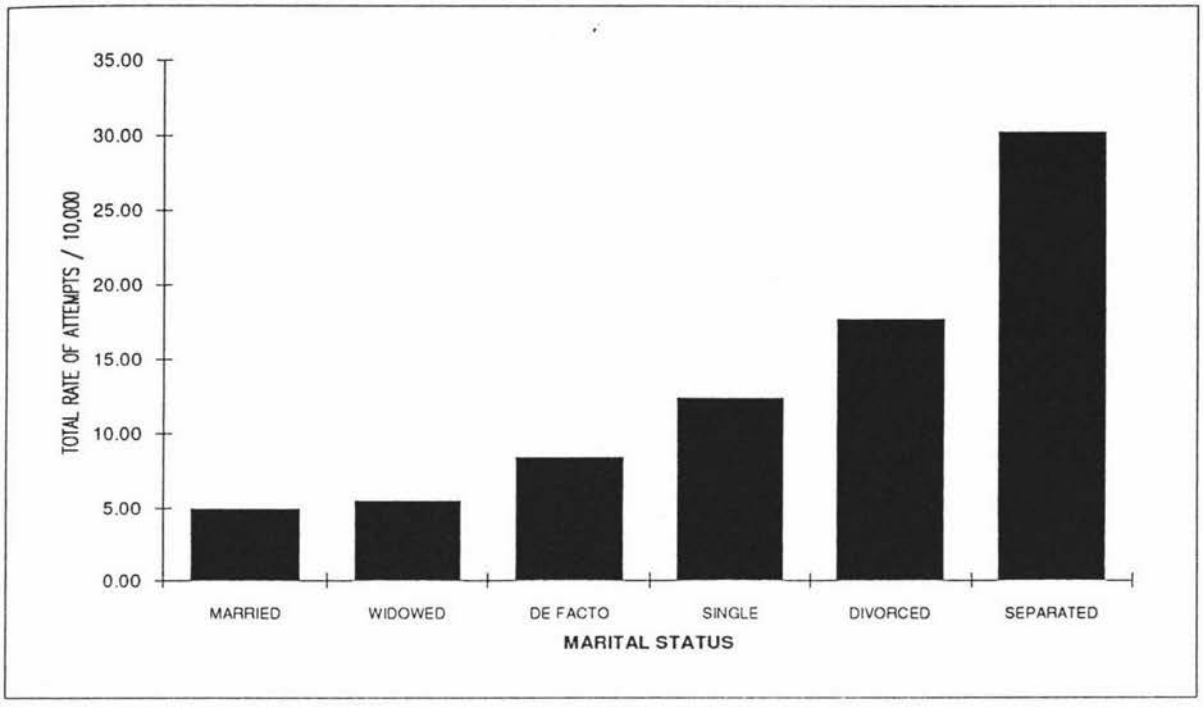


Figure 2.5 Rate of Attempts per 10,000 by Marital Status.

2.5 Ages

The database includes suicide attempts at every age. It must be a classification or coding error for those who are even of age 1 and 2 to be included. Even for those under 12, one would hesitate to label their actions as suicide attempts since Hawton (1986) noted that "Attempted suicide is relatively rare under the age of 12 years, although suicidal thoughts and threats are fairly common among children seen in child psychiatry clinics".

Figure 2.6 shows a downward trend after age 19, and possible plateaux in the regions of ages 30 to 40 and ages 50 to 65. Clearly young people have a much higher number of suicide attempts than those in

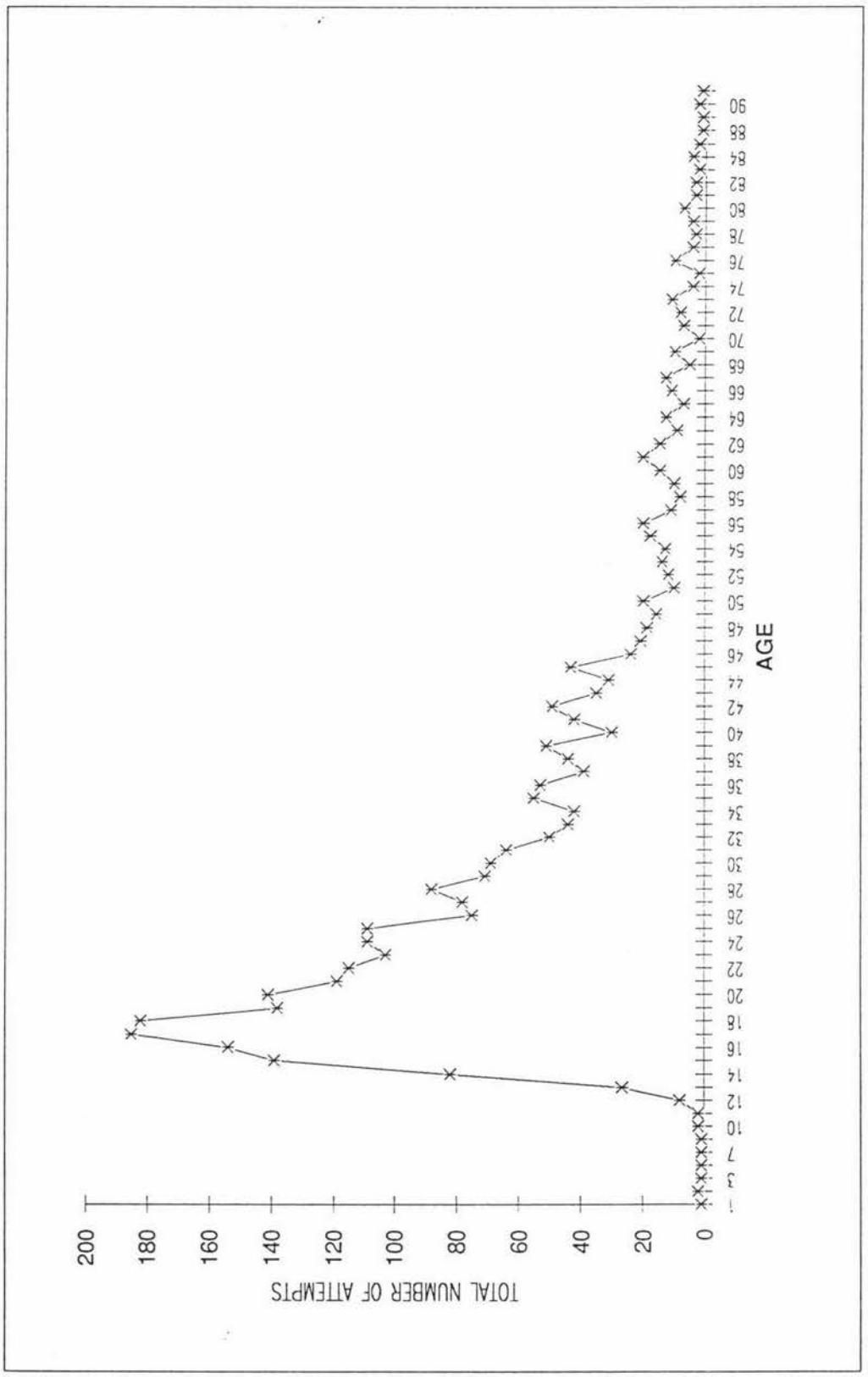


Figure 2.6 Total Number of Attempts by Age.

older age-groups. Connell (1972) notes possible reasons for the high number of young people attempting suicide in that "The high number of suicide attempts from the young group could be due to unsatisfactory relationships with parental figures, unstable homes with an excess of physical violence, inability to express overt aggression in an atmosphere of family hostility and the pressure from school work".

Many suicide attempts of young people could actually be a signal of distress or a cry for help. From this large group of young people many of them are actually school children or university students which is one area of major concern. The high percentage from the Single category that we saw earlier might correlate with the high number of suicide attempts from young people. We will explore this in Chapter 4.

Age-groups

For the purposes of easier visual appreciation and convenience, grouping has being carried out on ages. In order to obtain the rate of suicide attempts, grouping of the ages follows the same scheme as the Department of Statistics used for census data. Figure 2.7 shows the frequency of suicide attempts adjusted for the class widths. Ages 15-17 with median age of 16 in the group have the highest average number of suicide attempts followed by ages 20-24. There is a steady decrease in suicide attempts for ages above the median although there is a small increase around age 62 which may be related to retirement. Again the two lowest blocks appear to be included by miscoding.

Figure 2.8 indicates ages 18-19 have the highest rate of suicide attempts, about 27.60 per 10,000 heads followed by ages 15-17 with a rate of

25.96 persons per 10,000. Once again it emphasises that young people between ages 15-19 have a high rate of suicide attempts and are a cause for some concern but the peaks are not as high relative to the lows as for the frequency of attempts.

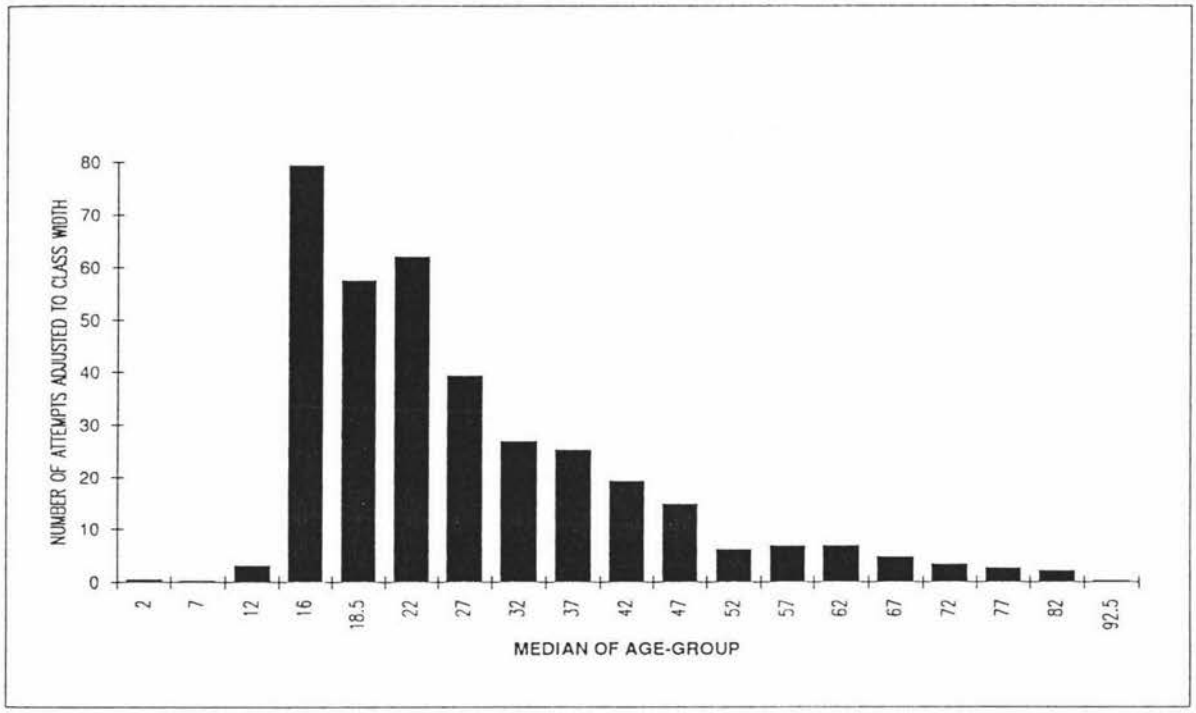


Figure 2.7 Histogram of Total Number of Attempts in Age-group.

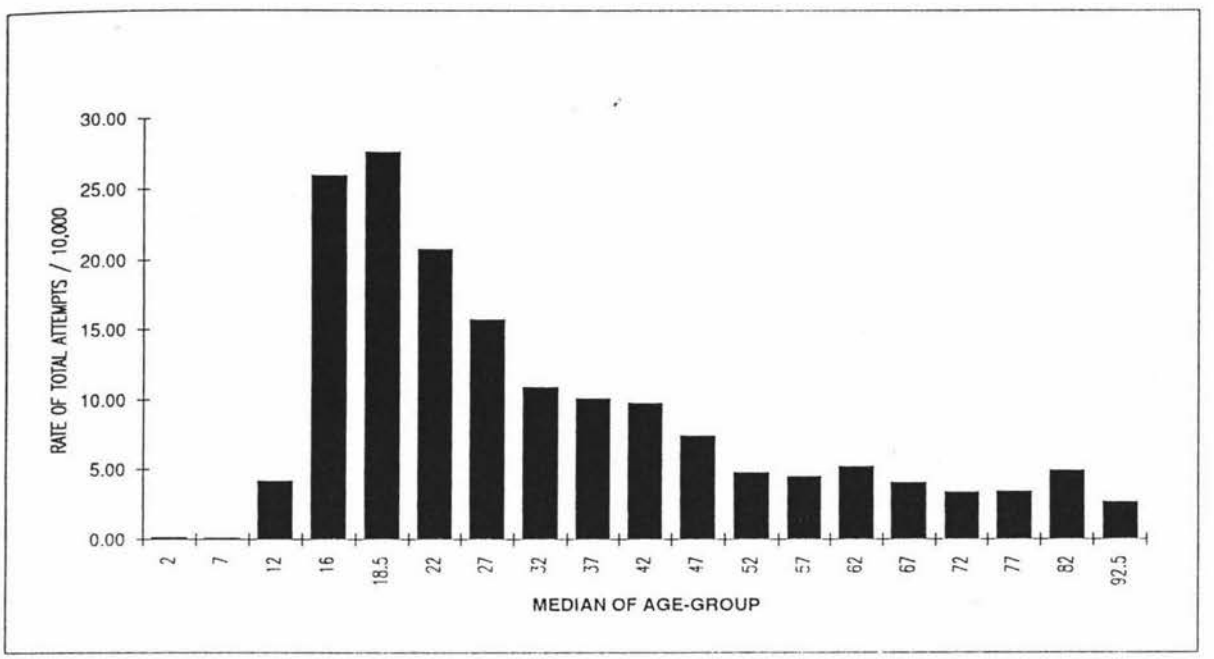


Figure 2.8 Rate of Attempts per 10,000 by Median of Age-group.

Ages 14 - 26 years

Young people in the broad group of 14 through 26 years are vulnerable, particularly those of ages 17 and 18 years. Figure 2.6 shows quite dramatically the sharp peak at ages 17 and 18 years and also the likelihood of skewness of the suicide attempts. The skewness of the distribution is reflected in the following descriptive statistics:

Mode = 17.00
Median = 25.00
Mean = 29.64
Lower Quartile = 18.00
Upper Quartile = 37.00
Interquartile Range = 19.00
Standard Deviation = 14.97

The boxplot in Figure 2.9 illustrates some of these features. The box is bounded by the lower and upper quartiles so that it indicates the position of the middle 50% of ages. The median, shown by '+', is to the left of the box indicating a positive skew. The points represented by '*' are possible outliers and the point which is plotted with 'O' indicates a probable outlier.

We now consider in more detail the group of 14 to 26 years. This group is of greatest concern because of their youth and also because they have the largest frequency and rate of suicide attempts. Figure 2.10 shows that those aged 17 and 18 have the highest rate of attempted suicide. Overall, it seems reasonably flat over this age range in rate of attempts.

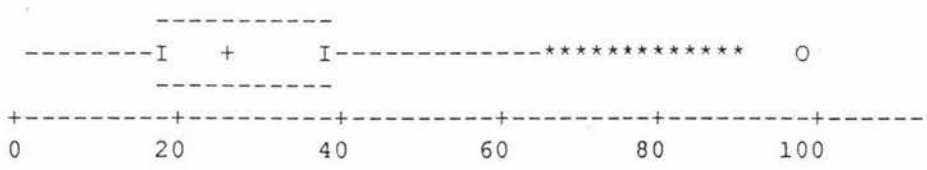


Figure 2.9 Boxplot of Age.

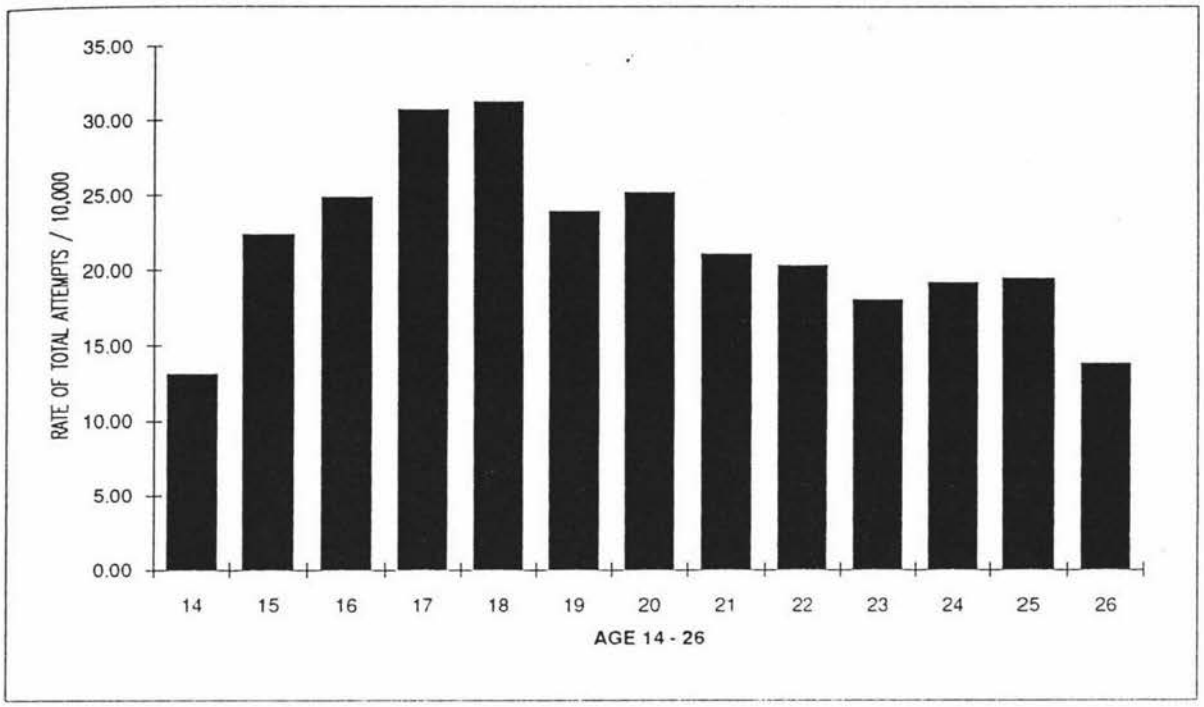


Figure 2.10 Rate of Attempts per 10,000 people by Age 14-26.

2.6 Discharge Types

Among the various categories of discharge type, DR (Discharge, Routine) has the highest percentage (86.5%) of the total number of suicide attempts (Table 2.5).

This reflects the large number who are released from hospital on the same day or after only one day. As the DR category swamps the others, it does not help to graph it along with the others. By removing DR from consideration, the highest proportion occurs with SG (Discharge to General Hospital, Same Board). Overall, the percentages do not differ much for most of the categories (see Table 2.5 and Figure 2.11).

Table 2.5 Frequency of Attempted Suicide by Discharge Type.

DISCHARGE TYPE	FREQUENCY	PERCENTAGE
DR	2673	86.5
DD	45	1.5
DS	49	1.6
DI	68	2.2
PN	5	0.2
SG	108	3.5
SM	1	0.0
SP	91	2.9
SO	7	0.2
OG	27	0.9
OP	8	0.3
PG	1	0.0
PP	5	0.2
PO	2	0.1
TOTAL	3090	100

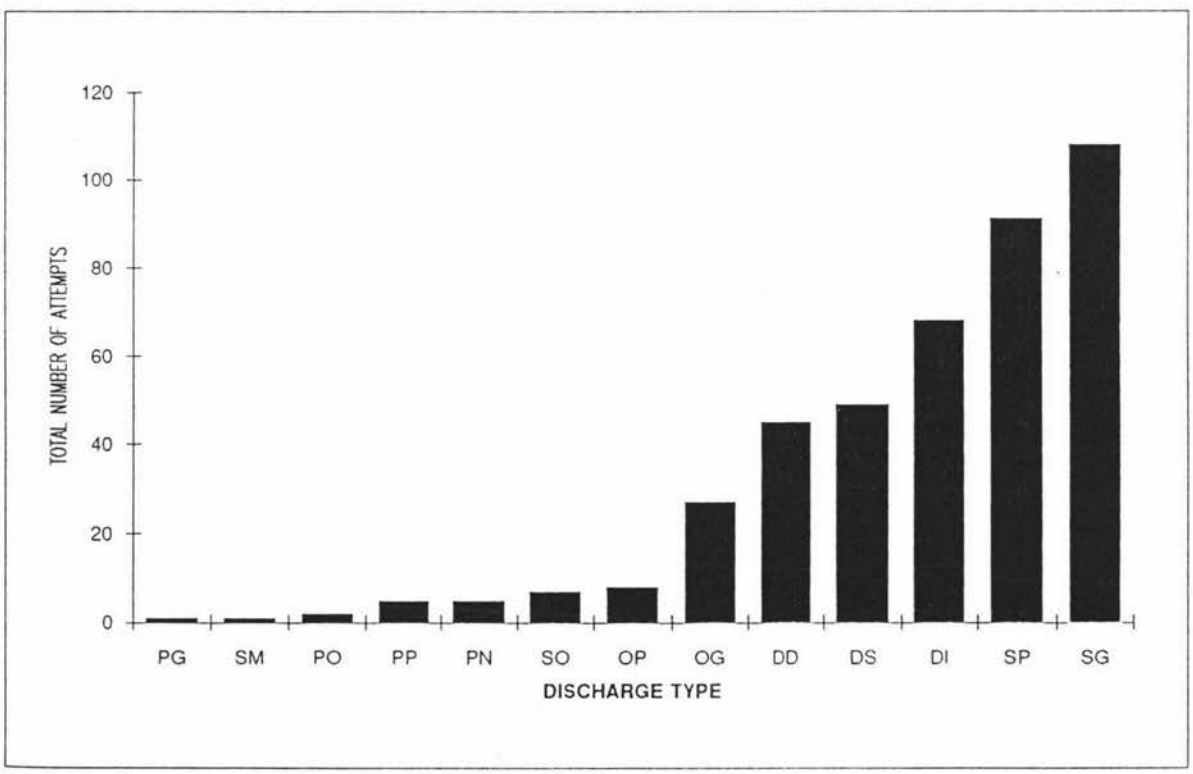


Figure 2.11 Total Number of Attempts by Discharge Type (without Routine Discharge category).

Grouping of Discharge Types

Grouping has been carried out on the Discharge Types to compare the success category (Death), patients who discharge and those who end up consulting a psychiatrist. The four categories after grouping are:

(1) Death (includes DD)

(2) Regular (includes DI, DR, DS)

(3) Psychiatric (includes OP, PP, SP)

(4) Others (includes OG, PG, PN, PO, SG, SM, SO)

Table 2.6 shows only 1.5% of the total suicide attempts succeeded, resulting in death while 90.3% are regular discharges, and a lower percentage (3.4%) are referred to psychiatric hospitals.

Table 2.6 Frequency of Attempted Suicide by Combined Discharge Type.

DISCHARGE TYPE	FREQUENCY	PERCENTAGE
DEATH	45	1.5
REGULAR	2790	90.3
PSYCHIATRIC	104	3.4
OTHERS	151	4.9
TOTAL	3090	100

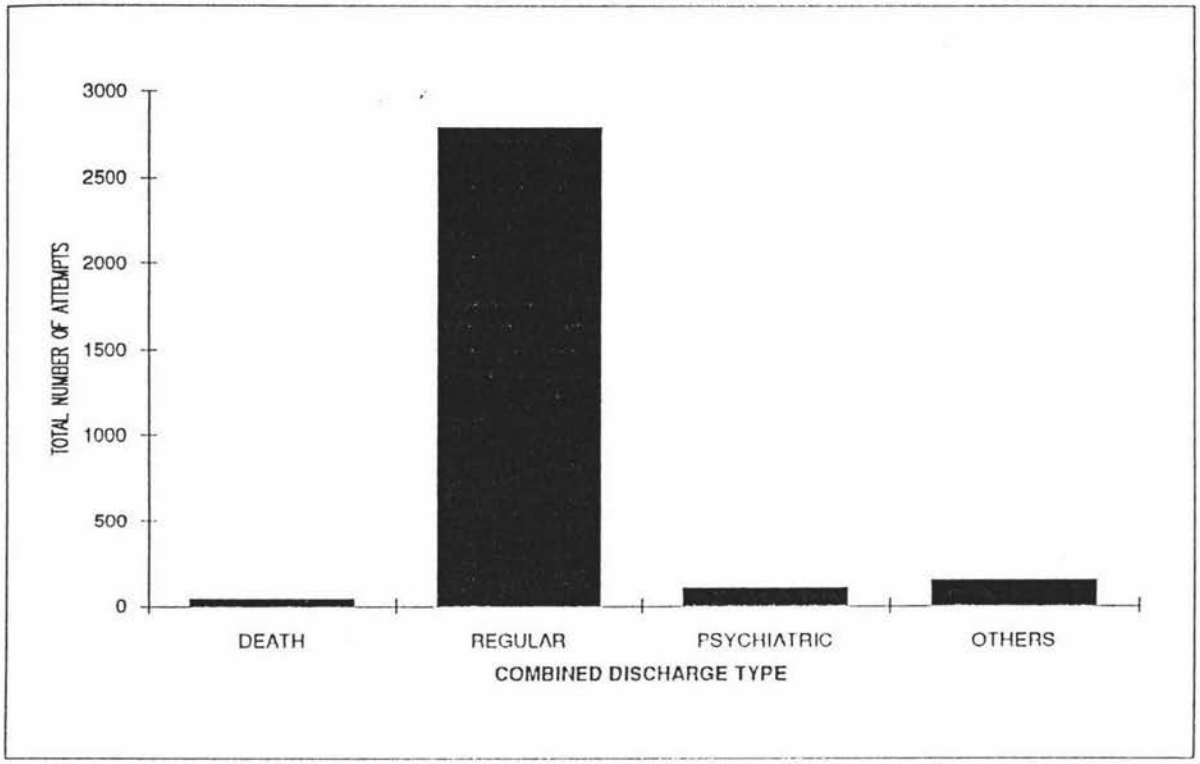


Figure 2.12 Total Number of Attempts by Combined Discharge Type.

2.7 Ecode (Methods)

Methods of suicide attempts can basically be grouped into two categories, namely active and passive methods. Active methods include hanging, cutting, drowning, shooting and jumping from high places. Passive methods include gases, poison or drugs.

In this study, about 90% of attempts used a passive method and less than 10% of the attempts used an active method (see Table 2.7). Of the various methods used in suicide attempts, the most popular method is poisoning by solid or liquid substances, accounting for 87.7% of the total number of suicide attempts. One wonders why this method is so preva-

lent! The reason may be that it is an easy and relatively non-violent method. Hawton (1986) noted that "Drug abuse, especially among the young, has become much more common in recent years, and it is almost certain that this has contributed to the increased number of suicide attempts as the drug addiction often leads to social disintegration and depression and naturally drugs would become the most readily available way for their suicide attempts". Also, it may be that an unintended overdose was taken by some and this means that they were incorrectly coded as attempted suicides. We observed above that the young group has a very high number of suicide attempts which indicates that there could have been a correlation between the most popular method and the high number of suicide attempts amongst the young. We shall cover this in Chapter 4.

Figure 2.13 shows that after the outstanding high percentage method, 'Poisoning by Solid or Liquid Substances', 'Cutting and Piercing instruments' (5.3%) was very common compared to other methods with 'Other Gases and Vapours' having 1.9%, 'Hanging, Stangulation and Suffocation' 0.9%, 'Jumping from High Place' together with 'Late Effect of Self-Inflicted Injury' 0.6% and 'Firearms and Explosives' with 0.5%. Methods like 'Submersion (drowning)' and 'Suffocation by Gases in Domestic Use' only explain 0.2% of all cases.

Table 2.7 Frequency of Attempted Suicide by Ecode (Method).

ECODE (METHOD)	FREQUENCY	PERCENTAGE
E9500-9509	2709	87.7
E9510-9519	5	0.2
E9520-9529	60	1.9
E9530-9539	29	0.9
E9540-9549	6	0.2
E9550-9559	14	0.5
E9560-9569	165	5.3
E9570-9579	20	0.6
E9580-9589	63	2.0
E9590-9599	19	0.6
TOTAL	3090	100

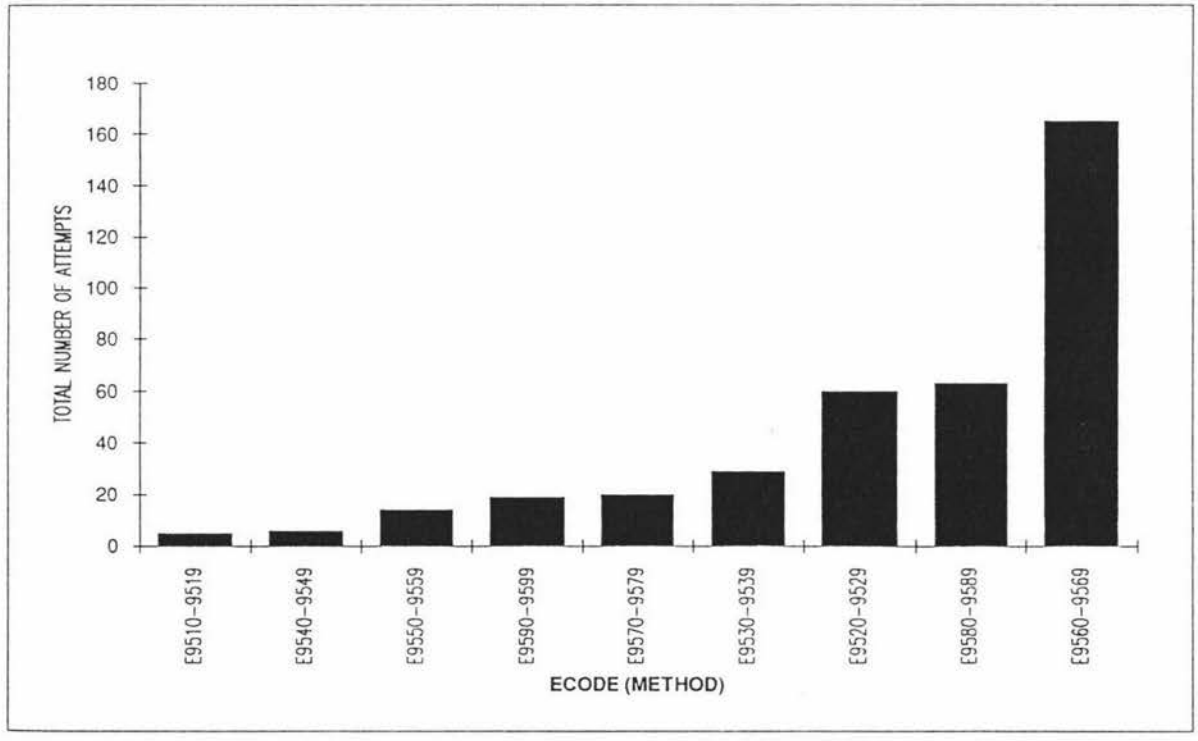


Figure 2.13 Total Number of Attempts by Ecode (Method) (without Poisoning by Solid or Liquid Substances category).

Poisoning by Solid or Liquid Substances

As we have seen, methods like poisoning by solid and liquid substances are so popular that it would be better to go further into detail to find out what sort of solid or liquid substances are used (see Table 2.8 and Figure 2.14).

More people used the substances called 'Tranquillizers and Other Psychotropic Agents' (9503) and 'Other Specified Drugs and Medicaments' (9504). The widespread use of those drugs is, no doubt, due to their prevalence, their effectiveness and their lack of violent reactions.

Table 2.8 Frequency of Attempted Suicide by Poisoning by Solid or Liquid Substances.

ECODE (METHOD)	FREQUENCY	PERCENTAGE
9500	383	14.1
9501	9	0.3
9502	71	2.6
9503	1061	39.2
9504	1019	37.6
9505	70	2.6
9506	25	0.9
9507	14	0.5
9508	1	0.0
9509	56	2.1
TOTAL	2709	100

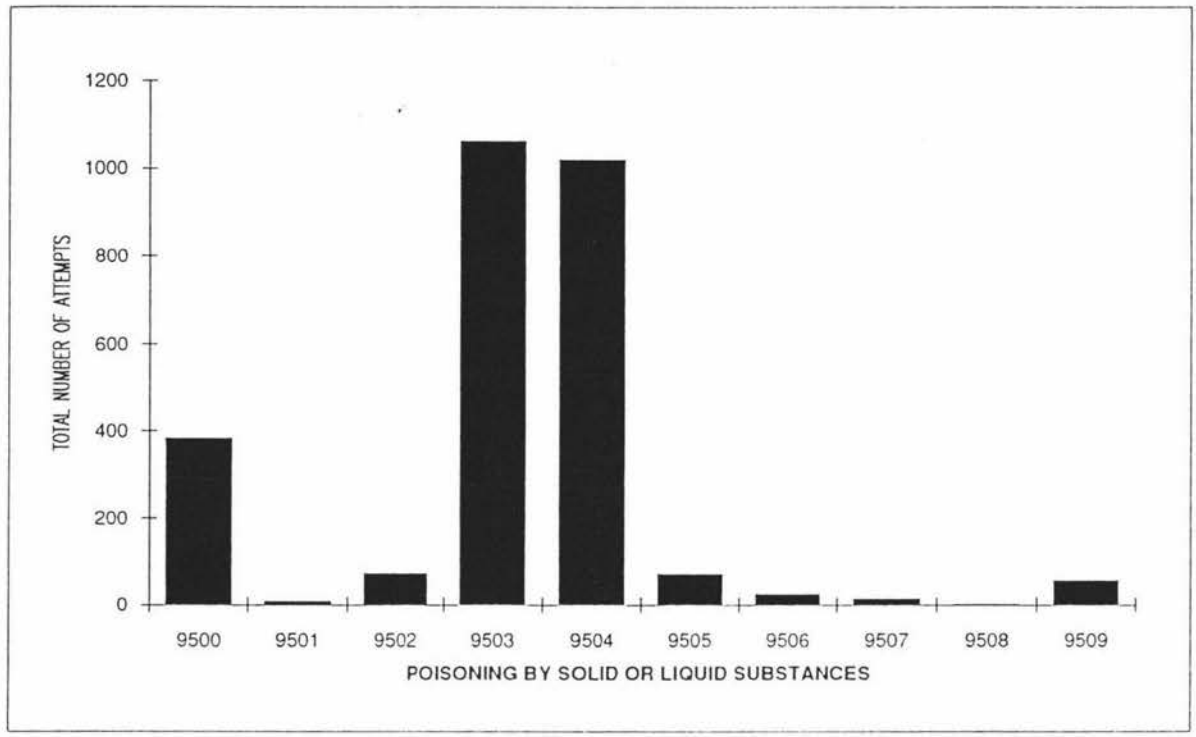


Figure 2.14 Total Number of Attempts by Poisoning by Solid or Liquid Substances.

2.8 Statistical Areas

Statistical Areas were obtained from the breakdown of the response Domicile as was mentioned earlier in chapter one (refer to Appendix B for the details of definition).

An examination of the number of suicide attempts in all Statistical Areas throughout New Zealand showed that areas such as Auckland, Wellington and Canterbury had a higher number of suicide attempts. The frequencies of suicide attempts were, naturally, higher in the more populated areas (Figure 2.16). It may be hypothesised that the rush and pressure of the large cities lead to anxiety and depression which contribute to suicide attempts. Alternatively, these large frequencies may simply be due to the

high population in these areas.

When the actual counts are compared to the population size in the rates of attempts, a different story emerges. Figure 2.17 shows that, although Canterbury and Wellington are at the top of the rates of attempts, others follow very closely. The rates of suicide attempts are positively but not highly correlated with the degree of urbanization with urban areas such as Central Auckland being only fifth out of the thirteen areas whereas the smaller urban areas of Nelson and East Coast are tenth and eleventh, respectively. The four lowest rates occur with the rural areas of Northland, Marlborough, Southland and Westland. The plot of Rate of Total Attempts against Statistical Area Population Size in Figure 2.18 emphasizes the above points.

Table 2.9 Frequency and Rate of Attempted Suicide by Statistical Area.

STATISTICAL AREA	POPULATION	FREQUENCY	PERCENTAGE	RATE(T)[a]
NORTHLAND	122463	56	1.8	4.57
CENTRAL AUCKLAND	879828	734	23.8	8.34
S.AUCKLAND-BAY OF PLENTY	507987	478	15.5	9.41
EAST COAST	47952	52	1.7	10.84
HAWKES BAY	149286	137	4.4	9.18
TARANAKI	109491	102	3.3	9.32
WELLINGTON	591726	681	22.0	11.51
MARLBOROUGH	36495	23	0.7	6.30
NELSON	78150	75	2.4	9.60
WESTLAND	22086	17	0.6	7.70
CANTERBURY	423948	496	16.1	11.70
OTAGO	180414	163	5.3	9.03
SOUTHLAND	103533	76	2.5	7.34
TOTAL		3090	100	

Note:
a **The Total Number of Attempts per 10,000 people.**

Figure 2.15 The Distribution of Statistical Areas in New Zealand.

Source: 1976 Census of NZ Bulletins.

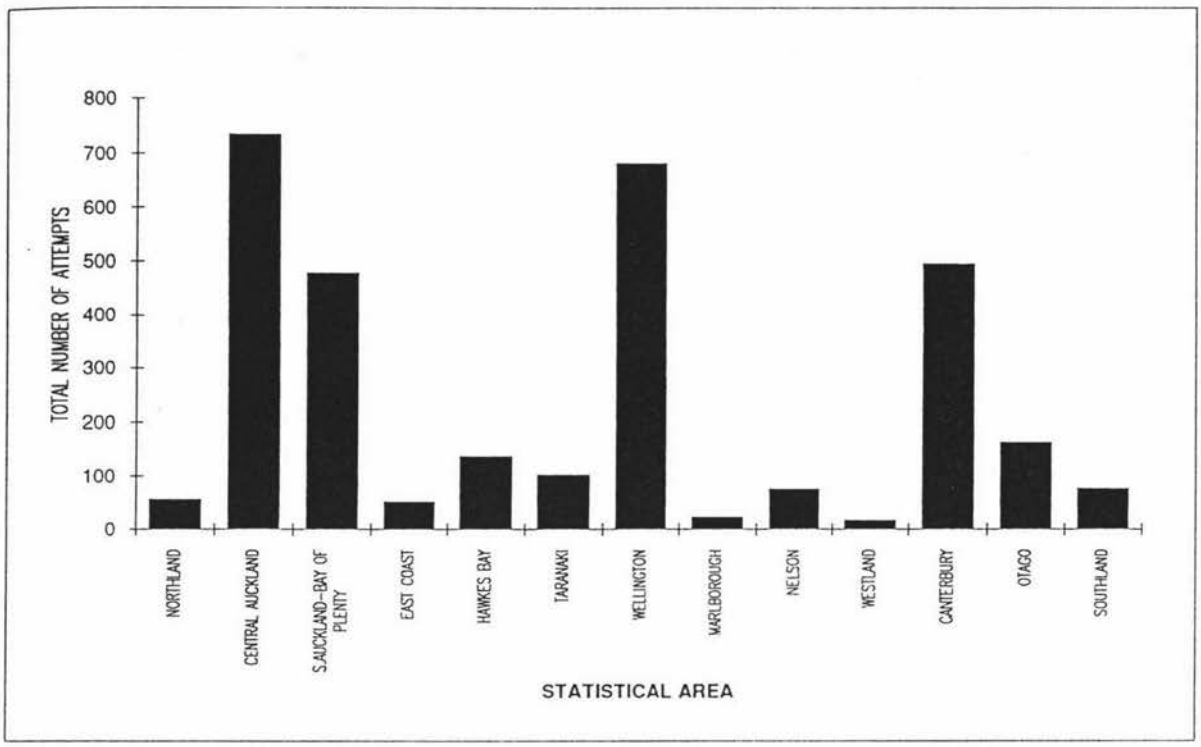


Figure 2.16 Total Number of Attempts by Statistical Area.

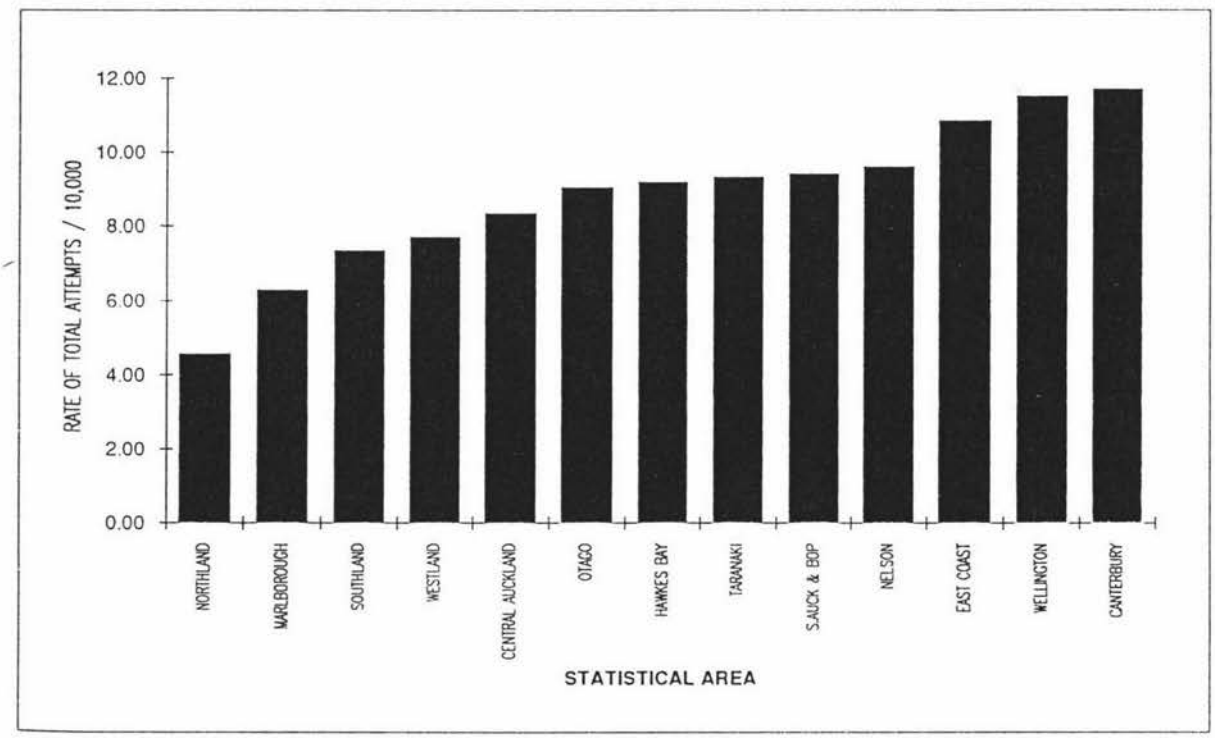


Figure 2.17 Rate of Attempts per 10,000 by Statistical Area.

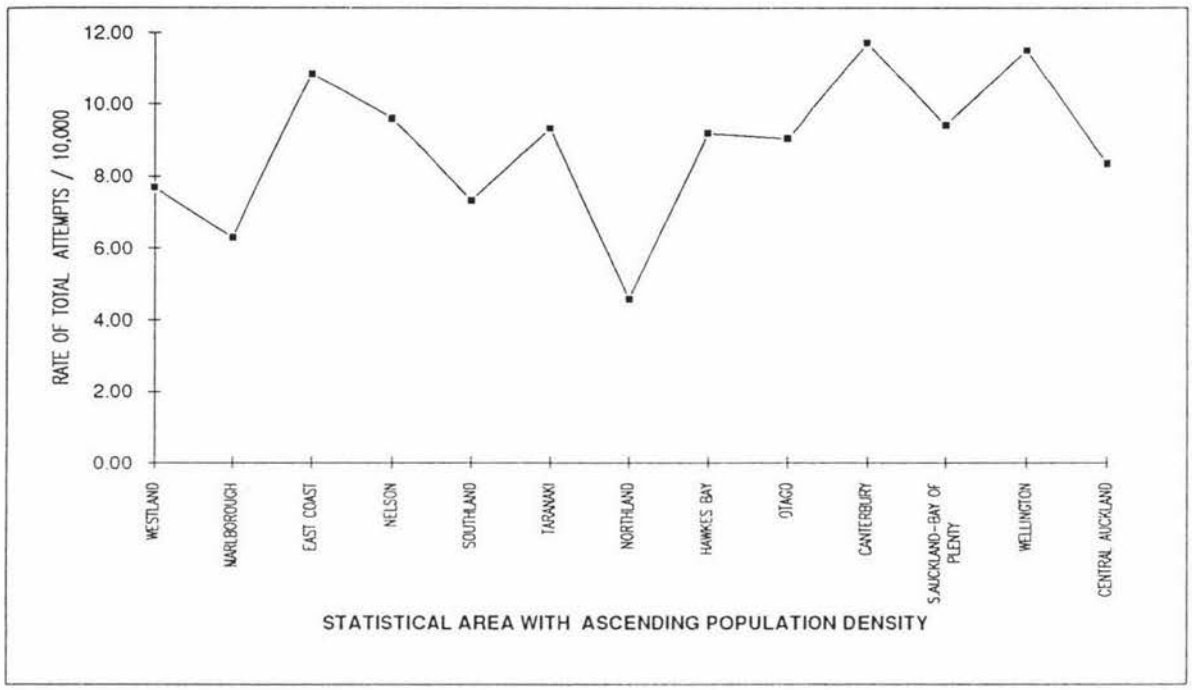


Figure 2.18 Rate of Attempts per 10,000 by Statistical Area With Ascending Population Density.

2.9 Urban and Rural Areas

New Zealand is divided into forty categories, consisting of 23 Main urban Areas, 14 Secondary Urban Areas plus 3 others labelled Minor Urban Area, Rural Area and Shipping Area. Similar to Statistical Areas, these data were obtained from the breakdown of the variable Domicile (refer to Appendix B for the details of areas which belong to Main and Secondary Urban Areas).

It has always been interesting to know how suicide behaviour varies with the different types of area in the country. Because of no attempts recorded from Shipping Areas, it was omitted from the tables and figures

in this section. Table 2.10 and Figure 2.19 show a great number of suicide attempts came from the more heavily populated areas of Christchurch, Central Auckland Zone, South Auckland Zone and the Minor Urban Areas. "It has long been known that, usually, suicide and suicide attempts are proportionately more frequent in towns than in the country and that this is so in many parts of the world" (Capstick, 1960), so that the high number of attempts in these areas is expected to some extent. Note that Table 2.10 and Figure 2.19 are in ascending order so that the high frequency of suicide attempts in the heavily populated areas is obvious (from the high bars). The rate of suicide has to be considered before we can draw a final conclusion.

The rate of suicide attempts had been worked out and shown in Table 2.11 and Figure 2.20. Table 2.11 and Figure 2.20 are in ascending order among Main and Secondary Urban Areas for clarity and easy comparison within the same type of areas. Within the Main Urban Areas, we have the highest rate of suicide attempts in Palmerston North followed by Rotorua, whereas in the Secondary Urban Areas, the highest rate was from Gore followed by Oamaru. Table 2.11 shows that the rates not only vary from town to town (or city to city) but also within the same types of urbanization areas. For example, the rate in the Main Urban Areas range from 4.10 per 10,000 in Whangarei to 18.14 per 10,000 in Palmerston North and in Secondary Urban Areas the range is from 5.68 per 10,000 (Pukekohe) to 19.44 per 10,000 (Gore). The correlation between high Suicide Attempts Rate and Degrees of Urbanization is not obvious at all from Table 2.11. There are a few Secondary Urban Areas such as Gore, Oamaru, Ashburton and Masterton with high rates of suicide attempts. Indeed, the highest rate is from Gore which itself belongs to the Secondary Urban Areas.

Table 2.10 Frequency and Rate of Attempted Suicide by Urban and Rural Area (in ascending order by Total Number of Attempts).

	URBAN AND RURAL AREA	POPULATION	FREQUENCY	PERCENTAGE	RATE (T)[a]
1	PUKEKOHE	14085	8	0.3	5.68
2	GREYMOUTH	10725	11	0.4	10.26
3	HAWERA	11619	12	0.4	10.33
4	WHAKATANE	15954	15	0.5	9.40
5	FEILDING	12762	15	0.5	11.75
6	KAPITI	23007	17	0.6	7.39
7	WHANGAREI	43851	18	0.6	4.10
8	TAUPO	16104	18	0.6	11.18
9	TOKOROA	18546	21	0.7	11.32
10	GORE	11319	22	0.7	19.44
11	BLENHEIM	22917	22	0.7	9.60
12	OAMARU	13929	23	0.7	16.51
13	LEVIN	19005	23	0.7	12.10
14	ASHBURTON	15423	24	0.8	15.56
15	MASTERTON	19446	28	0.9	14.40
16	TIMARU	28587	31	1.0	10.84
17	WANGANUI	40383	36	1.2	8.91
18	PORIRUA BASIN ZONE	58047	39	1.3	6.72
19	GISBORNE	31944	41	1.3	12.83
20	INVERCARGILL	52977	42	1.4	7.93
21	NELSON	43545	45	1.5	10.33
22	UPPER HUTT VALLEY ZONE	35553	46	1.5	12.94
23	TAURANGA	58509	48	1.6	8.20
24	NAPIER	51240	52	1.7	10.15
25	NEW PLYMOUTH	47232	52	1.7	11.01
26	HASTINGS	53937	59	1.9	10.94
27	ROTORUA	48723	79	2.6	16.21
28	WEST AUCKLAND ZONE	126021	88	2.8	6.98
29	NORTH AUCKLAND ZONE	162549	100	3.2	6.15
30	DUNEDIN	106371	113	3.7	10.62
31	LOWER HUTT VALLEY ZONE	94488	118	3.8	12.49
32	PALMERSTON NORTH	66717	121	3.9	18.14
33	HAMILTON	100176	139	4.5	13.88
34	RURAL AREAS	519573	171	5.5	3.29
35	WELLINGTON CITY ZONE	134004	185	6.0	13.81
36	SOUTH AUCKLAND ZONE	247497	241	7.8	9.74
37	MINOR URBAN AREAS	303108	282	9.1	9.30
38	CENTRAL AUCKLAND ZONE	277641	285	9.2	10.27
39	CHRISTCHURCH	294150	400	12.9	13.60
	TOTAL		3090	100	

Note:
a The Total Number of Attempts per 10,000 people.

Table 2.11 Total Rate of Attempted Suicide in Ascending Order Within the Four Types of Areas.

	URBAN AND RURAL AREA	RATE (T)[a]	
1	WHANGAREI	4.10*[b]	
2	NORTH AUCKLAND ZONE	6.15	
3	PORIRUA BASIN ZONE	6.72	
4	WEST AUCKLAND ZONE	6.98	
5	INVERCARGILL	7.93	
6	TAURANGA	8.20	
7	WANGANUI	8.91	
8	SOUTH AUCKLAND ZONE	9.74	
9	NAPIER	10.15	
10	CENTRAL AUCKLAND ZONE	10.27	
11	NELSON	10.33	
12	DUNEDIN	10.62	Average = 10.73
13	TIMARU	10.84	
14	HASTINGS	10.94	
15	NEW PLYMOUTH	11.01	
16	LOWER HUTT VALLEY ZONE	12.49	
17	GISBORNE	12.83	
18	UPPER HUTT VALLEY ZONE	12.94	
19	CHRISTCHURCH	13.60	
20	WELLINGTON CITY ZONE	13.81	
21	HAMILTON	13.88	
22	ROTORUA	16.21	
23	PALMERSTON NORTH	18.14*	
24	PUKEKOHE	5.68*[c]	
25	KAPITI	7.39	
26	WHAKATANE	9.40	
27	BLENHEIM	9.60	
28	GREYMOUTH	10.26	
29	HAWERA	10.33	
30	TAUPO	11.18	
31	TOKOROA	11.32	
32	FEILDING	11.75	Average = 11.78
33	LEVIN	12.10	
34	MASTERTON	14.40	
35	ASHBURTON	15.56	
36	OAMARU	16.51	
37	GORE	19.44*	
38	MINOR URBAN AREAS	9.30	
39	RURAL AREAS	3.29	

Note:
a The Total Number of Attempts per 10,000 people.
b This group of 23 consists of Main Urban Areas.
c This group of 14 consists of Secondary Urban Areas.
* These cells are referred to in the text.

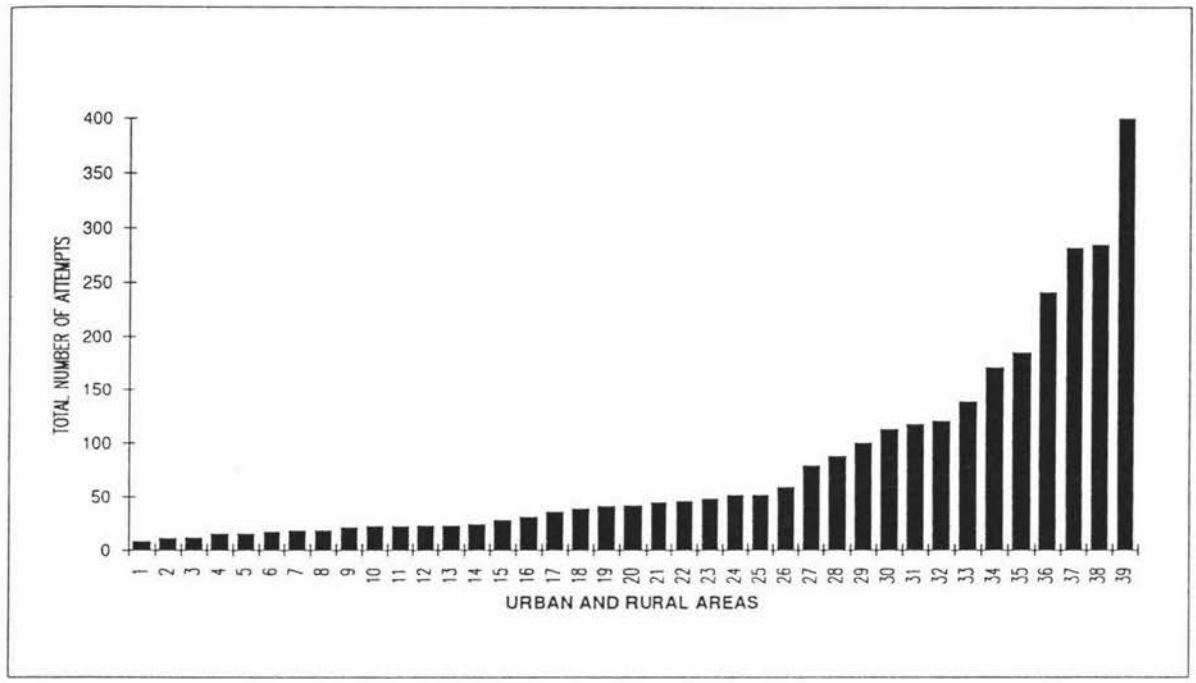


Figure 2.19 Total Number of Attempts in Urban and Rural Areas (in ascending order by Total Number of Attempts).

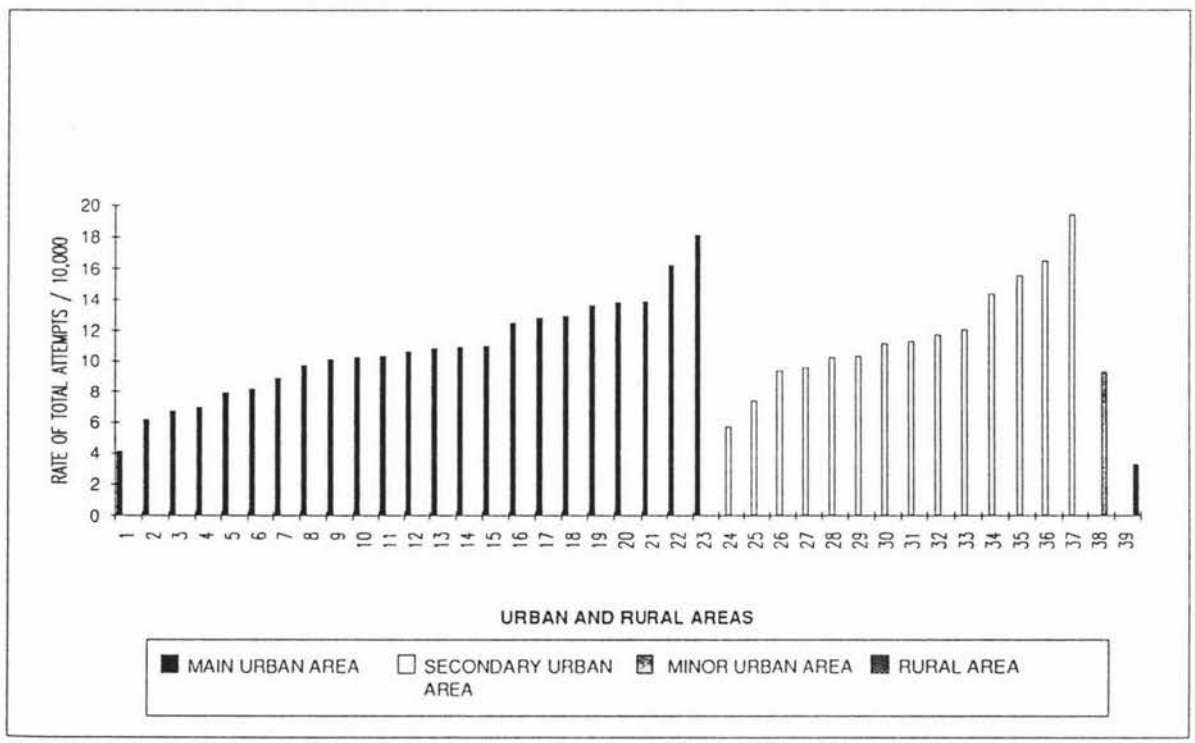


Figure 2.20 Rate of Attempts per 10,000 in Urban and Rural Areas.

Grouping of Main and Secondary Urban Areas

For the purposes of easier visual and comparison between different types of area, the twenty-three Main Urban Areas and fourteen Secondary Urban Areas were grouped among themselves which left us with the following four categories:

(1) Main Urban Area
(2) Secondary Urban Area
(3) Minor Urban Area
(4) Rural Area

From Table 2.12 and Figure 2.21, as expected, most of the people attempting suicide came from Main Urban Areas with the heaviest populations. Table 2.12 shows that New Zealand has many Minor Urban Areas around the country as the total populations in Minor Urban Areas is higher than Secondary Urban Areas. One would probably expect this to be the other way round.

In actual rate of suicide attempts (see Table 2.12 and Figure 2.22), the highest came from Secondary Urban Area followed by Main Urban Area with a similar rate. Thus, the rate of suicide attempts doesn't really correlate well with the degrees of urbanization in 1988 from the study of Morbidity Data.

Table 2.12 Frequency and Rate of Attempted Suicide by Combined Area.

COMBINED AREA	POPULATION	FREQUENCY	PERCENTAGE	RATE (T)[a]
MAIN URBAN AREA	2204142	2378	77.0	10.79
SECONDARY URBAN AREA	224841	259	8.4	11.52
MINOR URBAN AREA	303108	282	9.1	9.30
RURAL AREA	519573	171	5.5	3.29
TOTAL		3090	100	

Note:
a The Total Number of Attempts per 10,000 people.

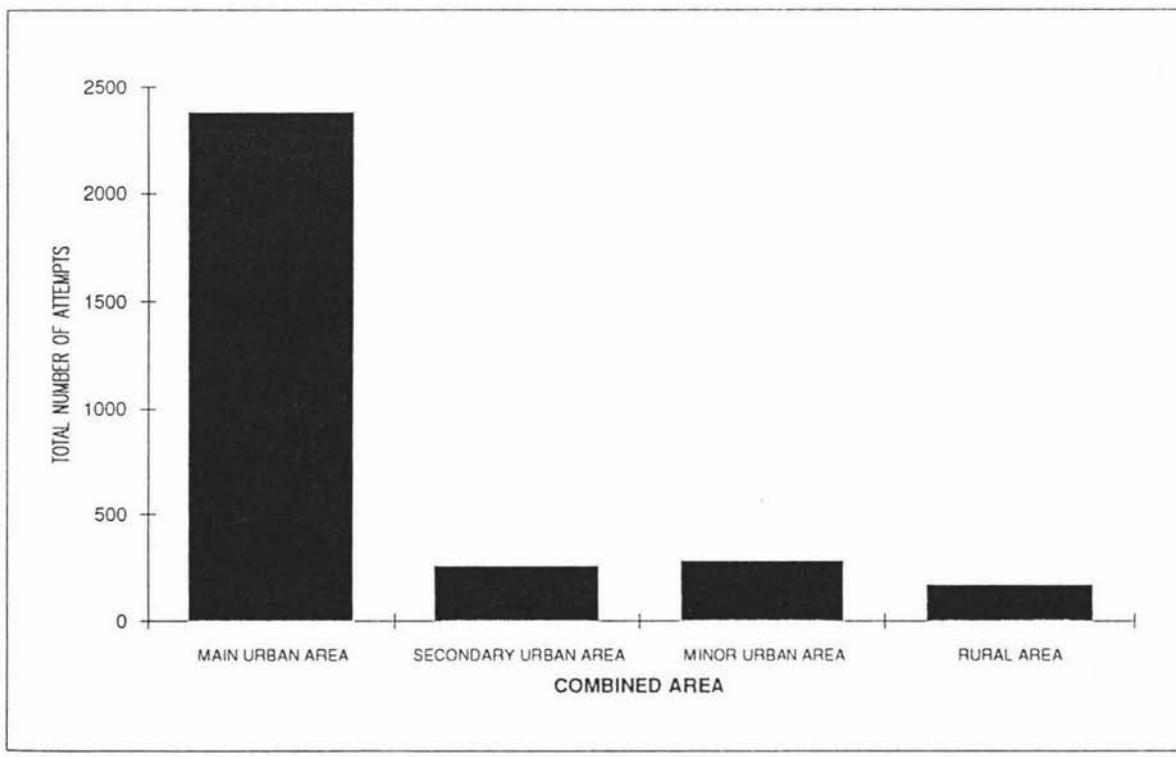


Figure 2.21 Total Number of Attempts by Combined Area.

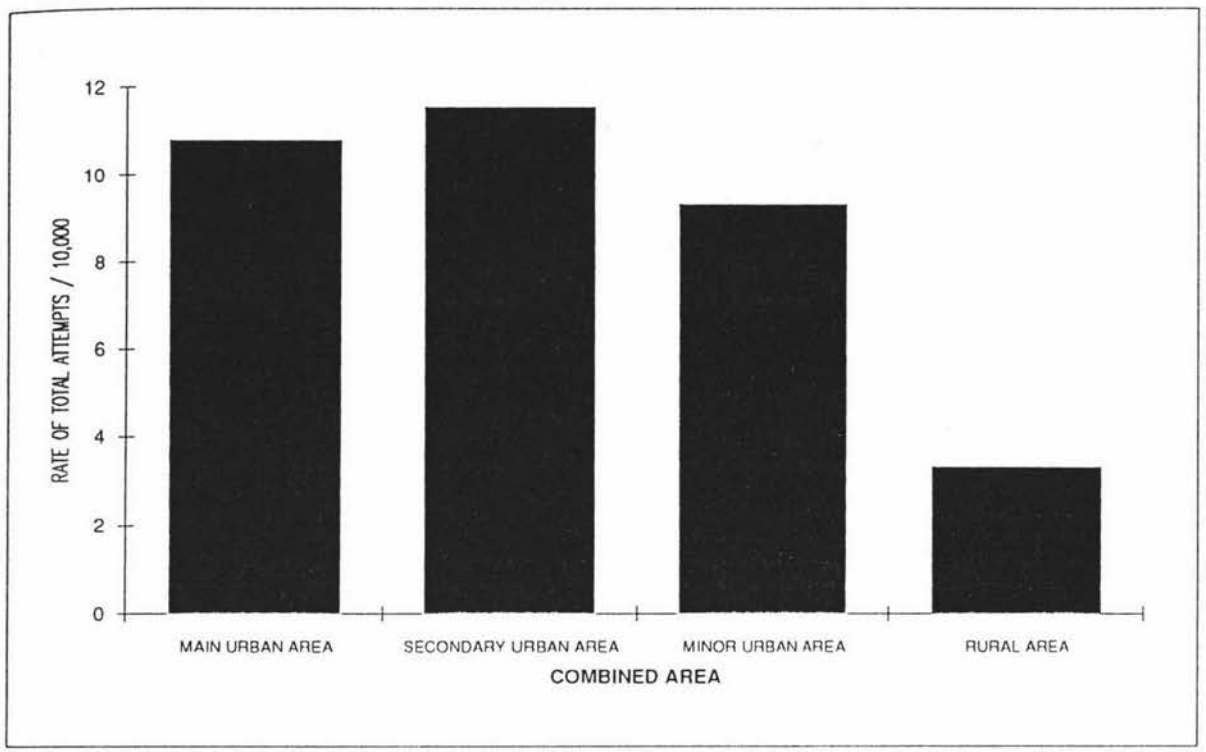


Figure 2.22 Rate of Attempts per 10,000 by Combined Area.

2.10 Time

In order to study the pattern of 1988 suicide attempts data of New Zealand over time, the variable 'Month', obtained from the 'Admission Date' has been used in this section of the study.

In Table 2.13, it is clear that the number of suicide attempts was fairly evenly distributed throughout the whole year, especially in terms of percentages which only differ by 1 or 2 percent.

Some seasonal aspects are shown when the frequencies of suicide attempts are plotted as in Figure 2.23. The climate seems to have a con-

siderable effect on the behaviour of suicide attempts since most suicide attempts occurred during the months of January, February and March. This is in agreement with the comments of Capstick and others referred to in Section 1.2.

Table 2.13 Frequency of Attempted Suicide by Month.

MONTH	FREQUENCY	PERCENTAGE
JANUARY	277	9.0
FEBRUARY	265	8.6
MARCH	286	9.3
APRIL	257	8.3
MAY	255	8.3
JUNE	228	7.4
JULY	233	7.5
AUGUST	256	8.3
SEPTEMBER	253	8.2
OCTOBER	257	8.3
NOVEMBER	266	8.6
DECEMBER	257	8.3
TOTAL	3090	100

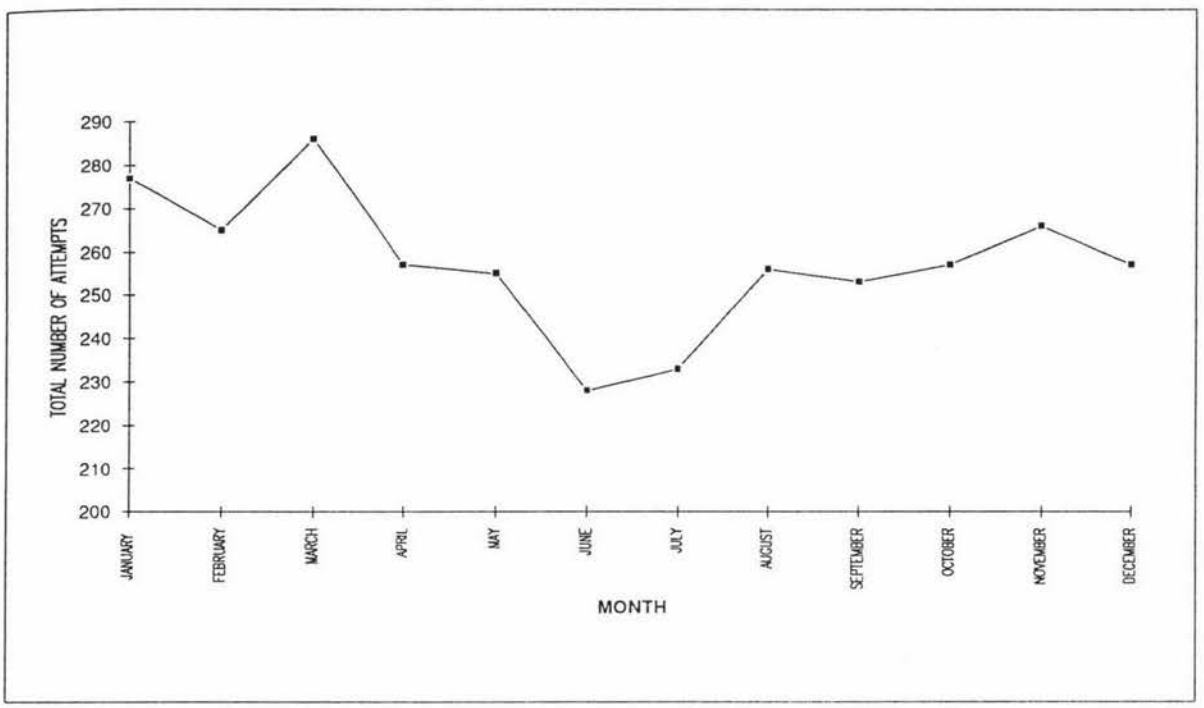


Figure 2.23 Total Number of Attempts by Month.

Chapter 3
Differences Between the Sexes

3.0 Introduction

Lester (1969) noted that "Studies of suicide in the United States have indicated that the completed suicide rate is higher for men than for women, whereas the attempts suicide rate is higher for women than for men". This was found to be the case in our study as 61.8% of the attempts were by females and 38.2% by males but completed suicides were more common among men (2.3%) than women (0.9%). One explanation for the difference in success rate could be that males tend to use more active methods in their attempts and females more passive methods.

It is then interesting and worthwhile, to search for differences between the sexes in the New Zealand data. For example, do males and females differ in their preferred methods? Do males have more attempted suicides in the older age-groups? Such questions will be studied in this chapter.

3.1 Length of Stays in Hospital After Attempted Suicide

From Table 3.1, it is clear that males had a slightly higher percentage

than females for longer stays in hospital (4 days or more). This may be related to the methods used in suicide attempts for, as we will see later, males tend to use more active methods than females which result in more serious medical conditions and, therefore, need longer stays in hospital to recover. This will be clear when we look at the 'Method' and 'Number of Days Stay in Hospital' in Chapter 4.

About 50% of both females and males were discharged on the same day or after only one day after admission. It is interesting to note that the numbers of both males and females reduced by about one half from 1 to 2 days, and this trend continued to day 5. From day 5 to day 6, the numbers remained fairly constant but the reduction continued to day 7. As mentioned in Chapter 1, there may be some ambiguity with the coding of 0 and 1 day stays.

To examine whether the length of stay was similar for both sexes, a chi-square test was carried out on the frequency of attempts, giving a value of 12.7 with degrees of freedom equal to 10. The chi-squared statistics was not significant at the 10% level so that there is little statistical evidence for the dissimilarity between the sexes in the length of stay.

Table 3.1 Frequency of Attempted Suicide of Number of Days Stay in Hospital by Gender.

DAYS STAY	FEMALE FREQUENCY	PERCENTAGE OF FEMALE FREQUENCY	MALE FREQUENCY	PERCENTAGE OF MALE FREQUENCY
0	236	12.3	145	12.3
1	739	38.7	446	37.8
2	358	18.7	182	15.4
3	182	9.5	108	9.2
4	82	4.3	65	5.5
5	49	2.6	34	2.9
6	45	2.4	32	2.7
7	19	1.0	18	1.5
8	17	0.9	11	0.9
9	19	1.0	12	1.0
10 OR MORE	165	8.6	126	10.7
TOTAL	1911	100	1179	100

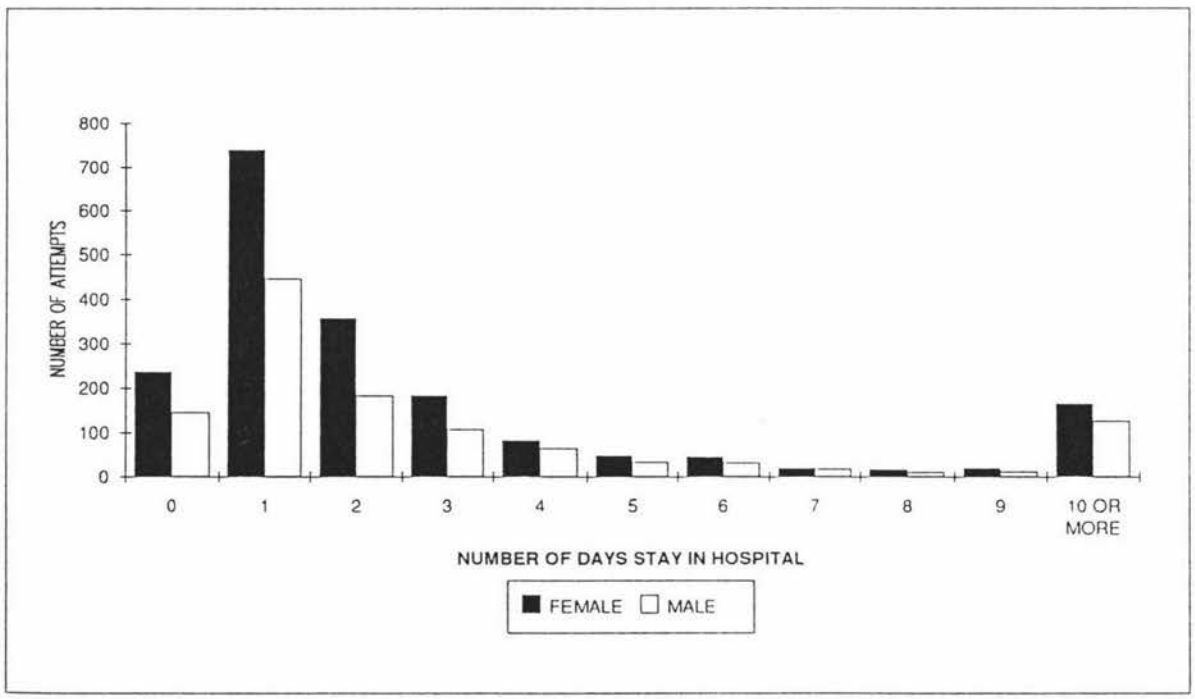


Figure 3.1 Number of Attempts by Gender and Number of Days Stay in Hospital.

3.2 Ethnicity

Suicide attempts show differences for different ethnic groups (see Section 2.3). In this section, we will examine these differences for each sex.

A greater number of females than males of all races, apart from Pacific Islander, attempt suicide (see Table 3.2). Although females from the categories Maori, Chinese and Indian have a smaller population compared to the male population, their frequencies of suicide attempts are greater.

The female suicide rate per 10,000 people is seen to be quite high in all ethnic groups. Compared to Pacific Islanders, the rest have a higher rate of females attempting suicide. The rate for Maori women is at least twice as much as each of the remaining groups. Indian females who have the lowest number of attempts, show a different picture after the female population was taken into account as their rate of attempts is higher than Europeans, Pacific Islanders and Chinese. This big difference is mainly caused by the small number of Indian females which changes greatly when the rate is calculated.

Apart from the category Pacific Islander, males have a lower rate of attempts compared to females. Once again, the Indian females who only have four attempts recorded had a higher rate of attempts compared to Europeans who had the highest number of attempts recorded in this sex group. Chinese males have a low rate relative to other male groups. Maoris have the highest rate of suicide attempts in both sexes. The category of Others should not be considered seriously as the large rate arise out of difficulties in comparing the two sources of data, morbidity and census.

Categories Chinese, Maori and Indian were the top three in terms of rank for the proportion of females rate relative to males, which is to be expected after the above discussion. Chinese females have more than four times the male suicide attempt rate, but the high differences in the suicide attempts rate compared to other races could be due to the small population, as the small number of suicide attempts could affect the suicide attempts rate by a large amount. Only for Pacific Islanders is the female rate below that of the male rate.

Once again, there are problems with the category Others as mentioned in Section 2.3. For similar reasons, category Others is not included in Figure 3.3.

For the reasons mentioned in Section 2.3, figures without the cases of ages under 10 were also calculated for the sexes in Table 3.2a. Both sexes had increased in rate of attempts in every group. Rank of the rate were also the same for the sexes. Apart from Indians, others had slightly drop in the ratio of female rate to male rate of attempts. Overall, the values for F/M(%) column from the two tables were not much different.

Table 3.2 Frequency and Rate of Attempted Suicide of Race by Gender.

RACE	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE RATE[a]
EUROPEAN	1403322	1350	9.62
MAORI	151650	305	20.11
PACIFIC ISLANDER	50298	32	6.36
CHINESE	9789	8	8.17
INDIAN	5868	6	10.22
OTHERS	25689	210	81.75[c]

RACE	MALE POPULATION	MALE FREQUENCY	MALE RATE[a]	F/M(%)[b]
EUROPEAN	1373601	822	5.98	160.8
MAORI	152397	175	11.48	175.1
PACIFIC ISLANDER	50670	36	7.10	89.5
CHINESE	10080	2	1.98	411.9
INDIAN	6588	4	6.07	168.4
OTHERS	23331	140	60.01[c]	136.2

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
c The Rates for this group, Others, are spuriously large.

Table 3.2a Frequency and Rate of Attempted Suicide of Race by Gender (without the cases of ages under 10).

RACE	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE RATE[a]
EUROPEAN	1211520	1349	11.13
MAORI	115824	304	26.25
PACIFIC ISLANDER	38874	31	7.97
CHINESE	8487	8	9.43
INDIAN	4845	6	12.38

RACE	MALE POPULATION	MALE FREQUENCY	MALE RATE[a]	F/M(%)[b]
EUROPEAN	1172664	820	6.99	159.2
MAORI	114975	174	15.13	173.4
PACIFIC ISLANDER	38550	36	9.34	85.4
CHINESE	8724	2	2.29	411.2
INDIAN	5529	4	7.23	171.2

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.

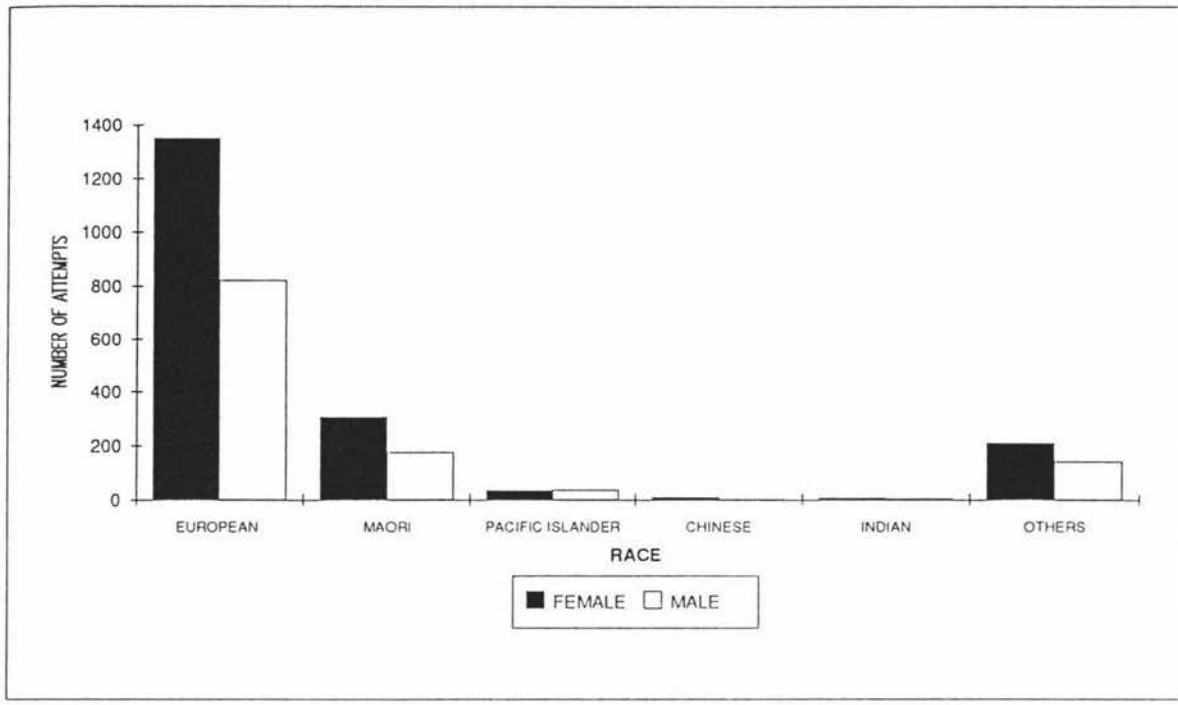


Figure 3.2 Number of Attempts by Gender and Race.

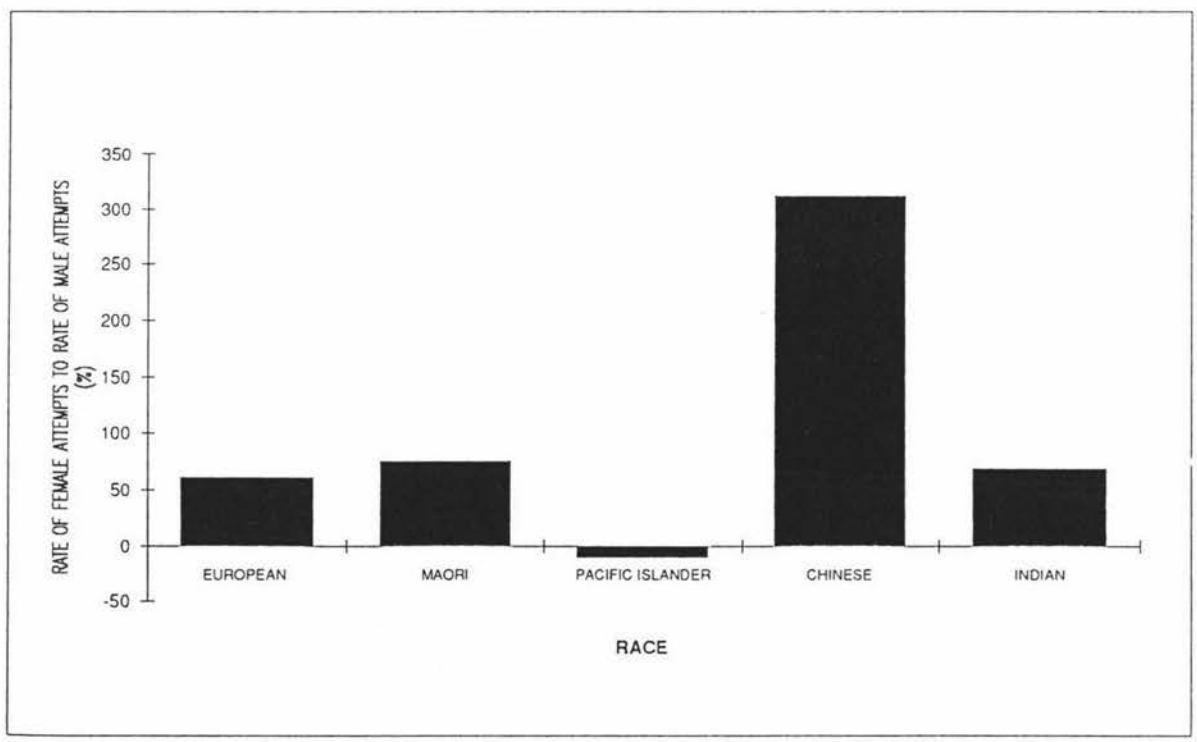


Figure 3.3 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

3.3 Marital Status

It was noted in Section 2.4 that those currently living in a relationship or who were widowed had the lowest rate of attempted suicide. In this section we shall study whether those findings are similar for both sexes.

Apart from the Unknown category, females have a higher number of suicide attempts than males in all other categories (see Table 3.3). As expected, the Single category has the highest number of attempts in both sexes. Although the total population of single males was about 90,000 more than females, the number of suicide attempts for females was much more than for males. The high number of suicide attempts in the Single category for both sexes could reflect the problem of suicide by young people in the present society. This will be explored in more detail in Chapter 4.

The Separated category which was found to have the highest total rate of suicide attempts in the previous chapter again had the highest suicide attempts rate in both sexes with the rate for females, 33.70 per 10,000 people, being more than twice the average rate of 15.26 per 10,000 people and the male rate, 26.01 per 10,000 people, being almost 2.5 times the average rate of 11.06 per 10,000 people. The category Divorced has the second to highest rate for both females, 20.45 per 10,000 people, and for males, 13.68 per 10,000 people.

The column marked 'F/M(%)' in Table 3.3 refers to the ratio of the female to the male rate of attempts. When the populations of both sexes were taken into account, it can be seen that apart from the Widowed group, other categories have a higher suicide attempts rate for fe-

males than males, which is indicated by the ratio, F/M, being greater than 100%.

The attempt rates by females were named in ascending order as in Figure 3.5. This figure and Table 3.3 show that Married and Widowed categories have the lowest attempted rates for both sexes, with married men having the lowest rate of all. Comparing the female and male rate of attempts in percentage (Table 3.3 and Figure 3.6), the Married category had the highest percentage followed closely by Single. The high percentage for single people was mentioned in an earlier paragraph by single females having a higher frequency than single males but the population was smaller compared to the single males population. The suicide attempts rate of married women is almost double the rate of married men. Being married seems to be more of an advantage for men than for women.

Again, the problem of young people being included in the rates which was mentioned in Section 2.4 also occurred here. Therefore, the figures of the group Single (for 10+ Years) were calculated. Both sexes showed an increasing rate of attempts without those cases under 10 years. Females, originally with the rate of 16.13 per 10,000 increased to 25.21 per 10,000 and Males, increased from 9.16 per 10,000 to 13.71 per 10,000. Overall, both sexes increased the ranks to the second highest. The ratio of the female to the male rate of attempts also showed an increasing value from 176.1% to 183.8% which is the highest of all the groups.

Table 3.3 Frequency and Rate of Attempted Suicide of Marital Status by Gender.

MARITAL STATUS	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE RATE[a]
MARRIED	679263	433	6.37
DE FACTO	57480	56	9.74
DIVORCED	43518	89	20.45
SEPARATED	40647	137	33.70
WIDOWED	130983	68	5.19
SINGLE[f]	677757	1093	16.13
SINGLE (10+ YEARS)[f]	432048[d]	1089[e]	25.21
UNKNOWN	16965[d]	35[e]	-[c]

MARITAL STATUS	MALE POPULATION	MALE FREQUENCY	MALE RATE[a]	F/M(%)[b]
MARRIED	677817	239	3.53	180.8
DE FACTO	57549	41	7.12	136.7
DIVORCED	30711	42	13.68	149.5
SEPARATED	32676	85	26.01	129.6
WIDOWED	30726	21	6.83	76.0
SINGLE[f]	768666	704	9.16	176.1
SINGLE (10+ YEARS)[f]	511278[d]	701[e]	13.71	183.8
UNKNOWN	18522[d]	47[e]	-[c]	-

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
c The Rates for Unknown in both sexes were not calculated as the Population (d) may have a different profile to those in Attempts (e).
d The population of the category Unknown in the 1986 census.
e The frequency of the category Unknown in the 1986 census.
f Calculated without the cases of ages under 12.

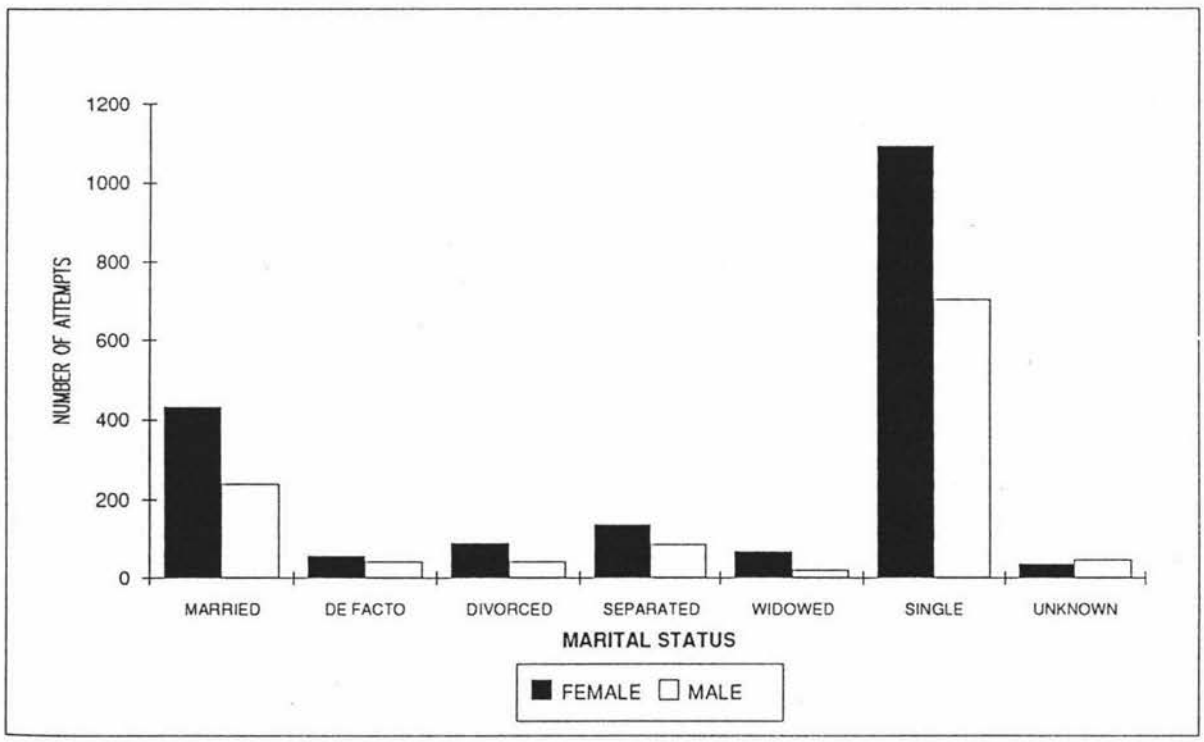


Figure 3.4 Number of Attempts by Gender and Marital Status.

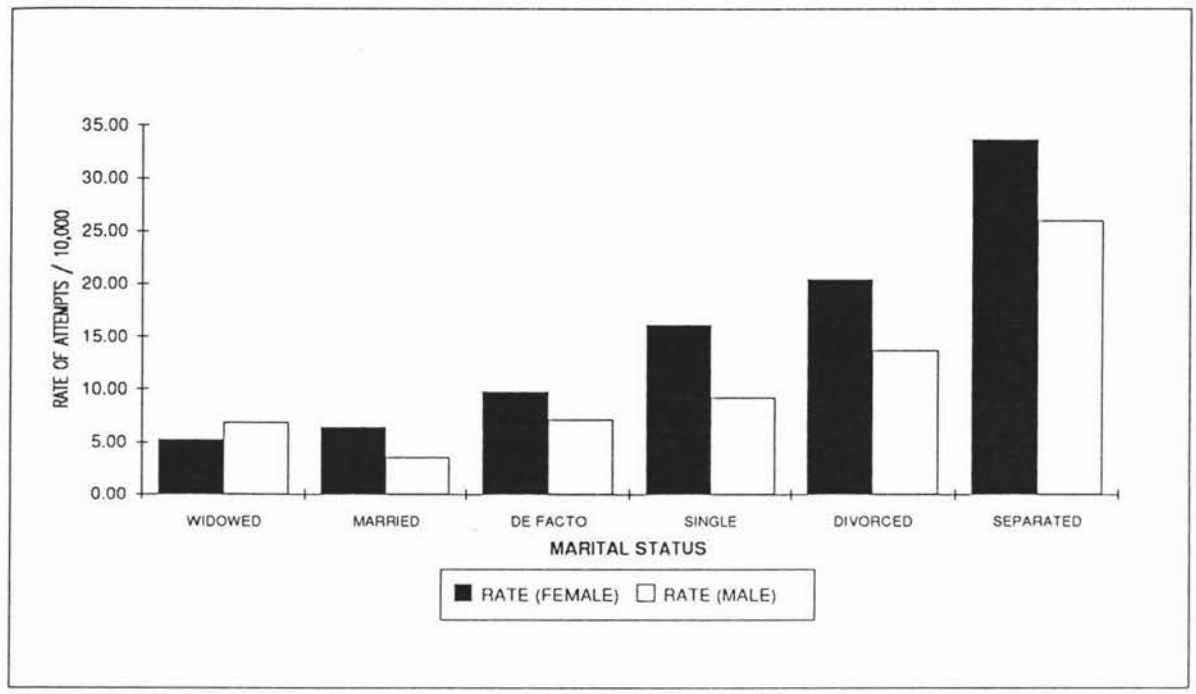


Figure 3.5 Rate of Attempts per 10,000 by Gender and Marital Status.

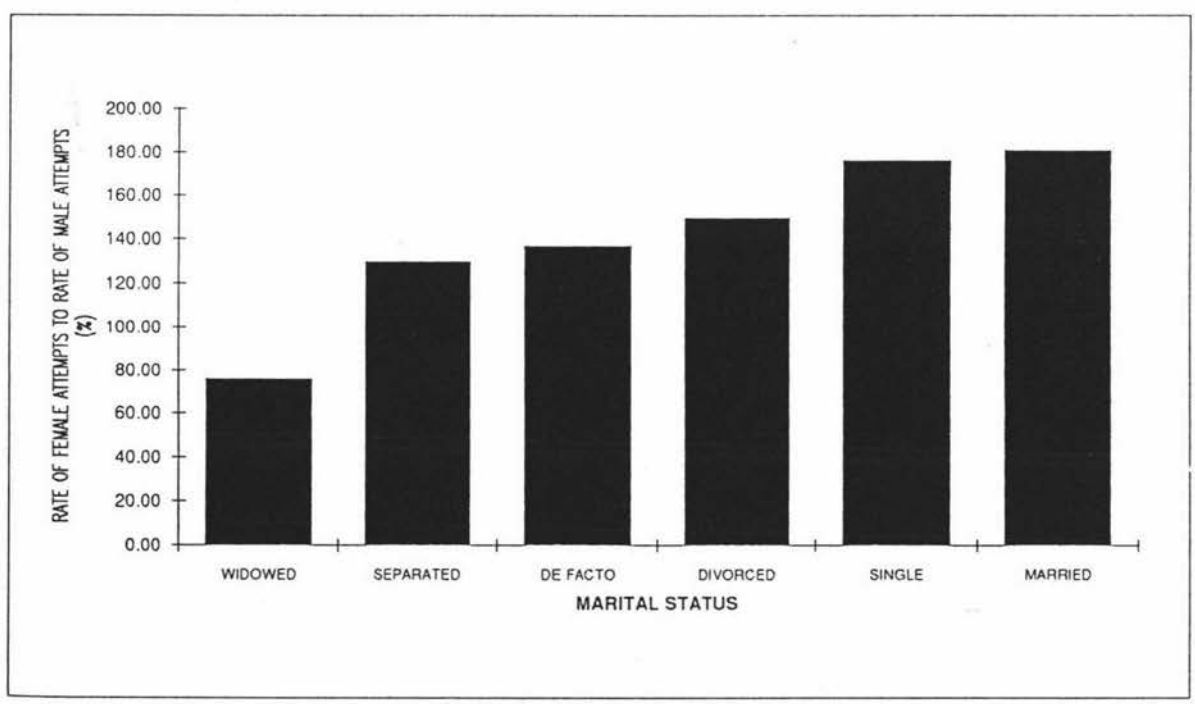


Figure 3.6 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

3.4 Ages

The youthfulness of the cases of attempted suicide is striking for both sexes with 64.8% under 30 years and 33.3% under 20 years for females, while for males 59.0% were under 30 years and 24.6% under 20 years.

Females have a higher number of suicide attempts than males in most groups apart from ages between 1-11 and over 80 (see Figure 3.7). Again, as mentioned in Section 2.5, cases of suicide attempts from ages 1 and 2 have a high chance of being miscoded and in doubt for those of ages under 12. Both sexes showed a downward trend in suicide attempts after age 19, with possible plateaux in the regions of ages 30 to 40 and ages 50 to 68 which is consistent with the pattern, mentioned before of the total group. Figure 3.7 shows that young people have a much higher number of suicide attempts than those in older age-groups for both sexes.

Age-groups

To view the trends in a different way, ages are grouped into 19 age-groups. Figure 3.8 shows the histogram of the number of attempts in different age-groups. Again young people have a higher number of suicide attempts than elderly people for both sexes. Table 3.4 and Figure 3.8 show that apart from ages 85-100, females have an equal or higher number of suicide attempts than males in other age-groups.

When the suicide attempts are converted to rates, the pattern does not change dramatically which is to be expected as the population totals in the

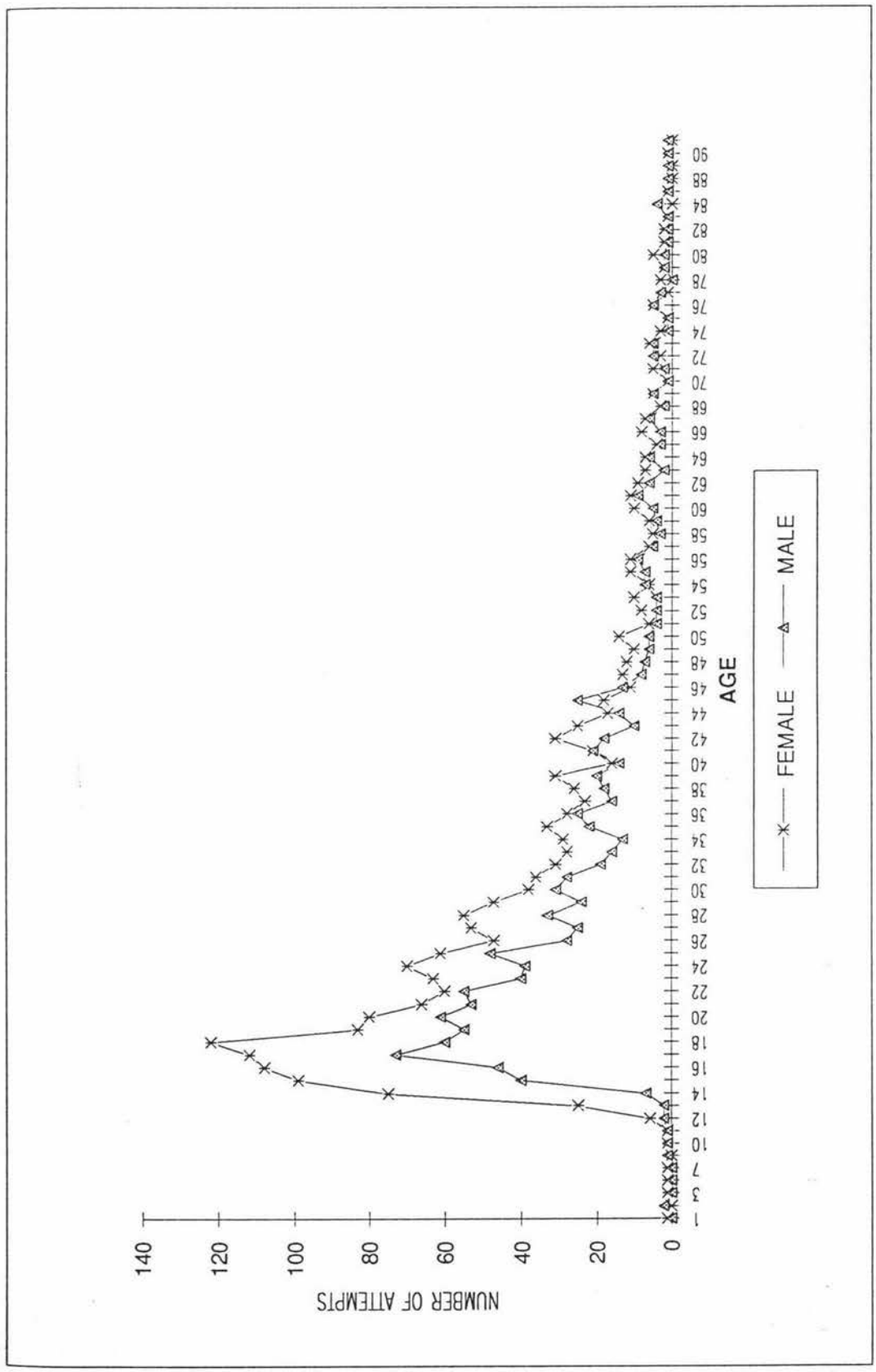


Figure 3.7 Number of Attempts by Gender and Age.

Table 3.4 Frequency and Rate of Attempted Suicide of Age-group by Gender.

AGE-GROUP	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE[a] RATE
0 -- 4	121419	2	0.16
5 -- 9	124290	2	0.16
10 -- 14	142995	108	7.55
15 -- 17	90240	319	35.35
18 -- 19	56928	205	36.01
20 -- 24	139842	339	24.24
25 -- 29	134163	263	19.60
30 -- 34	124122	162	13.05
35 -- 39	120246	141	11.73
40 -- 44	95361	110	11.54
45 -- 49	82665	64	7.74
50 -- 54	71250	44	6.18
55 -- 59	73188	39	5.33
60 -- 64	70995	44	6.20
65 -- 69	62097	27	4.35
70 -- 74	53541	18	3.36
75 -- 79	39942	12	3.00
80 -- 84	24816	10	4.03
85 -- 100	18516	2	1.08

AGE-GROUP	MALE POPULATION	MALE FREQUENCY	MALE[a] RATE	F/M(%)[b]
0 -- 4	127656	2	0.16	105.14
5 -- 9	129732	1	0.08	208.76
10 -- 14	148893	13	0.87	865.04
15 -- 17	93906	159	16.93	208.78
18 -- 19	59019	115	19.49	184.81
20 -- 24	143052	248	17.34	139.83
25 -- 29	132897	158	11.89	164.88
30 -- 34	121893	107	8.78	148.68
35 -- 39	119868	101	8.43	139.17
40 -- 44	95988	77	8.02	143.80
45 -- 49	83451	59	7.07	109.51
50 -- 54	73317	25	3.41	181.11
55 -- 59	75987	28	3.68	144.61
60 -- 64	67812	28	4.13	150.10
65 -- 69	52365	19	3.63	119.83
70 -- 74	42000	14	3.33	100.86
75 -- 79	27495	11	4.00	75.10
80 -- 84	14067	9	6.40	62.98
85 -- 100	7266	5	6.88	15.70

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.

various age-groups do not vary much from male to female. Apart from ages between 75-100, females have higher rates of suicide attempts, especially in the age-group 10-14 where females have a rate almost 9 times higher than males and this is clearly shown in Figure 3.10. The male rate increased in the last few age-groups. This is an interesting finding as we have mentioned in Section 3.3 that widowed males have a higher attempted rate than widowed females. Also, in the age-group of 45-49, the male rate is nearly as high as for females.

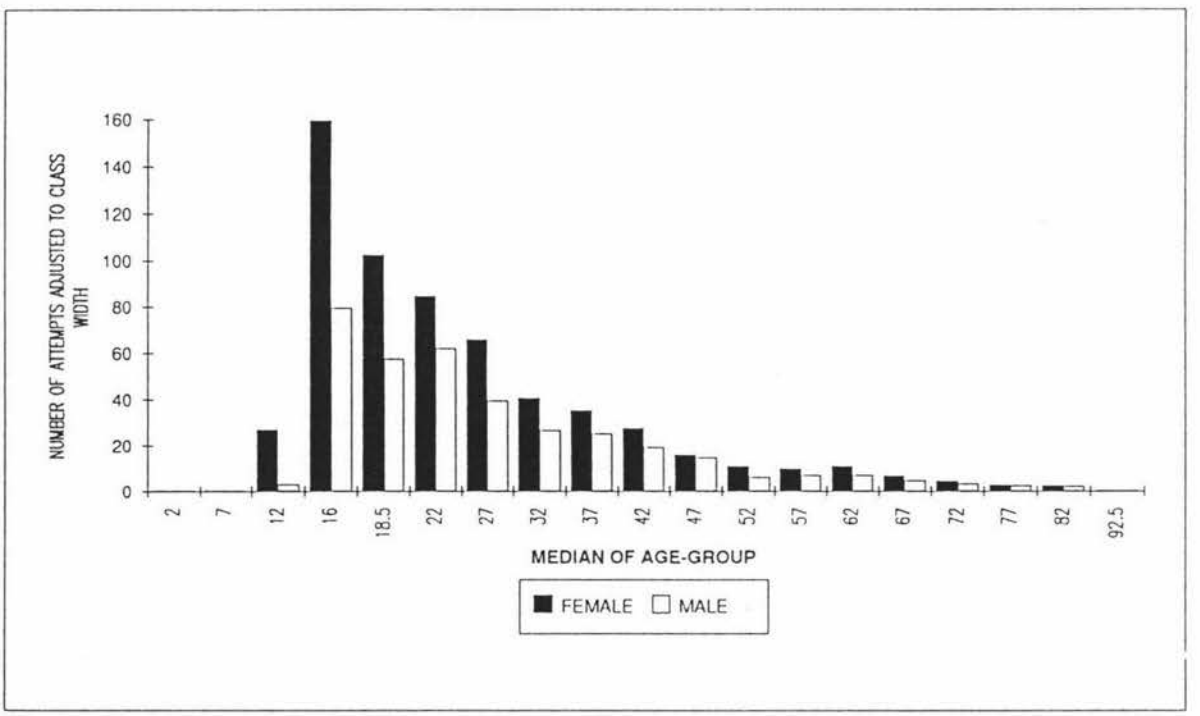


Figure 3.8 Histogram of Number of Attempts in Age-group.

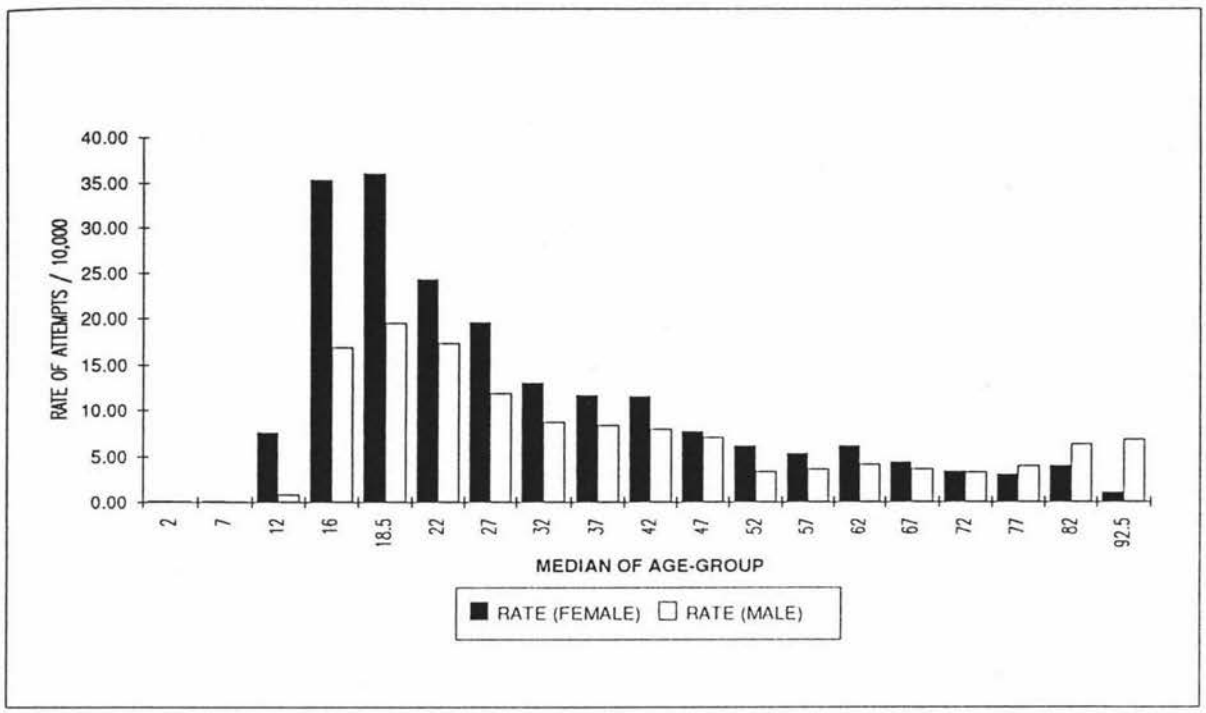


Figure 3.9 Rate of Attempts per 10,000 by Gender and Median of Age-group.

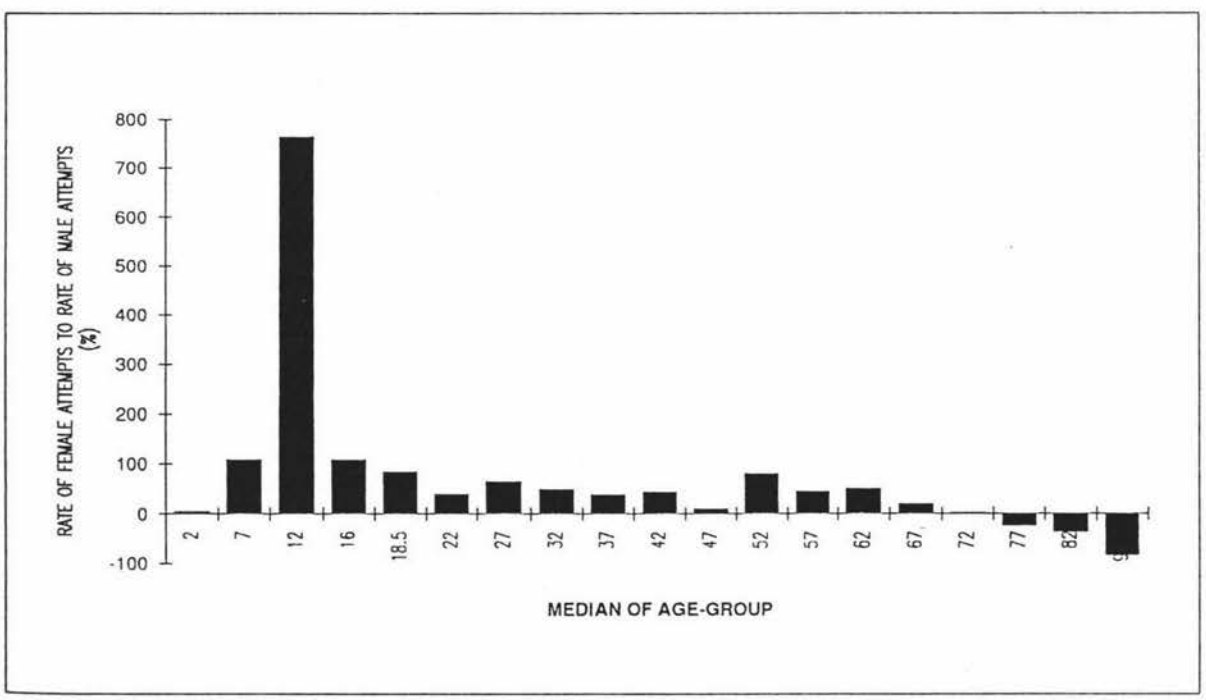


Figure 3.10 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

Ages 14-26 years

The skewness of the distribution is shown in Figures 3.7 and 3.11, and the descriptive statistics:

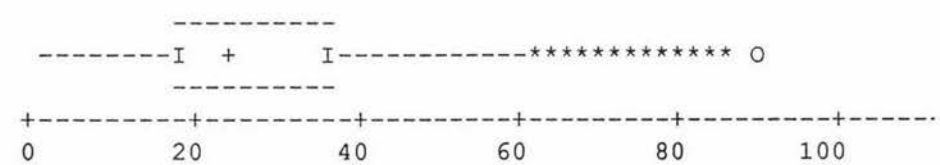
	Female	Male
Mode	18.00	17.00
Median	24.00	26.00
Mean	28.83	30.96
Lower Quartile	18.00	20.00
Upper Quartile	36.00	39.00
Interquartile Range	18.00	19.00
Standard Deviation	14.62	15.43

The descriptive statistics indicate a higher number of young females attempted suicide compared to males. Both sexes have a similar number of possible outliers and a probable outlier. The skewness of the distributions in both sexes is positively skewed.

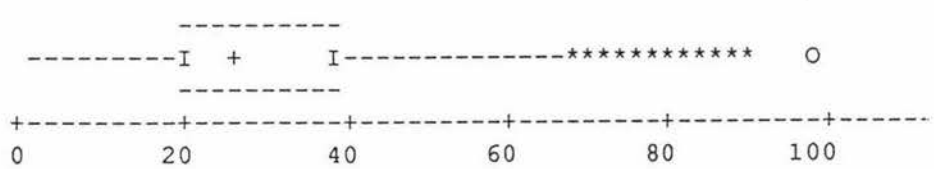
Both sexes have the highest number of suicide attempts between the ages of 14-26 years, and also the biggest differences between the sexes occur in this range. Similar to the pattern of the combined group, each sex has a peak at 17 or 18 years. Table 3.5 reveals clear differences in trends between the sexes over this age range. The mode for females is age 18 but the numbers of attempts for ages 15, 16 and 17 are higher than the other side of the mode. Females attempt suicide at a younger age than males with the difference being quite surprising at the age of 14. A different trend appears for males as the mode is age 17 and the numbers for age 14 is much lower compared to other ages. Ages 18-

21 have a higher number of attempts compared to the other side of mode.

As the populations from both sexes in this age range do not vary much, the distributions of the rate from both sexes follow the frequency of attempts very closely, which is clearly shown in Figure 3.12. Obviously females have a higher rate of suicide attempts than males for ages 14-26. Within this age range, females have the highest rate at age 18 followed by age 17, whereas males have the highest rate at age 17, followed by age 20.



FEMALE



MALE

Figure 3.11 Boxplot of Age by Gender.

Table 3.5 Frequency and Rate of Attempted Suicide of Age14-26 by Gender.

AGE	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE RATE[a]	MALE POPULATION	MALE FREQUENCY	MALE RATE[a]
14	30684	75	24.44	31758	7	2.20
15	30495	99	32.46	31539	40	12.68
16	30258	108	35.69	31626	46	14.54
17	29487	112	37.98	30741	73	23.75
18	28728	122	42.47	29544	60	20.31
19	28200	83	29.43	29475	55	18.66
20	27300	80	29.30	28701	61	21.25
21	27750	66	23.78	28731	53	18.45
22	27996	60	21.43	28611	55	19.22
23	28362	63	22.21	28644	40	13.96
24	28434	70	24.62	28365	39	13.75
25	27912	61	21.85	27918	48	17.19
26	27258	47	17.24	26949	28	10.39

Note:
a The Number of Attempts per 10,000 people.

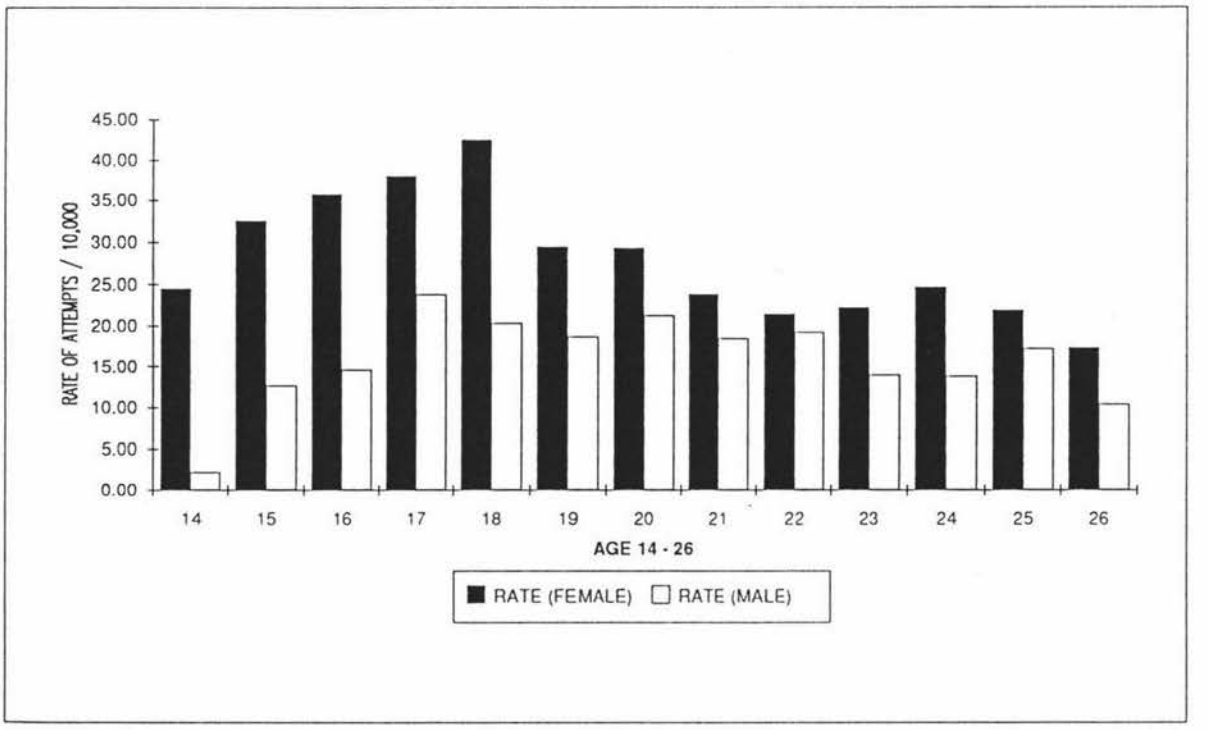


Figure 3.12 Rate of Attempts per 10,000 by Gender and Age 14-26.

3.5 Discharge Types

Both females and males have the highest numbers from the DR (Discharge, Routine) group (Table 3.6) as is the case for combined sexes that we have seen in Section 2.6. Figure 3.13 was plotted without DR categories and now females have the highest number for category SG (Discharge to General Hospital, Same Board) followed by SP (Discharge to Psychiatric Hospital, Same Board). Males also have the highest frequency for DR but the numbers in the categories SG and SP are equal. Females have a slightly higher number of attempts than males in most of the categories but this is not so when we take the percentages of the categories from each sex. In terms of percentage, males have a higher percentage in most of the Discharge Types other than the DR category.

The main difference between sexes is in the DR category, where females comprise almost twice the number of males. A chi-square test was carried out on the frequency of attempts without DR to test for the similarity between the sexes. Categories like PN, SM, SO, OP, PG, PP and PO were combined in order to match the requirement, n greater or equal to 5. This resulted in chi-square value of 8.3 with degrees of freedom equal to 6 which is not significant at the 10% level. There is no strong evidence statistically for the sexes to be declared significantly different in discharge types.

Grouping of Discharge Types

Kessler and McRae (1983) noted that "women are more likely than men to obtain psychiatric treatment for comparable feelings of distress". Ear-

lier in this chapter, it was mentioned that in 1969, Lester found in his study that females attempted suicide more than males but the completed suicides are more common among men than women. It would be interesting to know if all these points were demonstrated by the New Zealand data. This leads to a study of the grouping of Discharge Types in a similar way as in Section 2.6.

Although the number of females who attempted suicide was higher than the males, the attempts resulted in a much higher death (DD) rate for males, 27, compared with 18 for females. Females have a higher number of discharges to Psychiatric Hospitals (OP, PP, SP) than males, 59 compared with 45, but not in terms of percentages, 3.1% and 3.8%. The discharge pattern for males and females is closely linked to the method used in the suicide attempts and this is considered in the next chapter.

Table 3.6 Frequency of Attempted Suicide of Discharge Type by Gender.

DISCHARGE TYPE	FEMALE FREQUENCY	FEMALE PERCENTAGE	MALE FREQUENCY	MALE PERCENTAGE
DR	1682	88.0	991	84.1
DD	18	0.9	27	2.3
DS	29	1.5	20	1.7
DI	35	1.8	33	2.8
PN	2	0.1	3	0.3
SG	64	3.3	44	3.7
SM	1	0.1	0	0.0
SP	47	2.5	44	3.7
SO	4	0.2	3	0.3
OG	16	0.8	11	0.9
OP	7	0.4	1	0.1
PG	0	0.0	1	0.1
PP	5	0.3	0	0.0
PO	1	0.1	1	0.1
TOTAL	1911	100	1179	100

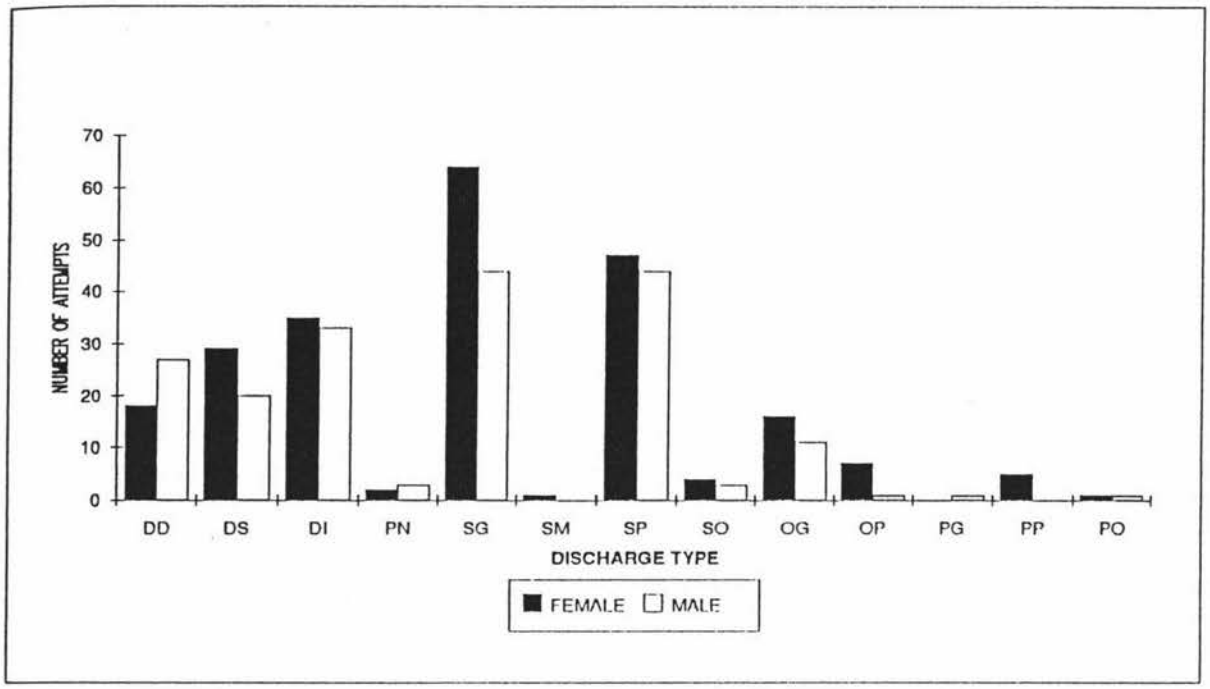


Figure 3.13 Number of Attempts by Gender and Discharge Type (without Routine Discharge category).

Table 3.7 Frequency of Attempted Suicide of Combined Discharge Type by Gender.

DISCHARGE TYPE	FEMALE FREQUENCY	PERCENTAGE OF FEMALE FREQUENCY	MALE FREQUENCY	PERCENTAGE OF MALE FREQUENCY
DEATH	18	0.9	27	2.3
REGULAR	1746	91.4	1044	88.5
PSYCHIATRIC	59	3.1	45	3.8
OTHERS	88	4.6	63	5.3
TOTAL	1911	100	1179	100

3.6 Ecode (Methods)

"For many years, unsuccessful suicide attempts were assumed to be failed instances of suicide that failed more because of method than motivation" (Kessler and McRae, 1983). Linehan (1973) noted "One common explanation of the sex difference in both types of suicidal behaviour is that males use more lethal methods and therefore they are more successful". In the 1988 Morbidity Data of New Zealand, males had a higher success rate than females which was noted in Section 3.5, and here we would like to explore the relationship between the methods used and the high rate of success for males.

Table 3.8 shows that 'Poisoning by Solid or Liquid Substances' accounts for the highest number of suicide attempts in both sexes. The number of attempts from females is about twice that of males in category 'Poisoning by Solid or Liquid Substances'. Males have more suicide attempts in most categories except 'Poisoning by Solid or Liquid Substances' and 'Submersion (drowning)'. Comparing the percentages between the sexes, males from categories 'Poisoning by Gases in Domestic Use', 'Poisoning by Other Gases and Vapours', 'Hanging, Stangulation and Suffocation', 'Firearms and Explosives', 'Cutting and Piercing Instruments', 'Jumping from High Place', 'Other and Unspecified means' and 'Late Effects of Self-Inflicted Injury' have a higher percentage than females by at least a factor of two. In the categories 'Poisoning by Other Gases and Vapours', 'Firearms and Explosives' and 'Late Effects of Self-Inflicted Injury', males have a higher percentage by at least a factor of four.

About 12.7% of males used active methods such as cutting, drowning,

hanging, jumping from high place and shooting during the attempts but only 4.4% of females used such methods. This indicates that the method used may have a strong relationship with the higher male success rate. Figure 3.14 was plotted without 'Poisoning by Solid or Liquid Substances' as this was used in a much higher number of attempts than other categories. 'Cutting and Piercing Instruments' seems to be the next most common method for both sexes. 'Firearms and Explosive' only explained 0.2% in the females group and 0.8% for the males group. Methods of 'Submersion (drowning)' and 'Late Effects of Self-Inflicted Injury' only appear in a few cases.

Table 3.8 Frequency of Attempted Suicide of Ecode (Method) by Gender.

ECODE (METHOD)	FEMALE FREQUENCY	PERCENTAGE OF FEMALE FREQUENCY	MALE FREQUENCY	PERCENTAGE OF MALE FREQUENCY
E9500-9509	1778	93.0	931	79.0
E9510-9519	2	0.1	3	0.3
E9520-9529	15	0.8	45	3.8
E9530-9539	9	0.5	20	1.7
E9540-9549	5	0.3	1	0.1
E9550-9559	4	0.2	10	0.8
E9560-9569	58	3.0	107	9.1
E9570-9579	8	0.4	12	1.0
E9580-9589	27	1.4	36	3.1
E9590-9599	5	0.3	14	1.2
TOTAL	1911	100	1179	100

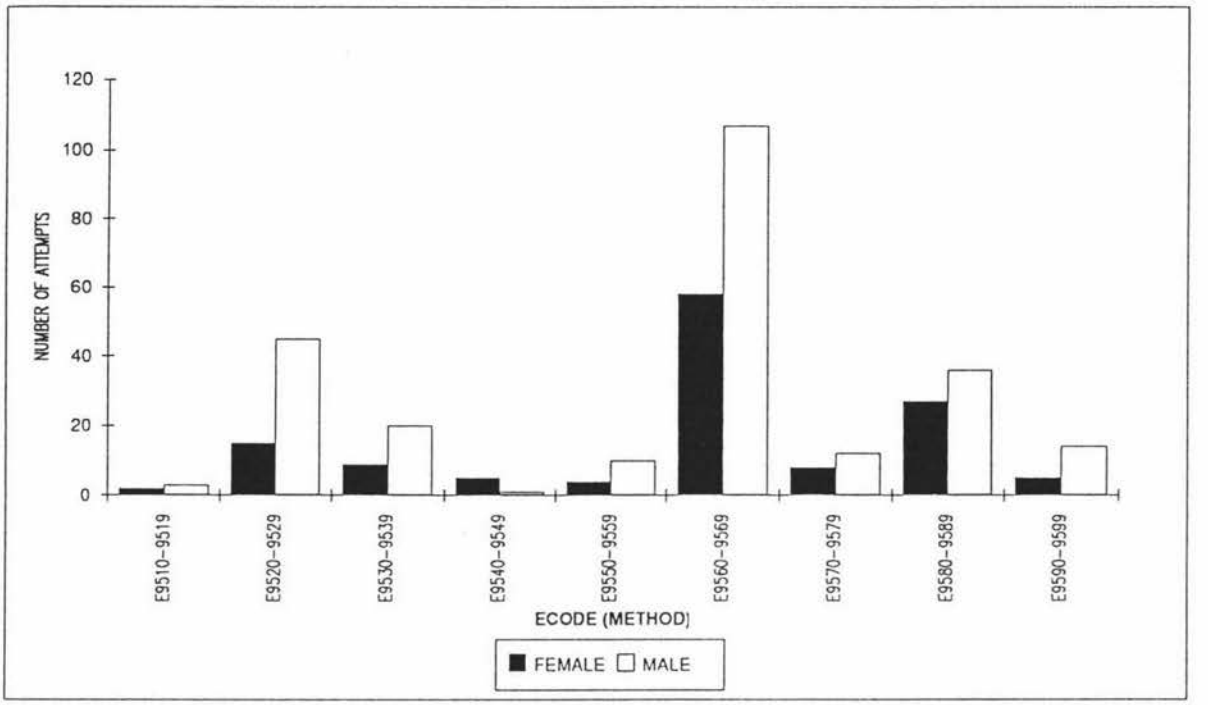


Figure 3.14 Number of Attempts by Gender and Ecode (Method) (without Poisoning by Solid or Liquid Substances category).

Poisoning by Solid or Liquid Substances

Details of the method 'Poisoning by Solid or Liquid Substances' are worth looking at since this method is the most prevalent for both sexes. Both sexes have higher proportions using the substances called 'Tranquillizers and Other Psychotropic Agents' (9503) and 'Other Specified Drugs and Medicaments' (9504) (See Table 3.9 and Figure 3.15). Females have a slightly larger number of suicide attempts for most types of poisoning substances. Overall, the percentages for females and males are quite similar in each category. The differences of the percentages range from 0% in '9504' (Other Specified Drugs and Medicaments) and '9507' (Corrosive and Caustic Substances) to 2.7% in '9503' (Tranquillizers and

Other Psychotropic Agents). Although there were not much differences between sexes in terms of percentage, the females percentage in the category '9501' (Barbiturates) is twice the percentage of males, whereas for '9506' (Unspecified Drug of Medicament) the percentage for males is almost seven times the females percentage and more than twice the females percentage for '9509' (Other and Unspecified Solid or Liquid Substances).

Table 3.9 Frequency of Attempted Suicide of Poisoning by Solid or Liquid Substances by Gender.

ECODE (METHOD)	FEMALE FREQUENCY	PERCENTAGE OF FEMALE FREQUENCY	MALE FREQUENCY	PERCENTAGE OF MALE FREQUENCY
9500	259	14.6	124	13.3
9501	7	0.4	2	0.2
9502	49	2.8	22	2.4
9503	713	40.1	348	37.4
9504	669	37.6	350	37.6
9505	42	2.4	28	3.0
9506	6	0.3	19	2.0
9507	9	0.5	5	0.5
9508	0	0	1	0.1
9509	24	1.3	32	3.4
TOTAL	1778	100	931	100

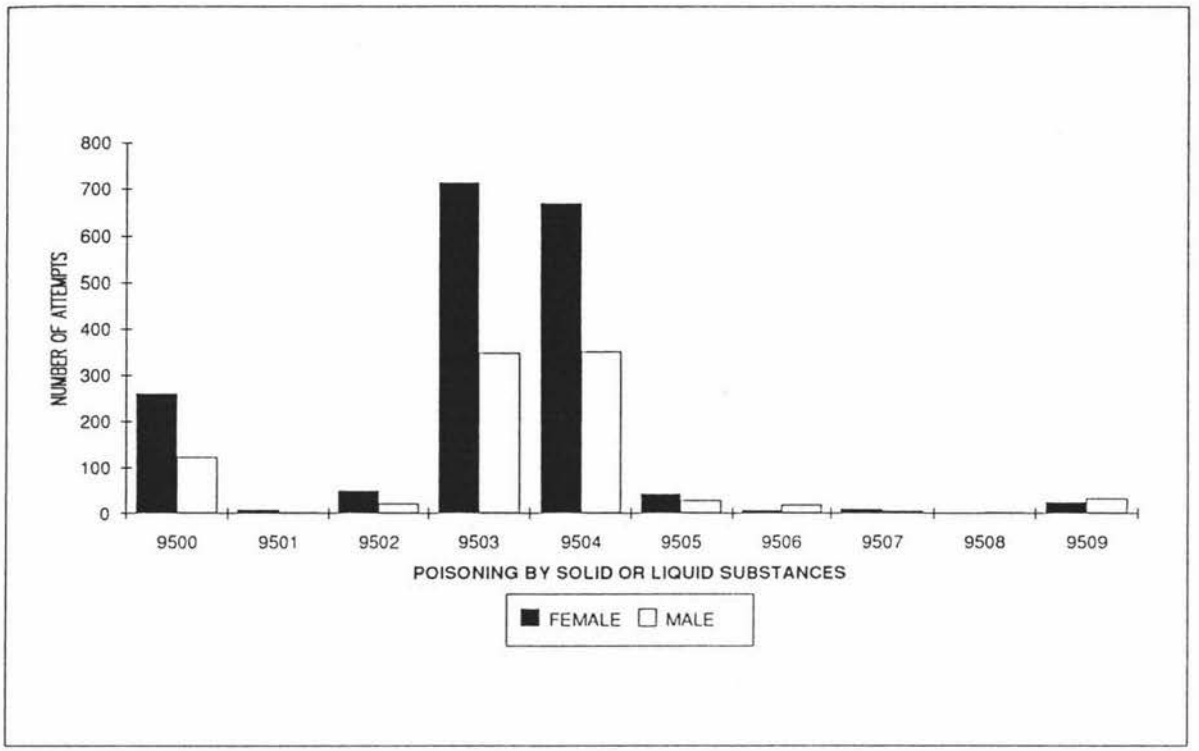


Figure 3.15 Number of Attempts by Gender and Poisoning by Solid or Liquid Substances.

3.7 Statistical Areas

The four Statistical Areas with the largest cities Central Auckland, South Auckland-Bay of Plenty, Wellington and Canterbury naturally dominate in the actual number of suicide attempts for both sexes (Figure 3.16). Clearly, females have a greater number of suicide attempts than males in all the thirteen statistical areas although there is considerable variation with some smaller areas such as Nelson and Northland having bars of almost equal size.

When the separate populations by sex of statistical areas were used to

compare the rate of attempts, Figure 3.17 shows that females have a higher rate of attempts in all statistical areas. The rates for females range from 5.30 per 10,000 from Northland to 14.92 per 10,000 from East Coast. Males showed a shorter range from 3.55 per 10,000 (Westland) to 9.44 per 10,000 (Canterbury).

The differences between the rate of suicide attempts per 10,000 head of population are shown by Figure 3.18 where the percentage of the female rate over male rate varies from 120.05 in Nelson to 337.60 in Westland. The four large Urban Areas mentioned above fall in the middle range and indeed, are very close to the national percentage of 150 of female to male rate. As the areas which have small populations are found at each end of Figure 3.18, one may suspect that the variation is merely due to the small frequencies of attempts and of population. This may apply to Westland and Marlborough where the number of attempts are 17 and 23, respectively, but the next largest area is Otago with 163. It seems that there is a considerable difference between the areas on the basis of gender.

Table 3.10 Frequency and Rate of Attempted Suicide of Statistical Area by Gender.

STATISTICAL AREA	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE[a] RATE	
NORTHLAND	60420	32	5.30*	
CENTRAL AUCKLAND	448029	441	9.84	
S.AUCKLAND-BAY OF PLENTY	254331	308	12.11	
EAST COAST	24132	36	14.92*	
HAWKES BAY	75882	95	12.52	
TARANAKI	54732	61	11.15	
WELLINGTON	299118	409	13.67	
MARLBOROUGH	18159	17	9.36	
NELSON	39162	41	10.47	
WESTLAND	10833	13	12.00	
CANTERBURY	215193	299	13.89	
OTAGO	91485	116	12.68	
SOUTHLAND	51231	43	8.39	
STATISTICAL AREA	**MALE POPULATION**	**MALE FREQUENCY**	**MALE[a] RATE**	**F/M(%)[b]**
NORTHLAND	62043	24	3.87	136.9
CENTRAL AUCKLAND	431799	293	6.79	145.1
S.AUCKLAND-BAY OF PLENTY	253656	170	6.70	180.7
EAST COAST	23820	16	6.72	222.1
HAWKES BAY	73404	42	5.72	218.8
TARANAKI	54759	41	7.49	148.9
WELLINGTON	292608	272	9.30	147.1
MARLBOROUGH	18336	6	3.27	286.1
NELSON	38988	34	8.72	120.1*
WESTLAND	11253	4	3.55*	337.6*
CANTERBURY	208755	197	9.44*	147.2
OTAGO	88929	47	5.29	239.9
SOUTHLAND	52302	33	6.31	133.0

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
* These cells are referred to in the text.

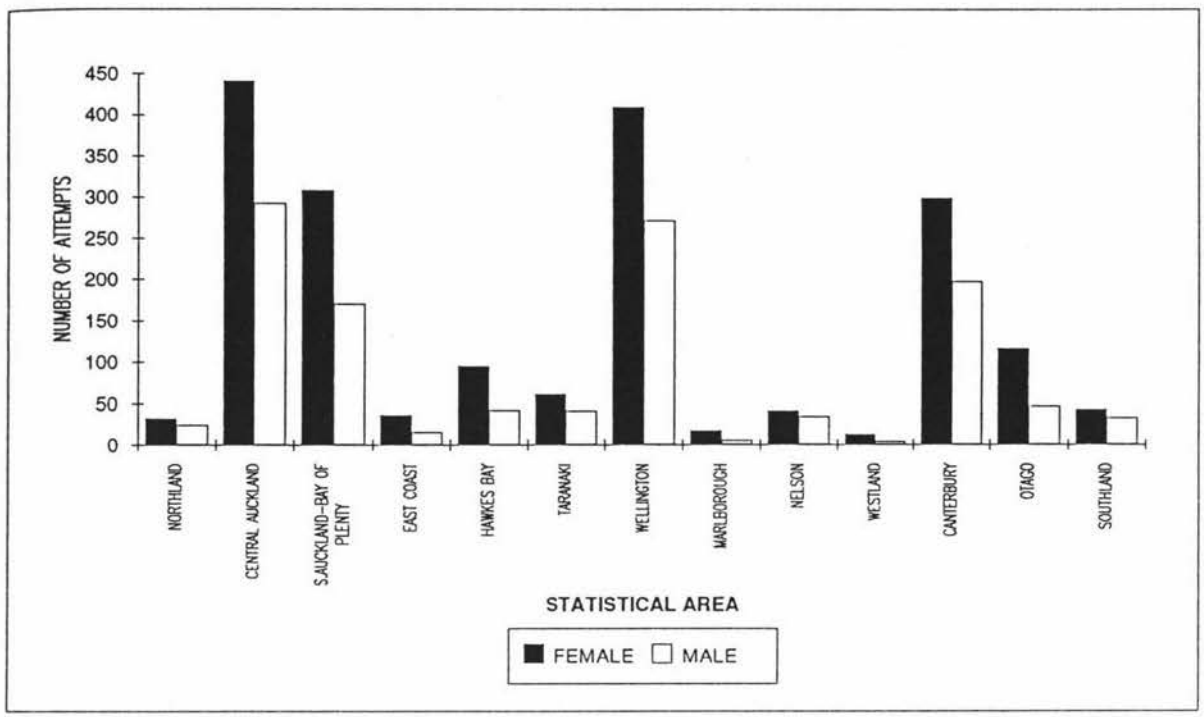


Figure 3.16 Number of Attempts by Gender and Statictical Area.

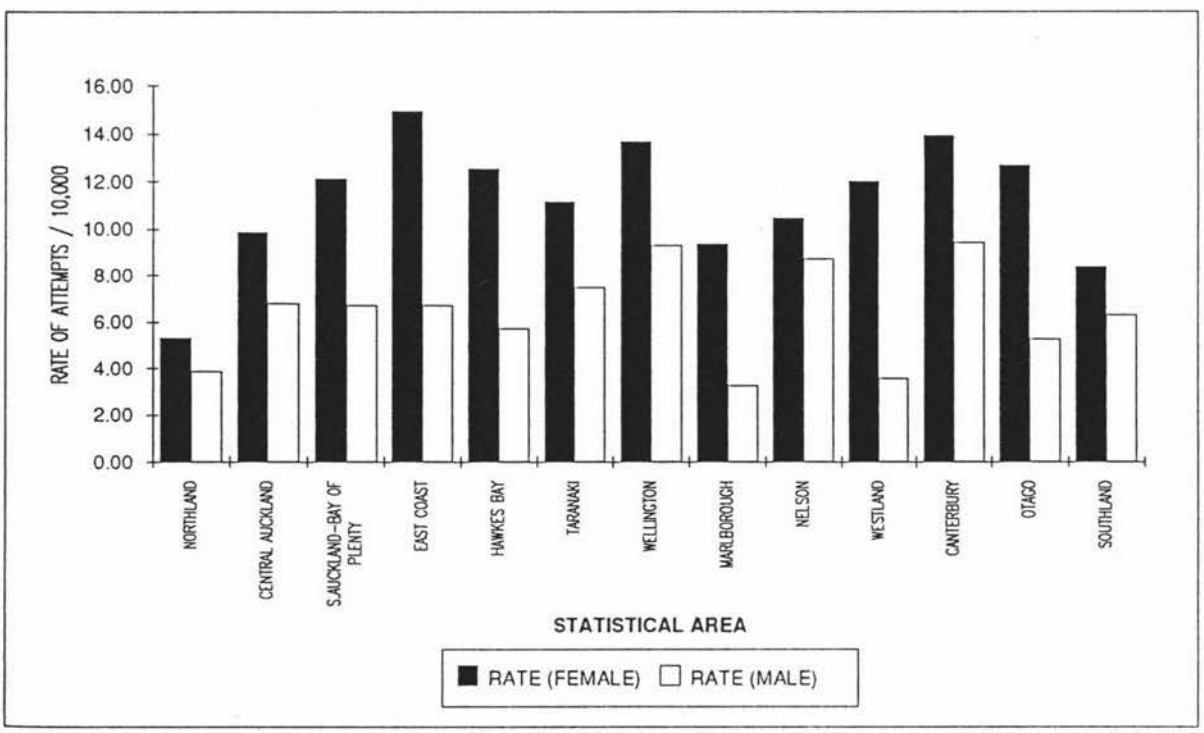


Figure 3.17 Rate of Attempts per 10,000 by Gender and Statistical Area.

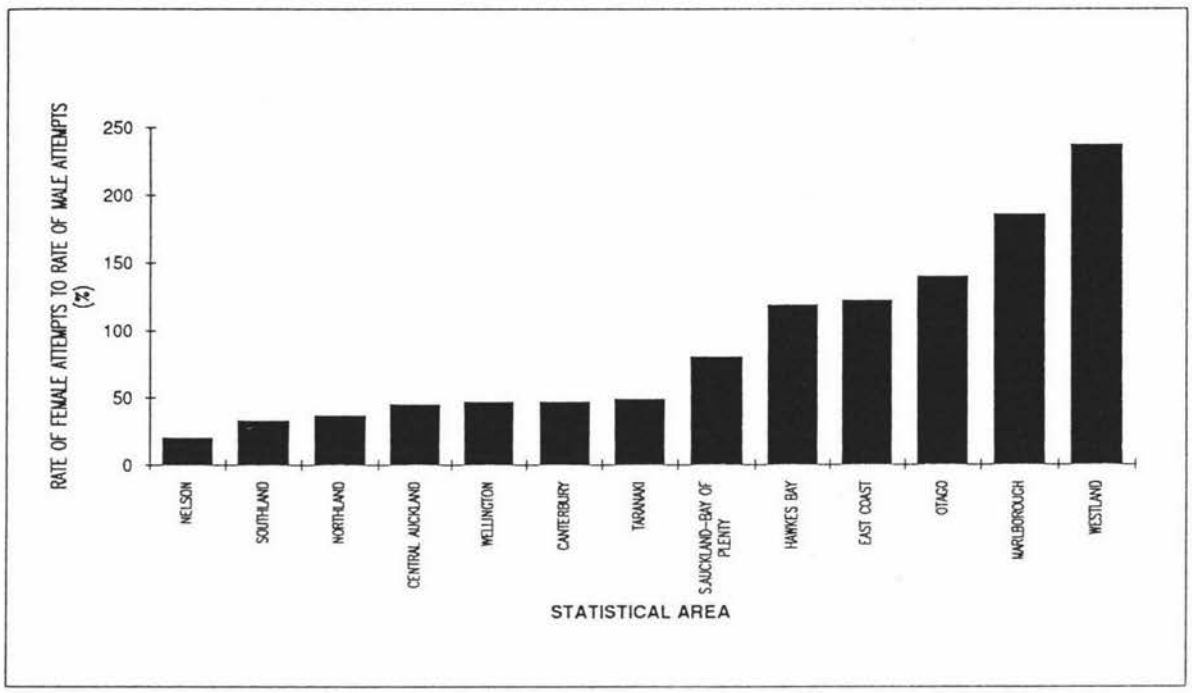


Figure 3.18 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

3.8 Urban and Rural Areas

Areas with high population density such as Christchurch, Central Auckland, Minor Urban Areas, South Auckland Zone, Wellington City Zone and Rural Areas have high numbers of suicide attempts for both sexes (these are clearly shown in Table 3.11). Females dominate the number of suicide attempts in most of the areas which can be seen from Figure 3.19. The only four areas that have a higher number of suicide attempts for males than females are Pukekohe, Hawera, Feilding and Kapiti. These are all Secondary Urban Areas and the actual number of attempts are not large.

When the populations were separated by sex, the picture does not change from that of Section 2.9. The sex with the higher frequencies of suicide attempts have higher rates of attempted suicide which is shown in Table 3.11 and Figure 3.20.

Within the Main Urban Areas, females attempts rate range from 5.41 in Whangarei to a rate of 21.57 per 10,000 in Rotorua. Whereas in Secondary Urban Areas, the range was from 3.35 in Kapiti to 23.43 in Oamaru. Overall for females, the range was from 3.35 per 10,000 people to 23.43 per 10,000 people in Secondary Urban Areas (see Table 3.12 and Figure 3.21). The average females attempts rate in Secondary Urban Areas is 14.11 which is higher than Main Urban Areas with an average of 13.26.

Table 3.13 and Figure 3.22 showed that males from Secondary Urban Areas have a range of 14.11 in rate of attempts which is a bigger range compared to males from Main Urban Areas with a range of 12.39. Overall for males, the range was from 2.77 in Main Urban Areas to 17.84 in Secondary Urban Areas. The average attempts rate for males, as with females, is higher in Secondary Urban Areas than Main Urban Areas.

Both sexes have a more varied suicide attempts rate in Secondary Urban Areas compared to Main Urban Areas and a higher average rate from Secondary Urban Areas.

Figure 3.23 shows the differences between the rate of suicide attempts per 10,000 head of population, the percentage of females rate relative to males varies from 28.5 in Kapiti to 450.3 to Greymouth, where both areas are from Secondary Urban Area. Areas which have a higher males

attempts rate than females are clearly shown in Figure 3.23, they being the four bars with percentage less than 100. Table 3.14 and Figure 3.23 show that areas like Rotorua, Timaru, Dunedin, Oamaru, Blenheim, Whakatane, Levin, Tokoroa and Greymouth have a female attempts rate of at least twice that of the male attempts rate.

At this stage, one would probably wonder how closely the rate for females and males is linked to the size of the area? The nonparametric Spearmans Correlation Coefficient between the population size and the rate of attempts has been worked out for both sexes. Females, with a value **-0.109**, and males, with **-0.081**, indicate a poor relationship between the population sizes and the rate of attempts. Figures 3.24 and 3.25 show the plots of increasing population density against the rates of suicide attempts. Clearly the figures show the poor correlation between the population density sizes and the rate of attempts.

Table 3.11 Frequency and Rate of Attempted Suicide of Urban and Rural Area by Gender.

	URBAN AND RURAL AREA	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE RATE [a]	MALE POPULATION	MALE FREQUENCY	MALE RATE [a]	F/M(%) [b]
1	WHANGAREI	22194	12	5.41	21657	6	2.77	195.2 [c]
2	NORTH AUCKLAND ZONE	83223	65	7.81	79326	35	4.41	177.0
3	WEST AUCKLAND ZONE	63324	57	9.00	62697	31	4.94	182.1
4	CENTRAL AUCKLAND ZONE	144165	162	11.24	133476	123	9.22	121.9
5	SOUTH AUCKLAND ZONE	124893	149	11.93	122604	92	7.50	159.0
6	HAMILTON	51546	86	16.68	48630	53	10.90	153.1
7	TAURANGA	30267	32	10.57	28242	16	5.67	186.6
8	ROTORUA	25035	54	21.57	23688	25	10.55	204.4
9	GISBORNE	16479	27	16.38	15465	14	9.05	181.0
10	NAPIER	26424	35	13.25	24816	17	6.85	193.4
11	HASTINGS	27867	39	14.00	26070	20	7.67	182.4
12	NEW PLYMOUTH	24222	35	14.45	23010	17	7.39	195.6
13	WANGANUI	21042	23	10.93	19341	13	6.72	162.6
14	PALMERSTON NORTH	34392	72	20.94	32325	49	15.16	138.1
15	UPPER HUTT VALLEY ZONE	17691	27	15.26	17862	19	10.64	143.5
16	LOWER HUTT VALLEY ZONE	47964	67	13.97	46524	51	10.96	127.4
17	PORIRUA BASIN ZONE	29277	23	7.86	28770	16	5.56	141.3
18	WELLINGTON CITY ZONE	67809	123	18.14	66195	62	9.37	193.7
19	NELSON	22380	27	12.06	21165	18	8.50	141.9
20	CHRISTCHURCH	151176	231	15.28	142974	169	11.82	129.3
21	TIMARU	14898	22	14.77	13689	9	6.57	224.6
22	DUNEDIN	55155	82	14.87	51216	31	6.05	245.6
23	INVERCARGILL	27000	23	8.52	25977	19	7.31	116.5 [d]
24	PUKEKOHE	7161	3	4.19	6924	5	7.22	58.0
25	TOKOROA	8937	16	17.90	9609	5	5.20	344.1
26	TAUPO	8004	11	13.74	8100	7	8.64	159.0
27	WHAKATANE	8046	11	13.67	7908	4	5.06	270.3
28	HAWERA	5925	5	8.44	5694	7	12.29	68.6
29	FEILDING	6552	5	7.63	6210	10	16.10	47.4
30	LEVIN	9786	18	18.39	9219	5	5.42	339.1
31	KAPITI	11949	4	3.35	11058	13	11.76	28.5
32	MASTERTON	10029	15	14.96	9417	13	13.80	108.3
33	BLENHEIM	11586	16	13.81	11331	6	5.30	260.8
34	GREYMOUTH	5361	9	16.79	5364	2	3.73	450.3
35	ASHBURTON	7926	16	20.19	7497	8	10.67	189.2
36	OAMARU	7257	17	23.43	6672	6	8.99	260.5
37	GORE	5715	12	21.00	5604	10	17.84	117.7
38	MINOR URBAN AREAS	152883	181	11.84	150225	101	6.72	176.1
39	RURAL AREAS	246930	99	4.01	272643	72	2.64	151.8

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
c This group of 23 consists of Main Urban Areas.
d This group of 14 consists of Secondary Urban Areas.

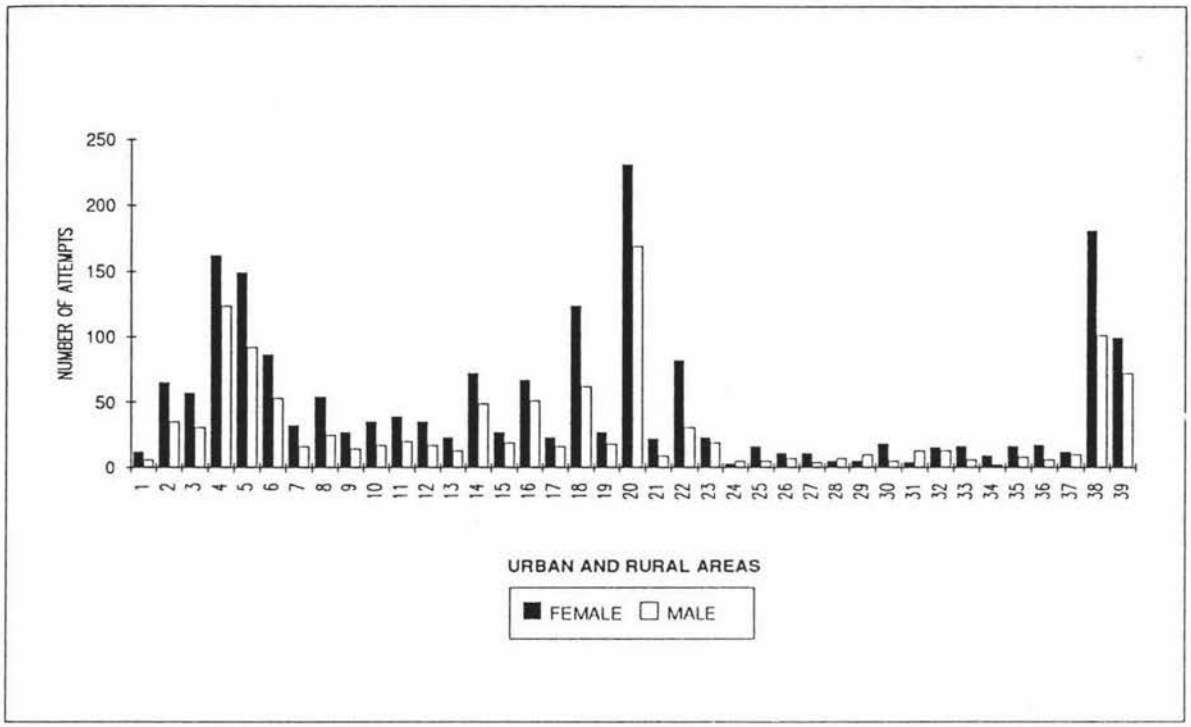


Figure 3.19 Number of Attempts in Urban and Rural Areas.

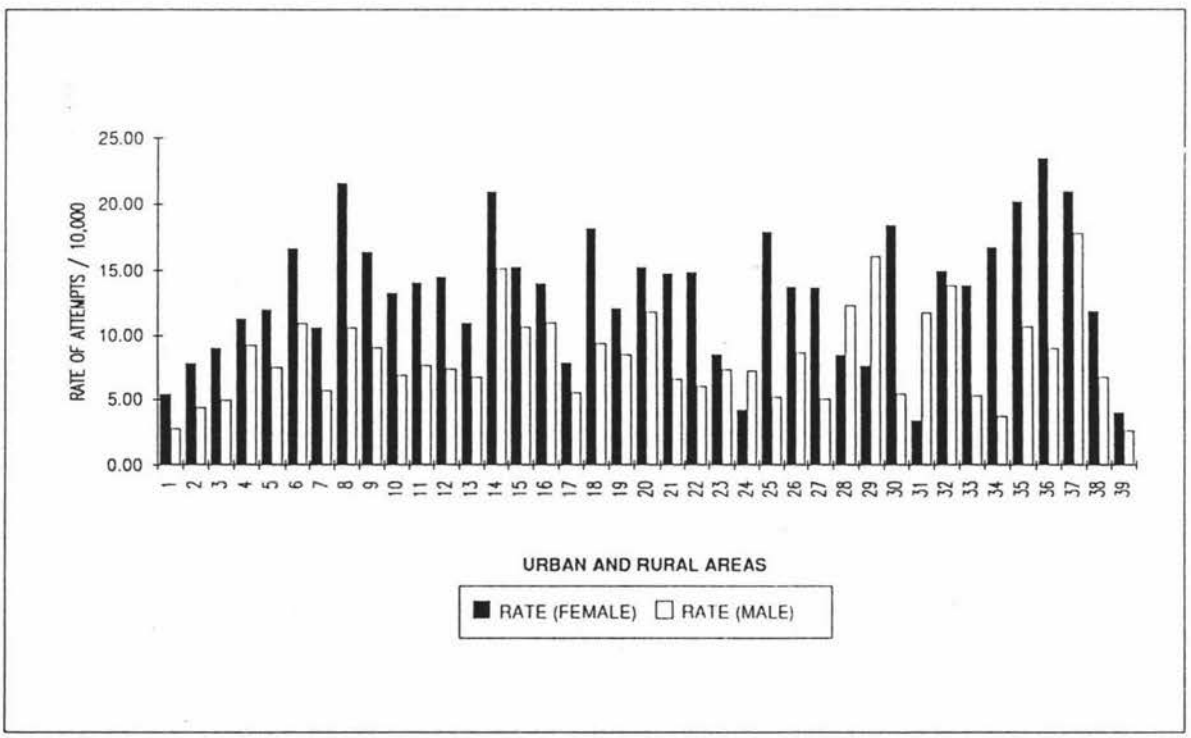


Figure 3.20 Rate of Attempts per 10,000 in Urban and Rural Areas.

Table 3.12 Female Rate of Attempted Suicide in Ascending Order Within the Four types of Areas.

	URBAN AND RURAL AREA	FEMALE RATE[a]	
1	WHANGAREI	5.41*[b]	
2	NORTH AUCKLAND ZONE	7.81	
3	PORIRUA BASIN ZONE	7.86	
4	INVERCARGILL	8.52	
5	WEST AUCKLAND ZONE	9.00	
6	TAURANGA	10.57	
7	WANGANUI	10.93	
8	CENTRAL AUCKLAND ZONE	11.24	
9	SOUTH AUCKLAND ZONE	11.93	
10	NELSON	12.06	
11	NAPIER	13.25	Average = 13.26
12	LOWER HUTT VALLEY ZONE	13.97	
13	HASTINGS	14.00	
14	NEW PLYMOUTH	14.45	
15	TIMARU	14.77	
16	DUNEDIN	14.87	
17	UPPER HUTT VALLEY ZONE	15.26	
18	CHRISTCHURCH	15.28	
19	GISBORNE	16.38	
20	HAMILTON	16.68	
21	WELLINGTON CITY ZONE	18.14	
22	PALMERSTON NORTH	20.94	
23	ROTORUA	21.57*	
24	KAPITI	3.35*[c]	
25	PUKEKOHE	4.19	
26	FEILDING	7.63	
27	HAWERA	8.44	
28	WHAKATANE	13.67	
29	TAUPO	13.74	
30	BLENHEIM	13.81	Average = 14.11
31	MASTERTON	14.96	
32	GREYMOUTH	16.79	
33	TOKOROA	17.90	
34	LEVIN	18.39	
35	ASHBURTON	20.19	
36	GORE	21.00	
37	OAMARU	23.43*	
38	MINOR URBAN AREAS	11.84	
39	RURAL AREAS	4.01	

Note:
a The Number of Attempts per 10,000 people.
b This group of 23 consists of Main Urban Areas.
c This group of 14 consists of Secondary Urban Areas.
* These cells are referred to in the text.

Table 3.13 Male Rate of Attempted Suicide in Ascending Order Within the Four Types of Areas.

	URBAN AND RURAL AREA	MALE RATE[a]	
1	WHANGAREI	2.77* [b]	
2	NORTH AUCKLAND ZONE	4.41	
3	WEST AUCKLAND ZONE	4.94	
4	PORIRUA BASIN ZONE	5.56	
5	TAURANGA	5.67	
6	DUNEDIN	6.05	
7	TIMARU	6.57	
8	WANGANUI	6.72	
9	NAPIER	6.85	
10	INVERCARGILL	7.31	
11	NEW PLYMOUTH	7.39	
12	SOUTH AUCKLAND ZONE	7.50	
13	HASTINGS	7.67	Average = 8.07
14	NELSON	8.50	
15	GISBORNE	9.05	
16	CENTRAL AUCKLAND ZONE	9.22	
17	WELLINGTON CITY ZONE	9.37	
18	ROTORUA	10.55	
19	UPPER HUTT VALLEY ZONE	10.64	
20	HAMILTON	10.90	
21	LOWER HUTT VALLEY ZONE	10.96	
22	CHRISTCHURCH	11.82	
23	PALMERSTON NORTH	15.16	
24	GREYMOUTH	3.73 [c]	
25	WHAKATANE	5.06	
26	TOKOROA	5.20	
27	BLENHEIM	5.30	
28	LEVIN	5.42	
29	PUKEKOHE	7.22	
30	TAUPO	8.64	
31	OAMARU	8.99	Average = 9.43
32	ASHBURTON	10.67	
33	KAPITI	11.76	
34	HAWERA	12.29	
35	MASTERTON	13.80	
36	FELTDING	16.10	
37	GORE	17.84*	
38	MINOR URBAN AREAS	6.72	
39	RURAL AREAS	2.64	

Note:

a The Number of Attempts per 10,000 people.

b This group of 23 consists of Main Urban Areas.

c This group of 14 consists of Secondary Urban Areas.

* These cells are referred to in the text.

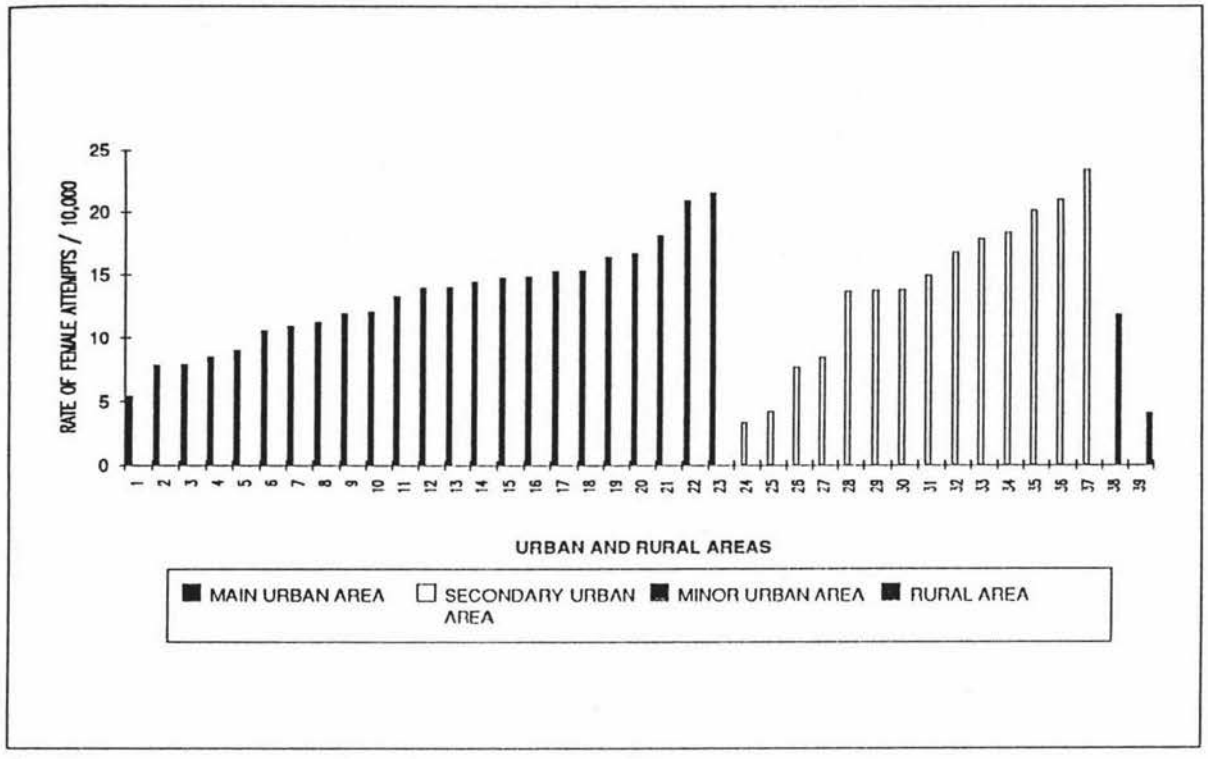


Figure 3.21 Rate of Female Attempts per 10,000 in Urban and Rural Areas.

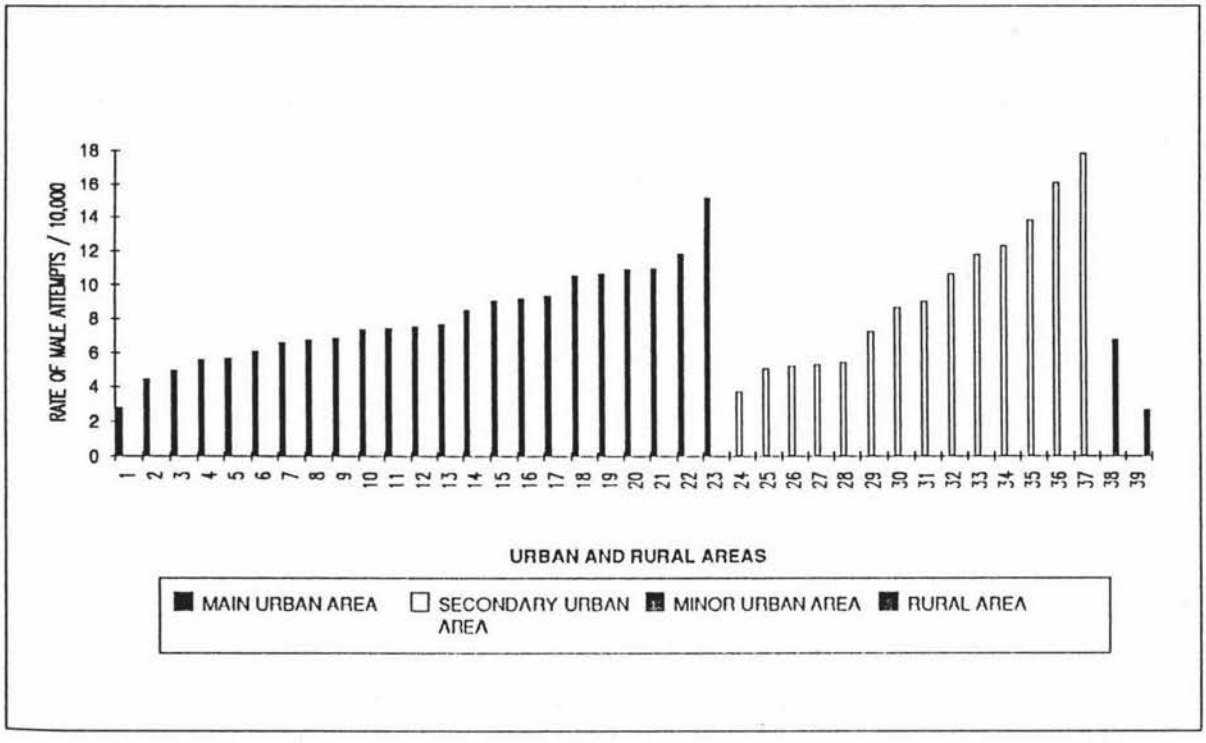


Figure 3.22 Rate of Male Attempts per 10,000 in Urban and Rural Areas.

Table 3.14 Proportion of Female Rate of Attempted Suicide Relative to Males in Ascending Order Within the Four Types of Areas.

	URBAN AND RURAL AREA	F/M(%)[a]	
1	INVERCARGILL	116.5[b]	
2	CENTRAL AUCKLAND ZONE	121.9	
3	LOWER HUTT VALLEY ZONE	127.4	
4	CHRISTCHURCH	129.3	
5	PALMERSTON NORTH	138.1	
6	PORIRUA BASIN ZONE	141.3	
7	NELSON	141.9	
8	UPPER HUTT VALLEY ZONE	143.5	
9	HAMILTON	153.1	
10	SOUTH AUCKLAND ZONE	159.0	
11	WANGANUI	162.6	Average = 169.4
12	NORTH AUCKLAND ZONE	177.0	
13	GISBORNE	181.0	
14	WEST AUCKLAND ZONE	182.1	
15	HASTINGS	182.4	
16	TAURANGA	186.6	
17	NAPIER	193.4	
18	WELLINGTON CITY ZONE	193.7	
19	WHANGAREI	195.2	
20	NEW PLYMOUTH	195.6	
21	ROTORUA	204.4	
22	TIMARU	224.6	
23	DUNEDIN	245.6	
24	KAPITI	28.5*[c]	
25	FEILDING	47.4	
26	PUKEKOHE	58.0	
27	HAWERA	68.6	
28	MASTERTON	108.3	
29	GORE	117.7	
30	TAUPO	159.0	
31	ASHBURTON	189.2	Average = 193.0
32	OAMARU	260.5	
33	BLENHEIM	260.8	
34	WHAKATANE	270.3	
35	LEVIN	339.1	
36	TOKOROA	344.1	
37	GREYMOUTH	450.3*	
38	MINOR URBAN AREAS	176.1	
39	RURAL AREAS	151.8	

Note:

a The Proportion of Female Rate of Suicide Attempts Relative to Male.

b This group of 23 consists of Main Urban Areas.

c This group of 14 consists of Secondary Urban Areas.

* These cells are referred to in the text.

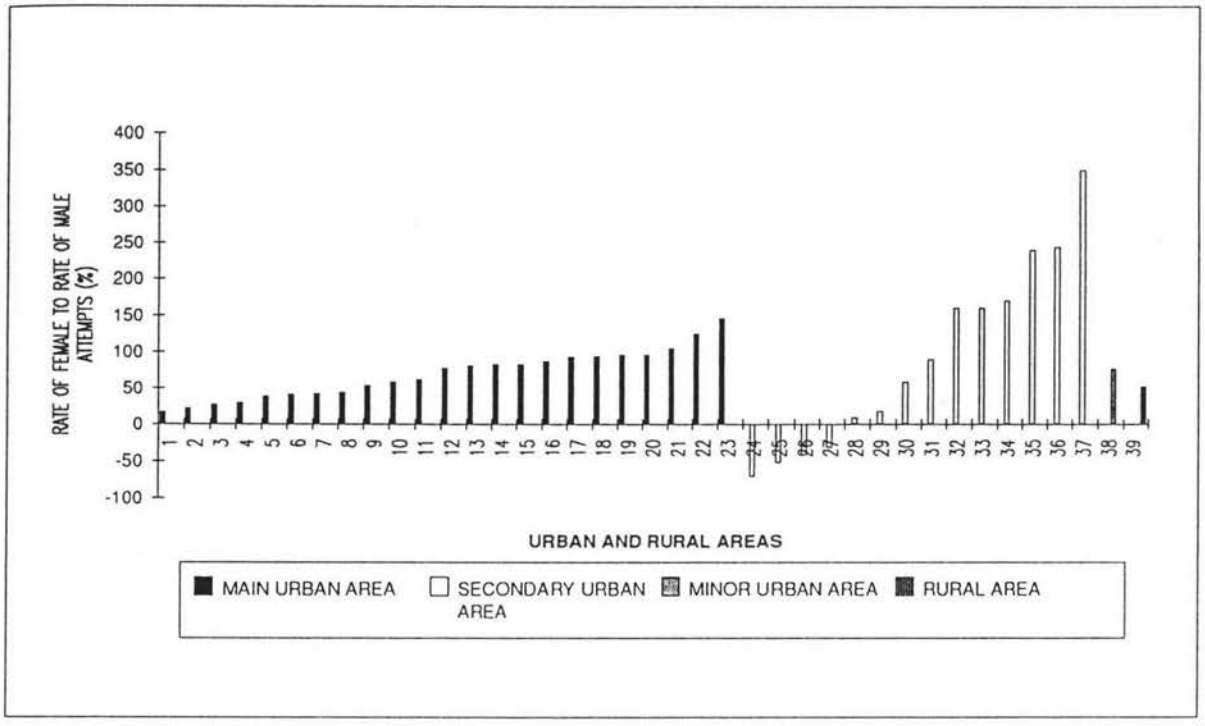


Figure 3.23 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

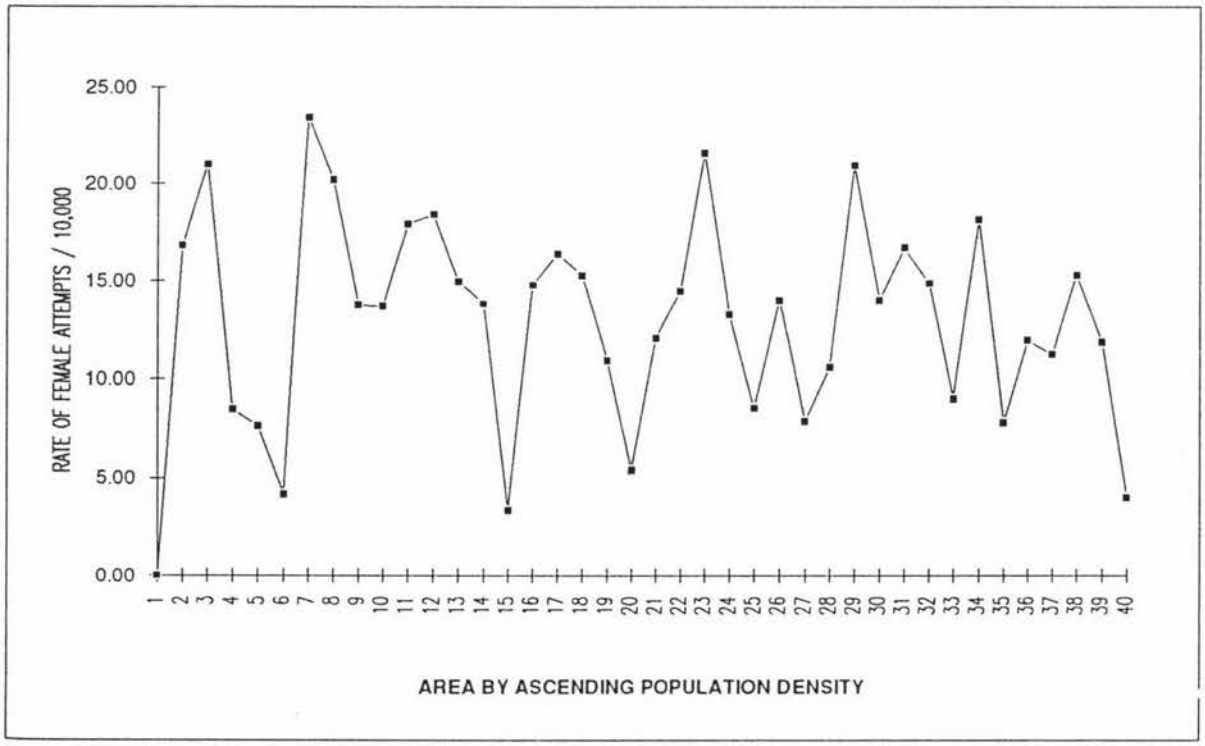


Figure 3.24 Rate of Female Attempts per 10,000 by Population Density in Ascending Order.

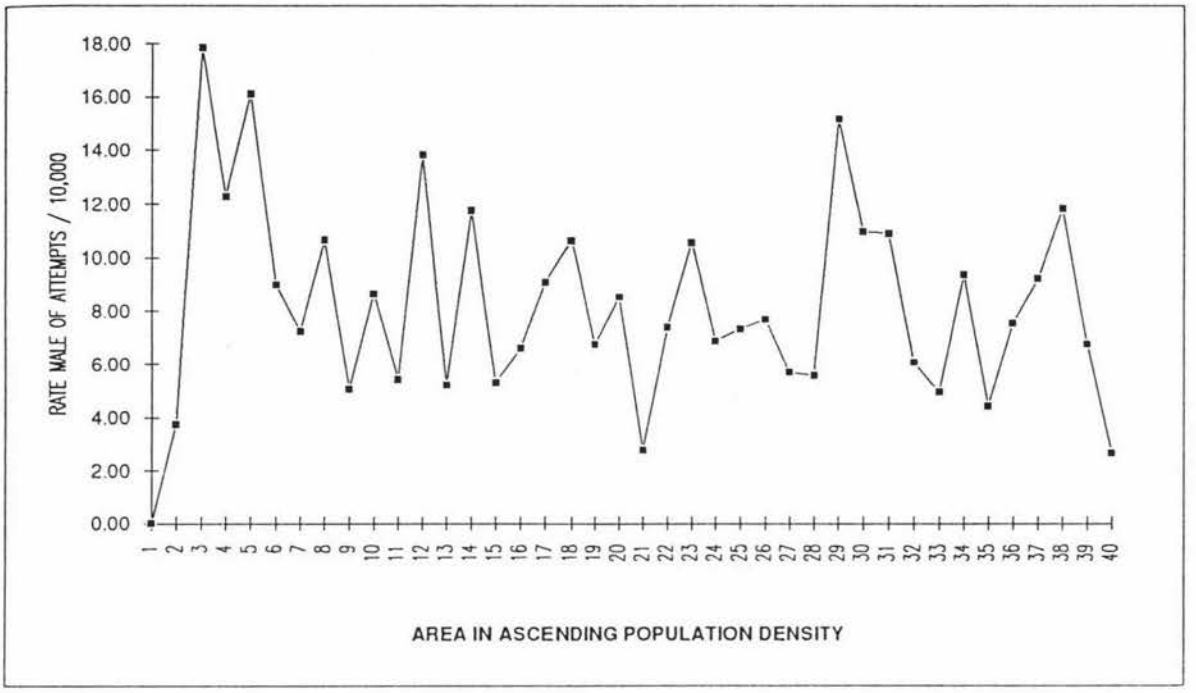


Figure 3.25 Rate of Male Attempts per 10,000 by Population Density in Ascending Order.

Grouping of Main and Secondary Urban Areas

Once again, for the purposes of comparing differences between sexes of different areas, a grouping of Main and Secondary Urban Areas has been carried out in similar way to that in Section 2.9. Once again, as there was no attempts recorded in Shipping Areas, therefore, it was omitted in this section.

After combining the Main Urban Areas and Secondary Urban Areas, the rate of attempts between Main Urban Area and Secondary Urban Area becomes very similar for both sexes. Figure 3.28 indicates that the combined rate of females relative to males remains almost constant over

the four different classification of areas with the category Minor Urban Area having a slightly higher percentage than others.

Table 3.15 Frequency and Rate of Attempted Suicide of Combined Area by Gender.

COMBINED AREA	FEMALE POPULATION	FEMALE FREQUENCY	FEMALE[a] RATE	
MAIN URBAN AREA	1128423	1473	13.05	
SECONDARY URBAN AREA	114234	158	13.83	
MINOR URBAN AREA	152883	181	11.84	
RURAL AREA	246930	99	4.01	
COMBINED AREA	**MALE POPULATION**	**MALE FREQUENCY**	**MALE[a] RATE**	**F/M(%)[b]**
MAIN URBAN AREA	1075719	905	8.41	155.2
SECONDARY URBAN AREA	110607	101	9.13	151.5
MINOR URBAN AREA	150225	101	6.72	176.1
RURAL AREA	272643	72	2.64	151.8

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.

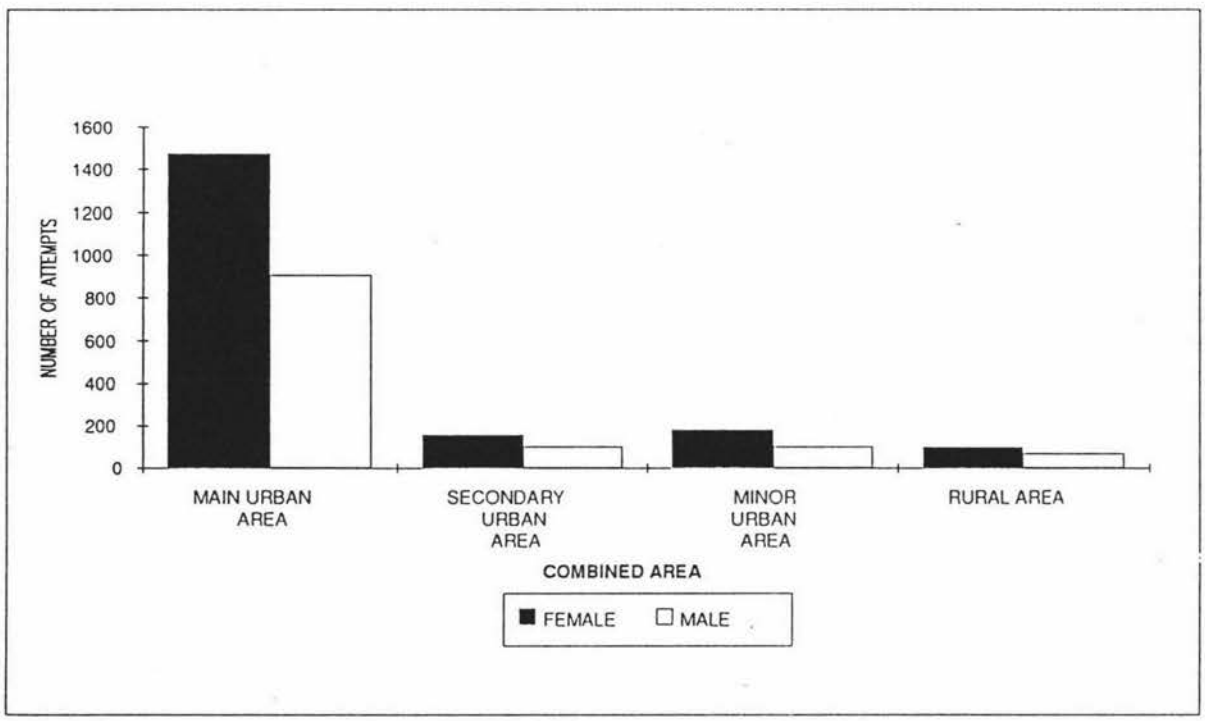


Figure 3.26 Number of Attempts by Gender and Combined Area.

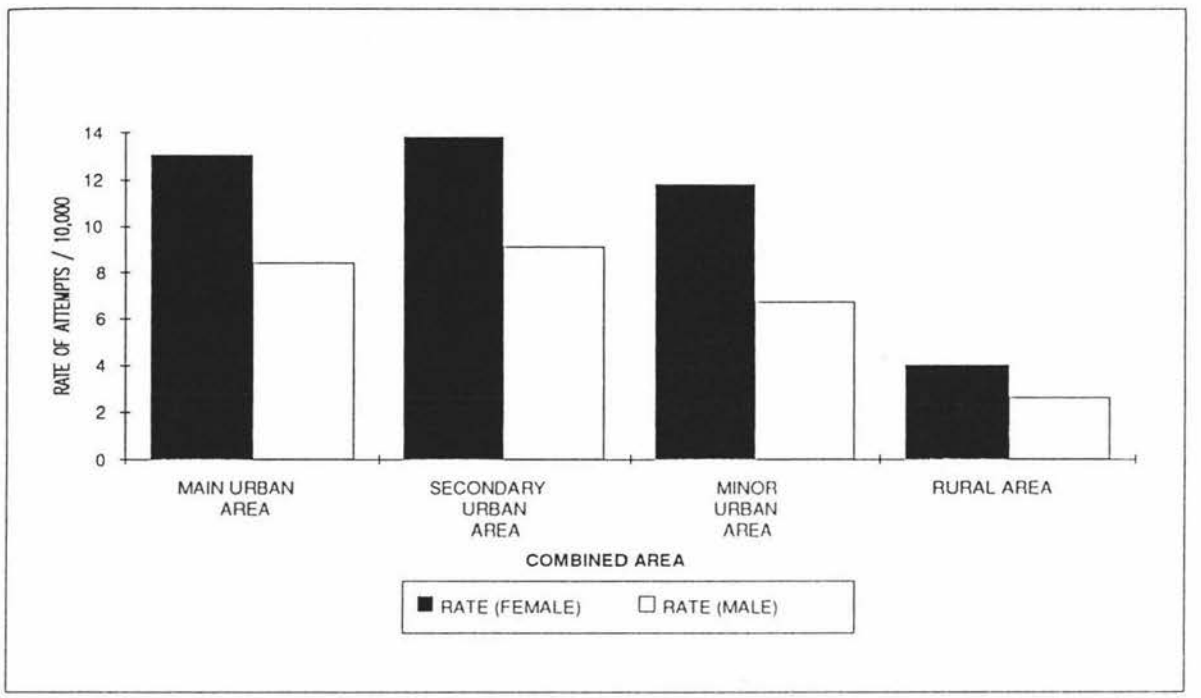


Figure 3.27 Rate of Attempts per 10,000 by Gender and Combined Area.

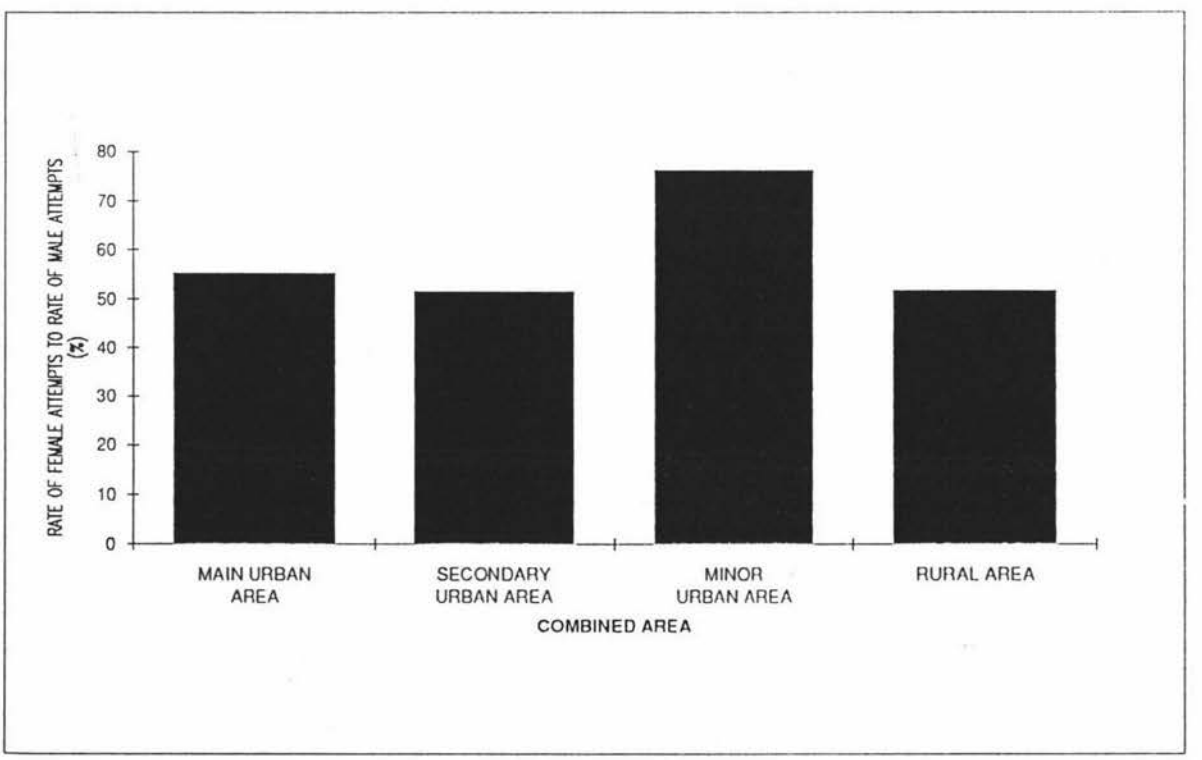


Figure 3.28 Female Rate of Suicide Attempts Relative to Male in 1988 (the values plotted were the differences from 100%).

3.9 Time

In an earlier chapter, it was found that suicide attempts tend to be higher in the warmer months. We consider here whether females and males have the same sort of seasonal effect. Females frequency ranged from 144 to 176 with a median of 160, whereas males had a wider range from 83 attempts to 126 and a median of 96.5. In terms of percentage of total frequency for each sex, the range of females is still shorter compared to males (1.7 versus 3.7)

Figure 3.29 shows clearly females have a greater number of attempts than males, but in terms of percentage the figures were quite similar for every month.

Figure 3.30 shows some interesting features. First of all, females show an increasing trend from June to December, which decreases slightly in January and rises up again in February which is the peak month for females with perhaps a decreasing trend in February through to June. Males have a high peak at March with a fairly constant number of attempts around August to December, and fluctuate more between January and May. From December to May, females and males show different trends with females increasing but males decreasing in the number of suicide attempts.

Table 3.16 Frequency of Attempted Suicide of Month by Gender.

MONTH	FEMALE FREQUENCY	PERCENTAGE OF FEMALE FREQUENCY	MALE FREQUENCY	PERCENTAGE OF MALE FREQUENCY
JANUARY	160	8.4	117	9.9
FEBRUARY	176	9.2	89	7.5
MARCH	160	8.4	126	10.7
APRIL	169	8.8	88	7.5
MAY	150	7.8	105	8.9
JUNE	144	7.5	84	7.1
JULY	150	7.8	83	7.0
AUGUST	154	8.1	102	8.7
SEPTEMBER	156	8.2	97	8.2
OCTOBER	161	8.4	96	8.1
NOVEMBER	165	8.6	101	8.6
DECEMBER	166	8.7	91	7.7
TOTAL	1911	100	1179	100

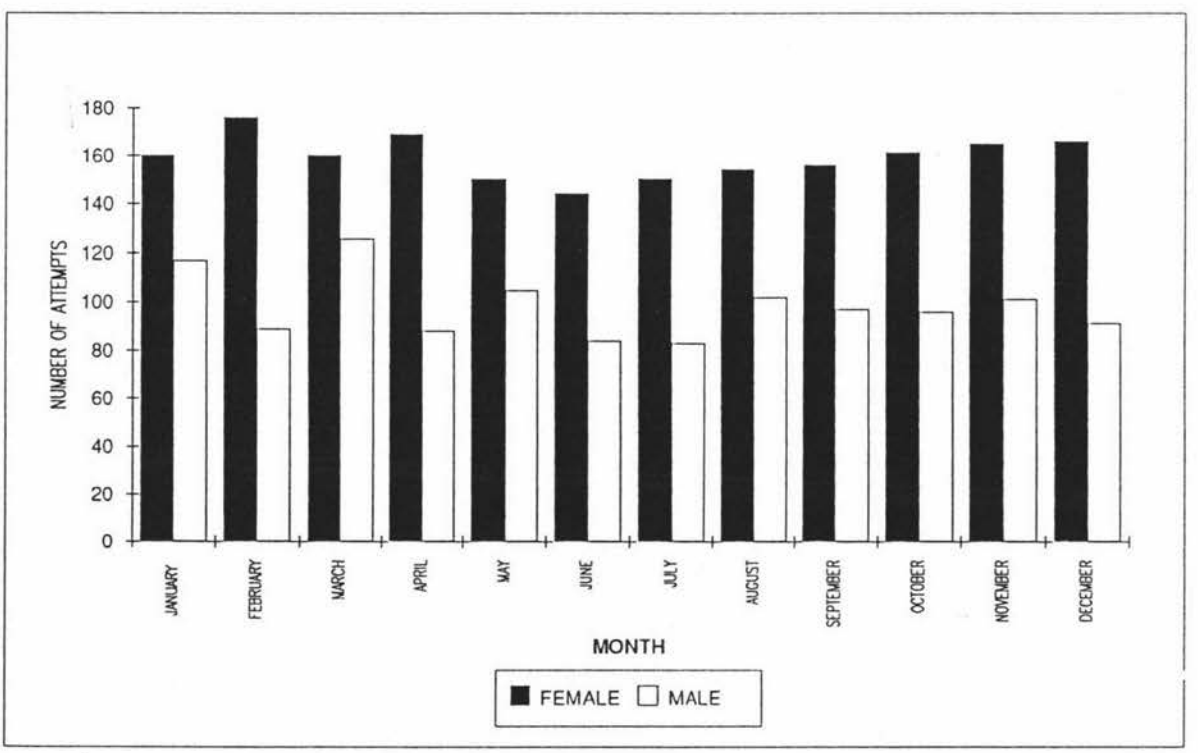


Figure 3.29 Number of Attempts by Gender and Month.

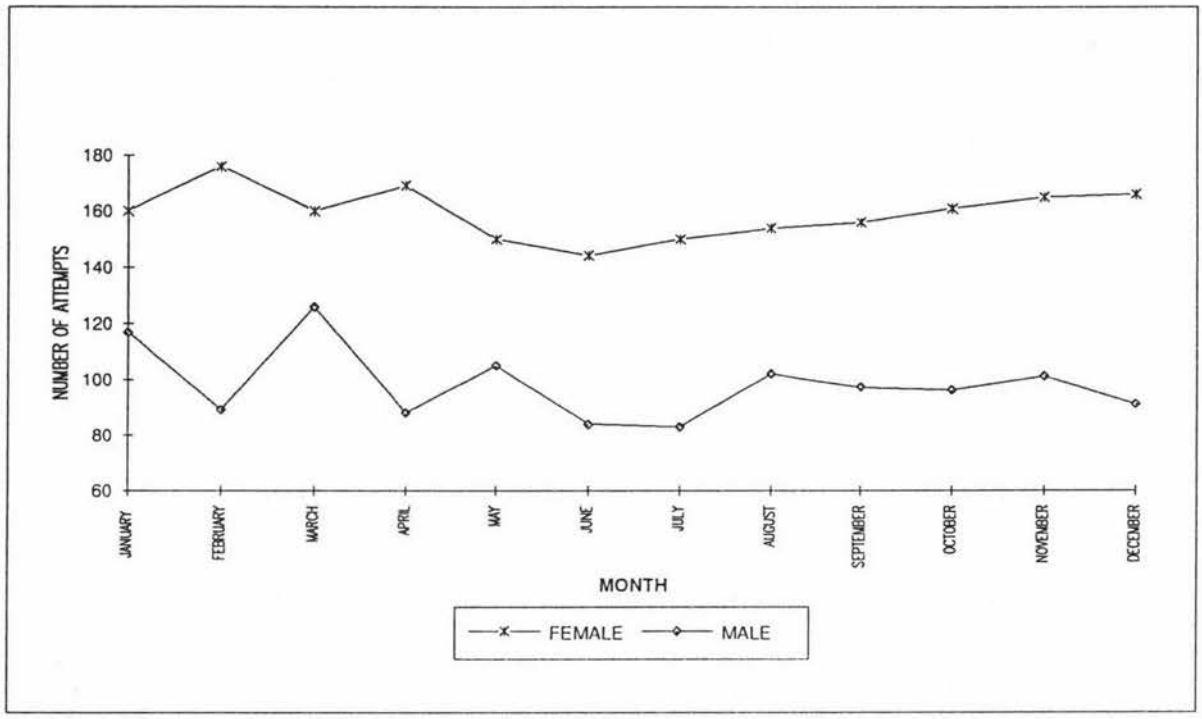


Figure 3.30 Number of Attempts by Gender and Month.

Chapter 4
Cross Tabulation of Suicide Attempts on Three Variables

4.0 Introduction

In earlier chapters, we considered the frequencies and rates of suicide attempts broken down by single variables and the differences between the sexes. From those displays, some interesting findings were observed which might be confounded with other variables. Therefore, in this chapter, the interaction of these demographic variables will be explored.

For reasons of clarity, in this section, particular groups of Discharge Type, Age-group and Method will be considered. The categories of the Grouped Discharge Type, Age-group and Method are as follows:

Grouped Discharge Type

(1) Death (includes DD)
(2) Regular (includes DI, DR, DS)
(3) Psychiatric (includes OP, PP, SP)
(4) Others (includes OG, PG, PN, PO, SG, SM, SO)

Age-group

(1) LO -- 14
(2) 15 -- 17

(3) 18 -- 19
(4) 20 -- 24
(5) 25 -- 29
(6) 30 -- 34
(7) 35 -- 39
(8) 40 -- 49
(9) 50 -- 59
(10) 60 -- HI

Grouped Method

(1) Passive (includes Gases, Poison or Drugs)
(2) Active (includes Hanging, Cutting, Drowning, Firearms and Explosives and Jumping from High Places)
(3) Late Effects of Self-Inflicted Injury
(4) Others

4.1 Number of Days Stay in Hospital by Gender and Selected Methods

In general, those who used passive methods needed a shorter length of stay in hospital compared to those who used active methods. A total of 53.2% of those who used passive methods were discharged within a day or less which is a higher proportion than active methods with only 32.0%. In Section 2.2 we mentioned that the high proportion of people discharged on the same day or after 1 day could be due to the high number of people suffering from substance abuse which only needed observation for less than a day. This is supported by the findings in this section.

Table 4.1 shows that passive methods have a higher percentage, 80.6% than active methods, 54.6%, in '0', '1', '2' and '3' days stay in hospital. Active methods are relatively more common for stays equal to 4 days or more. Categories '6', '7', '9' and '10 or more days' in hospital show a bigger difference in percentage of days stay between passive and active methods. The percentages in '6' and '7' days stay for active methods is 3 times that of passive methods. For category '9', we have almost 6 times the difference and in '10 or more' days stay the difference is about 2.5 times.

Among the categories of grouped method, Late Effects of Self-Inflicted Injury is the only group which has no people discharged on the same day or after one day.

Looking at the sexes separately, active methods for both sexes have a higher percentage than passive methods for longer length of stay (4 days or more) except for females in the length of 8 days stay and passive methods dominate the percentages in '0', '1', '2' and '3' days stay. This is a similar pattern to the combined percentage discussed above.

For females, the percentage of active methods in Categories '6', '7', '9' and '10 or more' days stay is at least twice as large as passive methods. Similarly, for males, the categories '6', '8', '9' and '10 or more' days of stay of active methods have a higher percentage of at least twice that of passive methods.

Earlier in Section 3.1, the point was made that a higher percentage of males needed longer stays which might be related to the high proportion of active methods used by males. This is supported in this study as 2.0% (39/1911 * 100) of females who used active methods had a stay

of 4 or more days, whereas for males, a higher percentage occurred, 5.7% (67/1179 * 100).

Table 4.1 Frequency of Number of Days Stay of Attempted Suicide by Gender and Selected Method.

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
FEMALE								
DAYS STAY	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	226	12.6	6	7.1	0	0	4	14.8
1	718	40.0	19	22.6	0	0	2	7.4
2	340	18.9	13	15.5	1	20	4	14.8
3	173	9.6	7	8.3	0	0	2	7.4
4	75	4.2	6	7.1	0	0	1	3.7
5	44	2.5	3	3.6	1	20	1	3.7
6	40	2.2	4	4.8	1	20	0	0
7	14	0.8	4	4.8	0	0	1	3.7
8	16	0.9	0	0	0	0	1	3.7
9	16	0.9	2	2.4	0	0	1	3.7
10 OR MORE	133	7.4	20	23.8	2	40	10	37.0
TOTAL	1795	100	84	100	5	100	27	100

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
MALE								
DAYS STAY	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	126	12.9	16	10.7	0	0	3	8.3
1	405	41.4	34	22.7	0	0	7	19.4
2	154	15.7	21	14.0	2	14.3	5	13.9
3	92	9.4	12	8.0	3	21.4	1	2.8
4	48	4.9	13	8.7	2	14.3	2	5.6
5	24	2.5	7	4.7	2	14.3	1	2.8
6	18	1.8	11	7.3	1	7.1	2	5.6
7	14	1.4	3	2.0	0	0	1	2.8
8	7	0.7	3	2.0	1	7.1	0	0
9	8	0.8	3	2.0	0	0	1	2.8
10 OR MORE	83	8.5	27	18.0	3	21.4	13	36.1
TOTAL	979	100	150	100	14	100	36	100

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
TOTAL								
DAYS STAY	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	352	12.7	22	9.4	0	0	7	11.1
1	1123	40.5	53	22.6	0	0	9	14.3
2	494	17.8	34	14.5	3	15.8	9	14.3
3	265	9.6	19	8.1	3	15.8	3	4.8
4	123	4.4	19	8.1	2	10.5	3	4.8
5	68	2.5	10	4.3	3	15.8	2	3.2
6	58	2.1	15	6.4	2	10.5	2	3.2
7	28	1.0	7	3.0	0	0	2	3.2
8	23	0.8	3	1.3	1	5.3	1	1.6
9	24	0.9	5	5.2	0	0	2	3.2
10 OR MORE	216	7.8	47	20.1	5	26.3	23	36.5
TOTAL	2774	100	234	100	19	100	63	100

4.2 Age-groups by Gender and Marital Status

Referring to Table 4.2, 70.8% of Widowed are of ages 60 and over, which is quite different to the other categories of marital status and this supports the statement in Section 2.4 that widows and widowers are more likely to be older people. The suspicion that attempts from those in the Single category might correlate with the high number of suicide attempts from young people in Section 2.5 is supported by the finding that 76.3% of attempts from Single were under the age of 25.

As expected, Single is the only group which has attempts from ages 0-14, since all the attempts with ages under 15 were grouped as Single. The young ages of 0-19 do not fall into categories like Divorced, Separated and Widowed. This is to some extent expected, as these categories involve being married before so it is not surprising to see that none of the attempts with ages under 20 fall in these categories.

The category de Facto has a greater proportion falling in ages 20-29 whereas for Married, Divorced and Separated all have the highest proportion of attempts from the ages 40-49. All these findings are not too far from what we would expect (see Table 4.2). The Unknown group also has the highest proportion from ages 40-49.

Single females have a higher proportion of suicide attempts than males under the ages of 20, but males have a higher proportion of attempts for those aged 20 and over. Both sexes labelled Single show a high number and proportion of suicide attempts from the young age-groups. This finding emphases again the problem of suicide attempts among young people in the present society which we have referred to earlier in

Section 3.3. Single females with ages under 15 have a higher percentage of almost 4.5 times that of males, but, in the older age-groups with ages 35 and over, single males have a higher percentage with at least twice the percentage of females.

Separated, Married and Divorced show a similarity of having a higher number of suicide attempts from females than males in most of the age-groups, with an exceptional age-group in each category, namely ages 15-17 for Married, ages 20-24 in category Divorced and ages 60 and over for Separated. Males from the Unknown group have a higher proportion than females for ages under 30 and ages 60 onwards, whereas females dominate the proportion for ages 30-59.

From Sections 3.3 and 3.4, a suspicious relationship between the high attempt rates for widowed males and the high attempts rate for older males is supported as the rate of attempts for widowed males from ages 60 onwards is higher than widowed females of the same ages (5.52 per 10,000 people versus 4.45 per 10,000 people). Although males have a higher rate of attempts for this group, the number of attempts for females is approximate 3.5 times that of males.

Table 4.2 Frequency of Age-group of Attempted Suicide by Gender and Marital Status.

FEMALE	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	0	0	0	0	0	0	0	0	112	10.2	0	0
15 -- 17	0	0	4	7.1	0	0	2	0	0	0	315	28.8	0	0
18 -- 19	3	0.7	3	5.4	0	0	2	0	0	0	199	18.2	0	0
20 -- 24	46	10.6	15	26.8	0	0	18	13.1	0	0	256	23.4	4	11.4
25 -- 29	80	18.5	15	26.8	14	15.7	30	21.9	1	1.5	118	10.8	5	14.3
30 -- 34	54	12.5	3	5.4	20	22.5	22	16.1	6	8.8	49	4.5	8	22.9
35 -- 39	65	15.0	8	14.3	16	18.0	26	19.0	1	1.5	20	1.8	5	14.3
40 -- 49	87	20.1	7	12.5	27	30.3	26	19.0	4	5.9	16	1.5	7	20
50 -- 59	48	11.1	1	1.8	8	9.0	12	8.8	7	10.3	4	0.4	3	8.6
60 -- HI	50	11.5	0	0	4	4.5	3	2.2	49	72.1	1	0.4	3	8.6
TOTAL	433	100	56	100	89	100	137	100	68	100	1093	100	35	100

MALE	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	0	0	0	0	0	0	0	0	16	2.3	0	0
15 -- 17	3	1.3	0	0	0	0	0	0	0	0	154	21.9	2	4.3
18 -- 19	1	0.4	1	2.4	0	0	2	0	0	0	108	15.3	5	10.6
20 -- 24	12	5.0	7	17.1	2	4.8	6	7.1	2	9.5	212	30.1	7	14.9
25 -- 29	22	9.2	8	19.5	6	14.3	12	14.1	0	0	103	14.6	7	14.9
30 -- 34	37	15.5	10	24.4	4	9.5	13	15.3	0	0	39	5.5	4	8.5
35 -- 39	31	13.0	6	14.6	7	16.7	21	24.7	1	4.8	30	4.3	5	10.6
40 -- 49	60	25.1	4	9.8	7	40.5	22	25.9	4	19.0	21	3.0	8	17.0
50 -- 59	31	13.0	2	4.9	2	4.8	7	8.2	0	0.0	8	1.1	3	6.4
60 -- HI	42	17.6	3	7.3	4	9.5	4	4.7	14	66.7	13	1.8	6	12.8
TOTAL	239	100	41	100	42	100	85	100	21	100	704	100	47	100

TOTAL	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	0	0	0	0	0	0	0	0	128	7.1	0	0
15 -- 17	3	0.4	4	4.1	0	0	0	0	0	0	469	26.1	2	2.4
18 -- 19	4	0.6	4	4.1	0	0	0	0	0	0	307	17.1	5	6.1
20 -- 24	58	8.6	22	22.7	2	1.5	24	10.8	2	2.2	468	26.0	11	13.4
25 -- 29	102	15.2	23	23.7	20	15.3	42	18.9	1	1.1	221	12.3	12	14.6
30 -- 34	91	13.5	13	13.4	24	18.3	35	15.8	6	6.7	88	4.9	12	14.6
35 -- 39	96	14.3	14	14.4	23	17.6	47	21.2	2	2.2	50	2.8	10	12.2
40 -- 49	147	21.9	11	11.3	44	33.6	48	21.6	8	9.0	37	2.1	15	18.3
50 -- 59	79	11.8	3	3.1	10	7.6	19	8.6	*	7.9	12	0.7	6	7.3
60 -- HI	92	13.7	3	3.1	8	6.1	7	3.2	63	70.8*	17	0.9	9	11.0
TOTAL	672	100	97	100	131	100	222	100	89	100	1797	100	82	100

Note:
* This cell is referred to in the text.

4.3 Number of Days Stay in Hospital by Gender and Grouped Discharge

The Death group has a highest proportion for zero days stay in hospital, with at least double the proportion of other discharge categories. Other categories have their highest proportion in one day stays with at least twice the percentage of Death (see Table 4.3).

All the categories in Grouped Discharge Type have a high proportion of those discharged in the same day or less than a day, with 46.6%, 50.7%, 50% and 53% for Death, Regular, Psychiatric and Others respectively. This finding reflected the earlier comments in Chapters 2 and 3 that a high percentage of people are discharged on the same day or after a one day stay in hospital.

Looking into details between the gender, a similar pattern as the combined group is observed for each sex in '0' and '1' days stay in hospital. In '0' days stay, the category Death has a higher percentage than other categories, whereas in '1' days stay, the others have a higher percentage. Once again, it should be noted that some confusions may arise between '0' days and '1' days stay in hospital, which was mentioned earlier.

Table 4.3 Frequency of Number of Days Stay of Attempted Suicide by Gender and Grouped Discharge Type.

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
FEMALE								
DAY STAYS	ATTEMPTS	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	4	22.2	205	11.7	8	13.6	19	21.6
1	3	16.7	685	39.2	23	39.0	28	31.8
2	0	0	330	18.9	14	23.7	14	15.9
3	2	11.1	168	9.6	3	5.1	9	10.2
4	2	11.1	73	4.2	3	5.1	4	4.5
5	2	11.1	43	2.5	2	3.4	2	2.3
6	1	5.6	40	2.3	2	3.4	2	2.3
7	1	5.6	16	0.9	1	1.7	1	1.1
8	0	0	17	1.0	0	0	0	0
9	0	0	17	1.0	0	0	2	2.3
10 OR MORE	3	16.7	152	8.7	3	5.1	7	8.0
TOTAL	18	100	1746	100	59	100	88	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
MALE								
DAY STAYS	ATTEMPTS	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	11	40.7	126	12.1	2	4.4	6	9.5
1	3	11.1	397	38.0	19	42.2	27	42.9
2	3	11.1	162	15.5	9	20	8	12.7
3	2	7.4	100	9.6	1	2.2	5	7.9
4	3	11.1	58	5.6	3	6.7	1	1.6
5	3	11.1	25	2.4	3	6.7	3	4.8
6	0	0	29	2.8	1	2.2	2	3.2
7	0	0	18	1.7	0	0	0	0
8	0	0	10	1.0	0	0	1	1.6
9	0	0	11	1.1	0	0	1	1.6
10 OR MORE	2	7.4	108	10.3	3	6.7	9	14.3
TOTAL	27	100	1044	100	45	100	63	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
TOTAL								
DAY STAYS	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
0	15	33.3	331	11.9	10	9.6	25	16.6
1	6	13.3	1082	38.8	42	40.4	55	36.4
2	3	6.7	492	17.6	23	22.1	22	14.6
3	4	8.9	268	9.6	4	3.8	14	9.3
4	5	11.1	131	4.7	6	5.8	5	3.3
5	5	11.1	68	2.4	5	4.8	5	3.3
6	1	2.2	69	2.5	3	2.9	4	2.6
7	1	2.2	34	1.2	1	1.0	1	0.7
8	0	0	27	1.0	0	0	1	0.7
9	0	0	28	1.0	0	0	3	2.0
10 OR MORE	5	11.1	260	9.3	10	9.6	16	10.6
TOTAL	45	100	2790	100	104	100	151	100

4.4 Selected Methods by Gender and Grouped Discharge Types

All the categories in Grouped Discharge Type have the highest proportion of attempts using passive methods. This is mainly due to the high number of attempts from these methods. Although passive methods have the highest proportion in the Death group, it only accounts for 1.2% (32/ 2774 * 100%) of the people who attempted suicide. The best success rate recorded was from active methods with a 5.1% (12/234 * 100%) success rate. Late Effects of Self Inflicted-Injury is the only category which did not have any one in the discharge by death category.

In the category Discharge by Death, males have a higher proportion of suicide attempts by those who used active methods. This supports the finding of Section 3.5 that there was a higher rate of success in suicide attempts for males than females. This was confirmed as only 3.6% (3/ 84 * 100%) of females who used active methods succeeded in attempts and for males the success rate was 6.0% (9/150 * 100%). Males also have a better success rate than females for those who used passive methods, 1.8% (18/979 * 100%) versus 0.8% (14/1795 * 100%). Perhaps it suggested that males have more serious intentions in suicide attempts than females.

Differences are observed between the genders in the categories Death, Regular and Psychiatric for those who used active methods as 33.3% of males completed suicide by active methods which is about twice the proportion of females with only 16.7%. In the regular and psychiatric groups, males had a proportion of about 3 times that of females.

Table 4.4 Frequency of Selected Method of Attempted Suicide by Gender and Grouped Discharge Type.

FEMALE	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
SELECTED METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	14	77.8	1653	94.7	54	91.5	74	84.1
ACTIVE	3	16.7*	69	4.0	3	5.1	9	10.2
LATE EFFECTS	0	0	4	0.2	0	0	1	1.1
OTHERS	1	5.6	20	1.1	2	3.4	4	4.5
TOTAL	18	100	1746	100	59	100	88	100

MALE	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
SELECTED METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	18	66.7	876	83.9	34	75.6	51	81.0
ACTIVE	9	33.3*	128	12.3	7	15.6	6	9.5
LATE EFFECTS	0	0	11	1.1	1	2.2	2	3.2
OTHERS	0	0	29	2.8	3	6.7	4	6.3
TOTOL	27	100	1044	100	45	100	63	100

TOTAL	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
SELECTED METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	32	71.1	2529	90.6	88	84.6	125	82.8
ACTIVE	12	26.7	197	7.1	10	9.6	15	9.9
LATE EFFECTS	0	0	15	0.5	1	1.0	3	2.0
OTHERS	1	2.2	49	1.8	5	4.8	8	5.3
TOTAL	45	100	2790	100	104	100	151	100

* These cells are referred to in the text.

4.5 Age-groups by Gender and Selected Methods

In this section, methods of suicide attempts are grouped as Passive, Active, Late Effects of Self-Inflicted Injury and Others. Both active and passive methods had the highest proportion of attempts relative to the total for ages 20-24 (see Table 4.5). About one-fifth of those who used passive methods are under the ages of 18. This finding supports the

suspicion of correlation between most frequently used method (poisoning by solid or liquid substances) and high number of suicide attempts in youths mentioned in Section 2.7. Also, 96.9% (124/128 * 100%) of those of ages under 15, used passive methods which again strongly supports the discussion of Section 2.7.

Both active and passive methods have a similar percentage of suicide attempts for middle aged people (30-49 years). The percentages are 26.4% for passive methods and 27.8% for active methods. A big difference is shown between the passive methods and the active methods for those who are aged under 15, 4.5% of those who used passive methods are of ages under 15, a percentage of about 3 times that of active methods.

For those in the ages 30-34, 11.9% (32/269 * 100%) of attempts used active methods which is the highest compared to other age-groups, followed by 9.5% (56/587 * 100%) from ages 20-24 and 9.0% (18/199 * 100%) from ages 60 onwards. The elderly (with ages 60 onwards) have a higher proportion using active methods for suicide attempts compared to youths of ages under 20.

Both passive and active methods have a higher proportion of suicide attempts from males of age 50 and over compared to females of the same ages. For females, active methods accounts for 2.4% of attempts for ages under 15, whereas males only have 0.7%, a ratio of more than 3 times.

The category of 40-49 showed higher percentages of attempts than 35-39 for both males and females by active and passive methods.

Table 4.5 Frequency of Age-group of Attempted Suicide by Gender and Selected Method.

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
FEMALE								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	110	6.1	2	2.4*	0	0	0	0.0
15 -- 17	307	17.1	9	10.7	0	0	3	11.1
18 -- 19	194	10.8	6	7.1	0	0	5	18.5
20 -- 24	302	16.8	23	27.4	2	40	12	44.4
25 -- 29	249	13.9	10	11.9	2	40	2	7.4
30 -- 34	148	8.2	12	14.3	0	0	2	7.4
35 -- 39	136	7.6	4	4.8	1	20	0	0.0
40 -- 49	163	9.1	10	11.9	0	0	1	3.7
50 -- 59	80	4.5	2	2.4	0	0	1	3.7
60 -- HI	106	5.9	6	7.1	0	0	1	3.7
TOTAL	1795	100	84	100	5	100	27	100

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
MALE								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	14	1.4	1	0.7*	0	0	1	2.8
15 -- 17	141	14.4	13	8.7	0	0	5	13.9
18 -- 19	90	9.2	21	14.0	0	0	4	11.1
20 -- 24	201	20.5	33	22.0	2	14.3	12	33.3
25 -- 29	132	13.5	23	15.3	1	7.1	2	5.6
30 -- 34	81	8.3	20	13.3	5	35.7	1	2.8
35 -- 39	90	9.2	7	4.7	0	0	4	11.1
40 -- 49	114	11.6	12	8.0	4	28.6	6	16.7
50 -- 59	44	4.5	8	5.3	1	7.1	0	0.0
60 -- HI	72	7.4	12	8.0	1	7.1	1	2.8
TOTAL	979	100	150	100	14	100	36	100

	PASSIVE		ACTIVE		LATE EFFECTS		OTHERS	
TOTAL								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	124	4.5*	3	1.3	0	0	1	1.3
15 -- 17	448	16.1	22	9.4	0	0	8	12.7
18 -- 19	284	10.2	27	11.5	0	0	9	14.3
20 -- 24	503	18.1	56	23.9	4	21.1	24	38.1
25 -- 29	381	13.7	33	14.1	3	15.8	4	6.3
30 -- 34	229	8.3	32	13.7	5	26.3	3	4.8
35 -- 39	226	8.1	11	4.7	1	5.3	4	6.3
40 -- 49	277	10.0	22	9.4	4	21.1	7	11.1
50 -- 59	124	4.5	10	4.3	1	5.3	1	1.6
60 -- HI	178	6.4	18	7.7	1	5.3	2	3.2
TOTAL	2774	100	234	100	19	100	63	100

Note:
* These cells are referred to in the text.

4.6 Age-groups by Gender and Grouped Discharge Types

In categories Death, Regular and Others, the highest proportion of attempts is from ages 20-24 with 26.7% for Death, 18.7% for Regular and 23.2% for Others, whereas Psychiatric has a highest proportion (22.1%) from a different age-group, that is ages 25-29. The corresponding cells of Table 4.6 are starred (*) to illustrate this point. None of those with ages under 15 resulted in death. Perhaps, this is an indication of a nonserious attempt or an accident rather than a suicide attempt.

Comparing the proportion of success among all the age-groups for the totals of males and females, older groups have a higher rate of completing suicide with ages 40-49, 50-59 and 60 and over having the proportions of 2.3 (7/310 * 100%), 3.7 (5/136 * 100%) and 4.0 (8/199 * 100%) respectively. Ages 18-19 only have a success rate of 0.6% (2/320 * 100%) which is the same as ages 15-17 (0.6% (2/478 * 100%)). Wilson (1981) noted that "elderly people completing suicide more frequently than younger people may be the result of a number of factors:

(1) The physical vulnerability of older people would make an attempt more lethal, and physical isolation, which makes being found and given aid less likely.

(2) The elderly might have more intention to commit suicide because of social, psychological and physiological states".

To these may be added a third factor that they used more active methods than the younger people which we have observed in Section 4.5.

When gender was studied separately, the proportion of males followed a similar pattern to the combined proportion. That is, categories Death, Regular and Others have the highest proportion of attempts from ages 20-

24 and Psychiatric has the highest from ages 25-29. For females, the picture is slightly different as in the Death group, the highest is shared between ages 20-24 and ages 60 onwards. For Regular, Psychiatric and Others, the highest are from ages 15-17, ages 25-29 and ages 20-24 respectively. None of the females of ages under 15 and ages 30-39 completed suicide, whereas for males, none under the age of 18 did so.

For those discharged to psychiatric hospitals, the patterns for females and males are similar. Indeed, the correlation between the percentages for these groups is 0.85.

The proportion of ages 15-17 for females in the category Psychiatric (8.5%) is almost 4 times that of the males proportion (2.2%), whereas in ages 35-39, the males proportion is about twice the females proportion. In the category Regular, females with ages under 15 have a higher proportion of about 4 times that of males.

Table 4.6 Frequency of Age-group of Attempted Suicide by Gender and Grouped Discharge Type.

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
FEMALE								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	108	6.2	0	0	4	4.5
15 -- 17	2	11.1	305	17.5	5	8.5*	7	8.0
18 -- 19	1	5.6	190	10.9	4	6.8	10	11.4
20 -- 24	4	22.2	304	17.4	10	16.9	21	23.9
25 -- 29	3	16.7	239	13.7	14	23.7	7	8.0
30 -- 34	0	0	149	8.5	8	13.6	5	5.7
35 -- 39	0	0	128	7.3	4	6.8	9	10.2
40 -- 49	2	11.1	156	8.9	6	10.2	10	11.4
50 -- 59	2	11.1	73	4.2	4	6.8	4	4.5
60 -- HI	4	22.2	94	5.4	4	6.8	11	12.5
TOTAL	18	100	1746	100	59	100	88	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
MALE								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	16	1.5	0	0	0	0
15 -- 17	0	0	153	14.7	1	2.2*	5	7.9
18 -- 19	1	3.7	101	9.7	4	8.9	9	14.3
20 -- 24	8	29.6	218	20.9	8	17.8	14	22.2
25 -- 29	2	7.4	140	13.4	9	20.0	7	11.1
30 -- 34	2	7.4	92	8.8	7	15.6	6	9.5
35 -- 39	2	7.4	91	8.7	6	13.3	2	3.2
40 -- 49	5	18.5	117	11.2	6	13.3	8	12.7
50 -- 59	3	11.1	44	4.2	2	4.4	4	6.3
60 -- HI	4	14.8	72	6.9	2	4.4	8	12.7
TOTAL	27	100	1044	100	45	100	63	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
TOTAL								
AGE-GROUP	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
LO -- 14	0	0	124	4.4	0	0	4	2.6
15 -- 17	2	4.4	458	16.4	6	5.8	12	7.9
18 -- 19	2	4.4	291	10.4	8	7.7	19	12.6
20 -- 24	12	26.7*	522	18.7*	18	17.3	35	23.2*
25 -- 29	5	11.1	379	13.6	23	22.1*	14	9.3
30 -- 34	2	4.4	241	8.6	15	14.4	11	7.3
35 -- 39	2	4.4	219	7.8	10	9.6	11	7.3
40 -- 49	7	15.6	273	9.8	12	11.5	18	11.9
50 -- 59	5	11.1	117	4.2	6	5.8	8	5.3
60 -- HI	8	17.8	166	5.9	6	5.8	19	12.6
TOTAL	45	100	2790	100	104	100	151	100

Note:
* These cells are referred to in the text.

4.7 Marital Status by Gender and Grouped Discharge Types

Not surprisingly, all the categories of Grouped Discharge Type have the highest proportion of frequency of suicide attempts in the Single category. The proportions are 42.2%, 58.9%, 54.8% and 51.7% for Death, Regular, Psychiatric and Others respectively (see the starred cells in Table 4.7).

'Unknown' has the highest success rate in attempting suicide, 6.1% (5/82 * 100) of this category succeeded in the attempts. A category which also has a high success rate is Widowed as it explains 4.5% (4/89 * 100) of the success rate in this category. The only group where none of the attempts resulted in death is de Facto.

The proportion of the total in each marital status which were transferred to a psychiatric hospital are shown in Table 4.7a. Separated has the highest proportion consulting a psychiatrist compared to other categories in marital status.

For the discharge category of Death, the number of males in each marital status other than widowed was at least as much as for the females. When the frequencies are converted to percentages, however, the majority of marital states females have a higher proportion than males, apart from categories Married and Unknown. Whereas for Psychiatric group, males have a higher proportion in Married and Separated, especially for Separated where males have 24.4% and females have only 6.8%.

Comparing the sexes for the percentages of marital status that transferred to a psychiatric hospital, females have a higher proportion in the groups de Facto, Divorced, Widowed and Unknown whereas males dominate the

proportion in categories Married, Separated and Single. The Single group has little difference for the proportion of sexes, with females having 3.1% and 3.3% for males. A big difference was shown in the Separated group with males having a percentage which is approximately 4.5 times that of females.

Table 4.7 Frequency of Marital Status of Attempted Suicide by Gender and Grouped Discharge Type.

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
FEMALE MARITAL STATUS	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
MARRIED	3	16.7	397	22.7	11	18.6	22	25
DE FACTO	0	0	50	2.9	1	1.7	5	5.7
DIVORCED	1	5.6	81	4.6	5	8.5	2	2.3
SEPARATED	2	11.1	124	7.1	4	6.8*	7	8.0
WIDOWED	3	16.7	57	3.3	2	3.4	6	6.8
SINGLE	8	44.4	1009	57.8	34	57.6	42	47.7
UNKNOWN	1	5.6	28	1.6	2	3.4	4	4.5
TOTAL	18	100	1746	100	59	100	88	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
MALE MARITAL STATUS	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
MARRIED	8	29.6	206	19.7	9	20.0	16	25.4
DE FACTO	0	0	38	3.6	0	0	3	4.8
DIVORCED	1	3.7	39	3.7	1	2.2	1	1.6
SEPARATED	2	7.4	71	6.8	11	24.4*	1	1.6
WIDOWED	1	3.7	17	1.6	0	0	3	4.8
SINGLE	11	40.7	634	60.7	23	51.1	36	57.1
UNKNOWN	4	14.8	39	3.7	1	2.2	3	4.8
TOTAL	27	100	1044	100	45	100	63	100

	DEATH		REGULAR		PSYCHIATRIC		OTHERS	
TOTAL MARITAL STATUS	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
MARRIED	11	24.4	603	21.6	20	19.2	38	25.2
DE FACTO	0	0	88	3.2	1	1.0	8	5.3
DIVORCED	2	4.4	120	4.3	6	5.8	3	2.0
SEPARATED	4	8.9	195	7.0	15	14.4	8	5.3
WIDOWED	4	8.9	74	2.7	2	1.9	9	6.0
SINGLE	19	42.2*	1643	58.9*	57	54.8*	78	51.7*
UNKNOWN	5	11.1	67	2.4	3	2.9	7	4.6
TOTAL	45	100	2790	100	104	100	151	100

Note:
*** These cells are referred to in the text.**

Table 4.7a Percentage of Total in Each Marital Status that Transferred to Psychiatric Hospital.

	PERCENTAGE THAT TRANSFERRED TO PSYCHIATRIC HOSPITAL		
MARITAL STATUS	FEMALE	MALE	TOTAL
MARRIED	2.5	3.8	3.0
DE FACTO	1.8	0	1.0
DIVORCED	5.6	2.4	4.6
SEPARATED	2.9	12.9	6.8
WIDOWED	2.9	0	2.2
SINGLE	3.1	3.3	3.2
UNKNOWN	5.7	2.1	3.7

4.8 Selected Methods by Gender and Marital Status

Table 4.8 clearly shows that all those attempting suicide from all marital states used mostly passive methods with the category Divorced having the highest proportion, 93.1%.

Unknown had the highest percentage (19.5%) which used the active methods followed by de Facto with a proportion of 14.4%. Single people accounted for 1607 cases (89.4%) who used passive methods in attempting suicide. This high proportion gives support to the study in Sections 2.5 and 3.4, where a high number of young people who attempted suicide correlated to the most frequently used method, namely poisoning by solid or liquid substances.

Females from every category of Marital Status used more passive methods than males. The proportion of males using active methods is more than twice the proportion of females with the biggest differences (more than 3 times) shown in de Facto, Widowed and Unknown.

Table 4.8 Frequency of Selected Method of Attempted Suicide by Gender and Marital Status.

FEMALE	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	409	94.5	52	92.9	86	95.5	131	95.6	63	92.6	1024	93.7	31	88.6
ACTIVE	15	3.5	4	7.1	2	2.2	6	4.4	5	7.4	49	4.5	3	8.6
LATE EFFECTS	1	0.2	0	0	1	1.1	0	0	0	0	3	0.3	0	0
OTHERS	8	1.8	0	0	1	1.1	0	0	0	0	17	1.6	1	2.9
TOTAL	433	100	56	100	89	100	137	100	68	100	1093	100	35	100

MALE	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	209	87.4	30	73.2	37	88.1	72	84.7	15	71.4	583	82.8	33	70.2
ACTIVE	21	8.8	10	24.4	2	4.8	11	12.9	6	28.6	87	12.4	13	27.7
LATE EFFECTS	3	1.3	0	0	3	7.1	0	0	0	0	8	1.1	0	0
OTHERS	6	2.5	1	2.4	0	0	2	2.4	0	0	26	3.7	1	2.1
TOTAL	239	100	41	100	42	100	85	100	21	100	704	100	47	100

TOTAL	MARRIED		DE FACTO		DIVORCED		SEPARATED		WIDOWED		SINGLE		UNKNOWN	
METHOD	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
PASSIVE	618	92.0	82	84.5	122	93.1*	203	91.4	78	87.6	1607*	89.4*	64	78.0
ACTIVE	36	5.4	14	14.4*	4	3.1	17	7.7	11	12.4	136	7.6	16	19.5*
LATE EFFECTS	4	0.6	0	0	4	3.1	0	0	0	0	11	0.6	0	0
OTHERS	14	2.1	1	1.0	1	0.8	2	0.9	0	0	43	2.4	2	2.4
TOTAL	672	100	97	100	131	100	222	100	89	100	1797	100	82	100

Note:
*** These cells are referred to in the text.**

Chapter 5
Some Comparisons Over Time (1980-1988)

5.0 Introduction

In this chapter, we will be looking to see if there is any obvious change in the frequency and the rate of suicide attempts over time, namely from 1980 through to 1988. Earlier in Chapters 2 and 3, many differences in the 1988 data had been noted between the frequency and rate of suicide attempts for females and males. In this chapter, comparisons between females and males in the changes of suicide attempts over the years 1980 and 1988 will be focused on as well as any obvious trends.

The comparisons will be made on the variables which were studied in the earlier chapters for the 1988 Morbidity Data, the definitions for these variables in the year 1980 being the same as in 1988 which were mentioned in Chapter 1 (See Appendix A for the details of the coding of variables).

The 1980 Morbidity Data were grouped by Admission Date as mentioned in Chapter 1. After grouping, the total number of attempts recorded were 2333 cases in 1980. In order to be able to compare the geographic distribution over Statistical Areas, Urban and Rural Areas, matching was done on the two sets of data (Morbidity and Census data) in

the same way mentioned previously for the 1988 data. Unfortunately, the 1980 Morbidity Data had a higher number of area units which did not match with the area units of the Census Data, so that, after matching, the valid cases remaining for 1980 were reduced to 2028. Again, only the valid cases in both years will be used in this study.

In Chapter 1, a check on the degree of change between the census of 1981 and 1986 showed only small differences. Therefore, the 1981 Census Data were used to obtain the rate of suicide attempts for the 1980 Morbidity Data, as these censuses data should be close to the population figures of 1980.

5.1 Gender

Both sexes showed an increase in the number of attempts from 1980 to 1988 (Table 5.1 and Figure 5.1). The percentage change in frequency from 1980 to 1988 was 49.8% for females, whereas males had a higher change of 56.8% and, overall, the percentage change in total frequency from 1980 to 1988 was 52.4%.

When the population frequencies were taken into account, the total rate of attempts increased from 6.45 per 10,000 people in 1980 to 9.47 per 10,000 in 1988. The percentage change in total rate from 1980 to 1988 was 46.8%. Both sexes showed an upward direction in rates, with females rates increasing by 43.9% and males rates by 51.6%. Female rates were markedly higher than for males in both 1980 and 1988. There was a slight drop of 5.1% of the female rate relative to male over the time due to a rising male suicide attempts rate.

Table 5.1 Frequency, Rate and Percentage Increased of Suicide Attempts by Gender and Total in Years 1980 and 1988.

	1980	1988	CHANGE (%)
FREQUENCY (F)	1276	1911	49.8[c]
FREQUENCY (M)	752	1179	56.8[d]
FREQUENCY (T)	2028	3090	52.4[e]
RATE (F)[a]	8.07	11.61	43.9[f]
RATE (M)[a]	4.81	7.29	51.6[g]
RATE (T)[a]	6.45	9.47	46.8[h]
F/M PERCENTAGE[b]	167.8	159.3	-5.1[i]

Note: F = Female M = Male T = Total.
a The Number of Attempts per 10,000 People.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
c, d and e calculated from the Number of Attempts over the years.
f, g and h calculated from the Rate of Attempts over the years.
i calculated from b over the years.

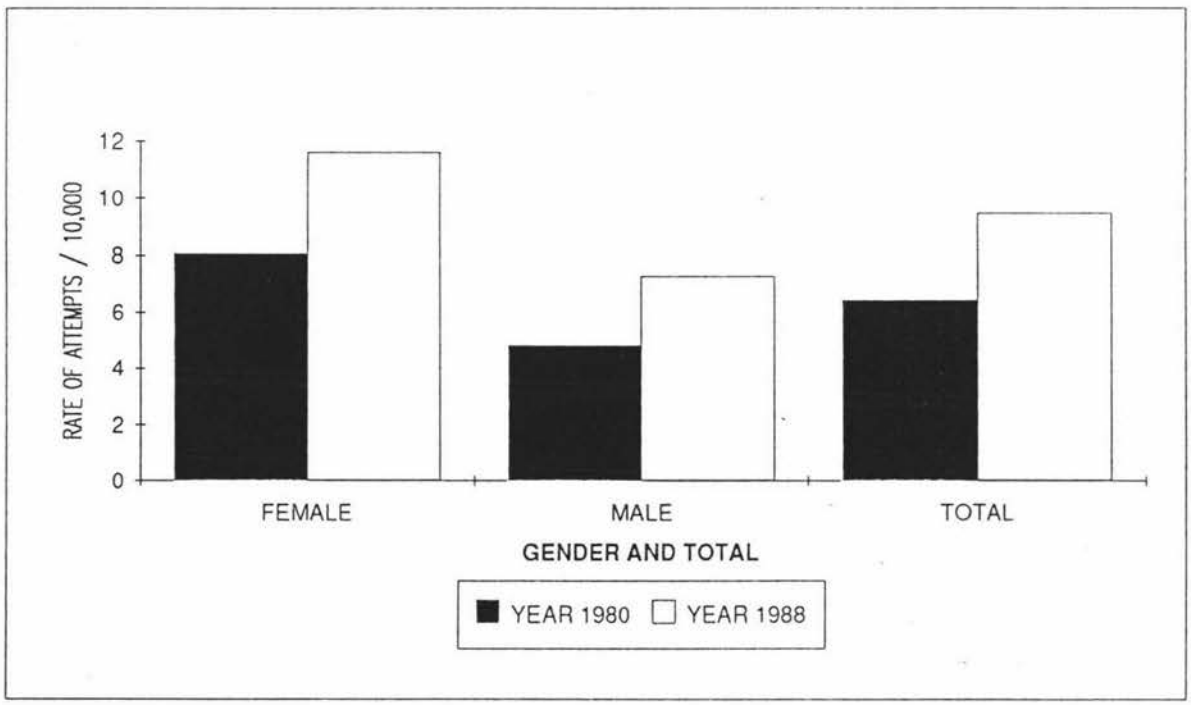


Figure 5.1 Rate of Attempts per 10,000 by Gender and Total in Years 1980 and 1988.

5.2 Length of Stays in Hospital After Attempted Suicide

A problem arose when comparing the number of days stay in hospital between the years 1980 and 1988. Unfortunately, the Morbidity Data in 1980 did not provide the information of zero days stay in hospital as did the 1988 data. The reasons why this happened could be due to different ways of collecting data in 1980 compared to 1988. For example, 1980 Morbidity Data may not have included the day patients or perhaps the definitions differed for the two years for example, the '1' day stay category could include the '0' days stay cases. Because of this ambiguity, the categories '0' days stay and '1' days stay in the 1988 Morbidity Data have been combined together to allow comparison with the 1980 data. The possibility of errors affecting the accuracy of results should be noted.

In terms of frequency of suicide attempts, the 1988 data dominated in all periods of stay in hospital other than '7' days (refer to Table 5.2). This could be expected, as 1988 had a greater number of suicide attempts than 1980.

When the percentage in each category relative to the total number of attempts were taken into account, a different picture emerged as 1988 only had a higher percentage for the shorter stays, for example, 0 - 2 days. Other than in these categories, 1980 had higher percentages than 1988. In 1988, 50.7% of people who attempted suicide had been discharged within a day or less, a higher percentage than 44.6% in 1980. Perhaps this is related to the high number of drugs or poisoning substances used in the suicide attempts in 1988 which we had studied in earlier chapters or to a deliberate hospital policy to keep people for a

shorter period.

The years 1980 and 1988 were similar in that frequency of attempts decreased with the length of stay. However, a greater percentage of patients, 68.2%, were released after 2 or less days in 1988 compared with 59.5% in 1980. At the other end of the scale, fewer people were kept in hospital for long stays in 1988. In 1980, 16.5% of people stayed in hospital for 7 days or more, whereas for 1988, only 12.5% had stayed that long. The higher percentage of longer care needed in 1980 could well be a reflection of higher proportions of active methods used in 1980 or perhaps, a more serious motivation of attempts. Apart from stays of 7 days, other categories showed an increased percentage change in frequency over the years in Table 5.2, with 2 days stay in hospital having the highest percentage increase followed by 0 and 1 day stay which compares with only an increase of 1.2% for stays of 5 days.

Both sexes showed similar trends in the length of stay in hospital for both years (Figures 5.3 and 5.4). When the percentage change in frequency over the years is studied in Table 5.2, a more complicated situation emerges. In categories '0 and 1' and '2', both sexes showed a similar amount of change in percentages over time, whereas in categories '3', '4' '6' and '10 or more', males had a much higher percentage increased compared to females. For males, categories '5', '7', '8' and '9' showed a decreased percentage change in frequency over time and for females we have category '7' which has a large decreasing percentage from 1980 to 1988.

Overall, frequency of total and sexes in both years had a fairly similar trend in the number of days stay in hospital.

Table 5.2 Frequency and Percentage Increased of Suicide Attempts by Days Stay in Hospital in Years 1980 and 1988.

FEMALE

DAYS STAY	1980		1988		CHANGE (%) [a]
	#	%	#	%	
0 AND 1	565	44.3	975	51.0	72.6
2	201	15.8	358	18.7	78.1
3	141	11.1	182	9.5	29.1
4	77	6.0	82	4.3	6.5
5	47	3.7	49	2.6	4.3
6	40	3.1	45	2.4	12.5
7	38	3.0	19	1.0	-50.0
8	12	0.9	17	0.9	41.7
9	15	1.2	19	1.0	26.7
10 OR MORE	140	11.0	165	8.6	17.9
TOTAL	1276	100	1911	100	

MALE

DAYS STAY	1980		1988		CHANGE (%) [a]
	#	%	#	%	
0 AND 1	340	45.2	591	50.1	73.8
2	102	13.6	182	15.4	78.4
3	75	10.0	108	9.2	44.0
4	44	5.9	65	5.5	47.7
5	35	4.7	34	2.9	-2.9
6	26	3.5	32	2.7	23.1
7	21	2.8	18	1.5	-14.3
8	14	1.9	11	0.9	-21.4
9	13	1.7	12	1.0	-7.7
10 OR MORE	82	10.9	126	10.7	53.7
TOTAL	752	100	1179	100	

TOTAL

DAYS STAY	1980		1988		CHANGE (%) [a]
	#	%	#	%	
0 AND 1	905	44.6*	1566	50.7*	73.0
2	303	14.9	540	17.5	78.2
3	216	10.7	290	9.4	34.3
4	121	6.0	147	4.8	21.5
5	82	4.0	83	2.7	1.2*
6	66	3.3	77	2.5	16.7
7	59	2.9	37	1.2	-37.3
8	26	1.3	28	0.9	7.7
9	28	1.4	31	1.0	10.7
10 OR MORE	22	10.9*	291	9.4*	31.1
TOTAL	2028	100	3090	100	

Note:
Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.

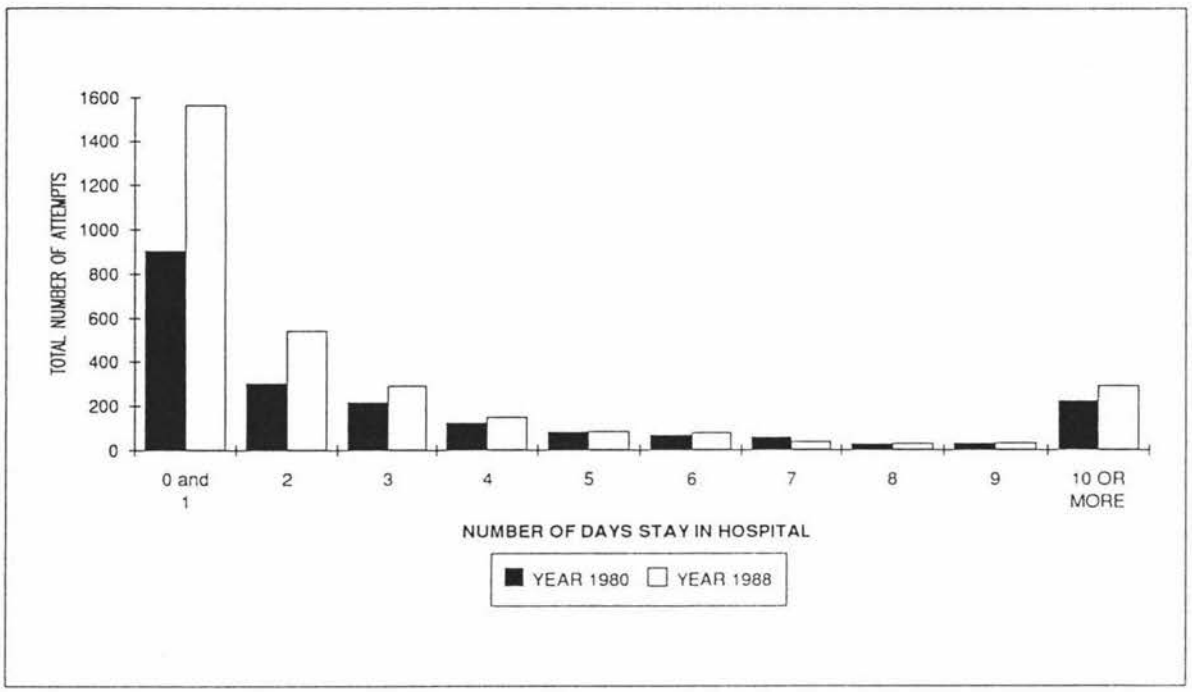


Figure 5.2 Total Number of Attempts by Number of Days Stay in Hospital in Years 1980 and 1988.

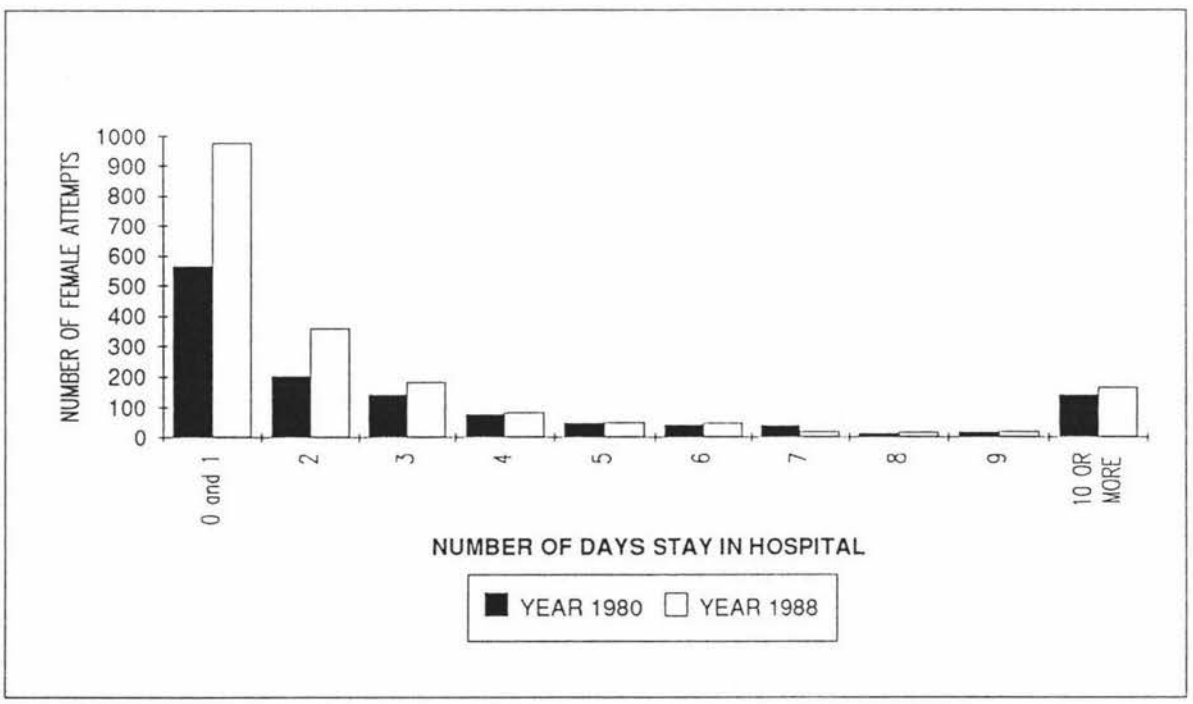


Figure 5.3 Number of Female Attempts by Number of Days Stay in Hospital in Years 1980 and 1988.

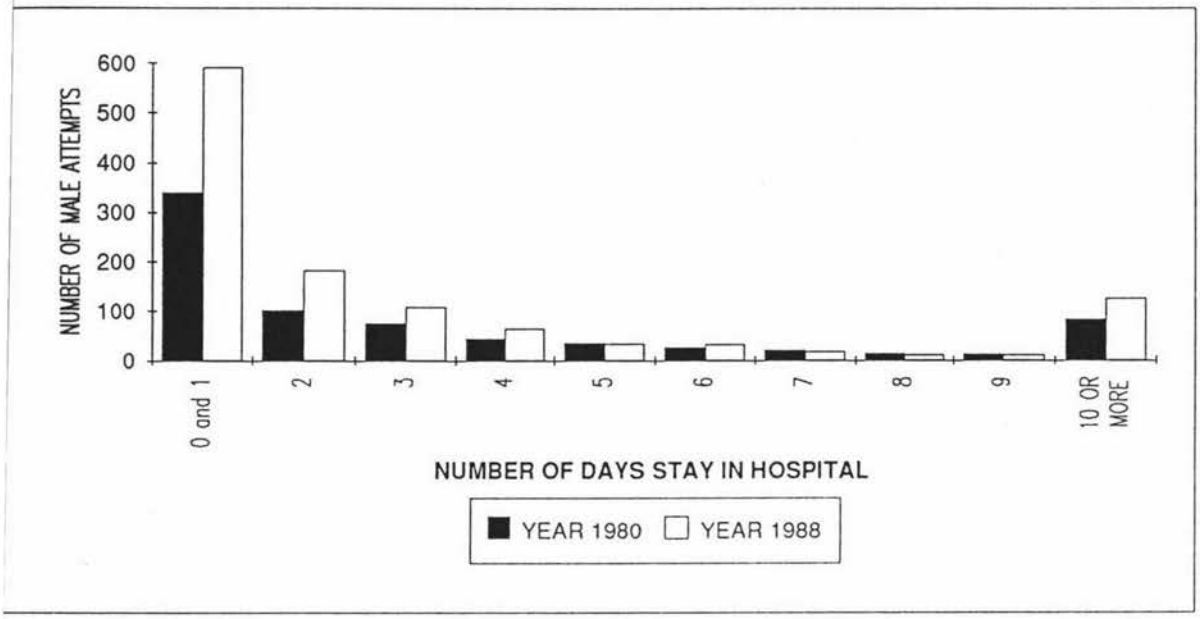


Figure 5.4 Number of Male Attempts by Number of Days Stay in Hospital in Years 1980 and 1988.

5.3 Ethnicity

All categories, except Other, had a greater number of suicide attempts in 1988 compared to 1980 (see Table 5.3). 'Other' in 1980 has almost twice the number of 1988, whereas the rest have a totally reversed picture. The reduction in Other probably reflects the better collection of information on racial background in 1988.

In 1980, every category of ethnic background has a higher number of female attempts which shows a slightly different picture compared to 1988. In 1988, there is an exception in that Pacific Islanders have higher frequencies of male attempts than females. As 1988 has a higher number of attempts, it is not surprising to see that 1988 dominates 1980 in the number of attempts in most of the categories of race, apart from

Other.

Note that the rates of attempts from the Other group were omitted in this section as the rates were not applicable since the numerator did not match with the denominator.

A similar picture emerges when the total populations are taken into account. Figure 5.5 shows clearly that all the categories have a higher rate of attempts in 1988 than in 1980. Maori, which had the highest rate of attempts in 1988, increased the least in percentage change in rate over the time period. The greatest increase of percentage change in rate was from Indians with 200.7% over the years.

Rates of total attempts and rates of attempts for sexes in 1988 are greater than those in 1980. In 1980, females dominate the attempts rate for all different ethnic background, but in 1988, we have an exception in that Pacific Islander males have a higher rate of attempts than females.

Rates of all races and both sexes increased from 1980 to 1988. In terms of percentage change in rate over the time, Indian males and Pacific Islander males showed a much higher increasing percentage change compared to others. In 1988, Indian males had increased by 261.3% of the rate in 1980, whereas for males Pacific Islanders, the increased was 271.7%. That may explain why Pacific Islanders have a higher males rate in 1988 than females.

The big variation in percentages of suicide attempts rate for some races like Chinese, Indian and Pacific Islander may not explain much of the situation. This is mainly because of the small populations and small number of suicide attempts which in turn would greatly affect the per-

centages increases. With large populations and a large number of suicide attempts for the groups like Maori and European, though the total percentages of suicide attempts rate increased are smaller than Indian and Chinese, it indicates a more serious result of increased frequency of attempts. Overall, Maori have the highest suicide attempts rate for both sexes and total rate in 1980 and 1988.

Table 5.3 shows clearly that the proportion of females rate relative to males rate decreased over the years for most groups except Chinese and European with Pacific Islanders showing the greatest amount of decrease.

Table 5.3a contains the figures which exclude cases of ages under 10 for the years 1980 and 1988, in similar fashion to the method of Sections 2.3 and 3.2. The differences for the sexes and combined group over the years for each group in Table 5.3a were bigger than those in Table 5.3.

The year 1980 had the same characteristics as 1988, being an increasing rate of attempts for both sexes and the combined group as well as the ranking of the rate in these groups. In 1980, Chinese and Indians increased in percentages for the ratio of female rate to the male rate of attempts, others had a smaller value when these cases of ages under 10 were deleted. Overall, the values of F/M(%) columns do not differ much from those in 1988.

Table 5.3 Frequency, Rate and Percentage Increased of Suicide Attempts by Race in Years 1980 and 1988.

	FEMALE FREQUENCY			MALE FREQUENCY			TOTAL FREQUENCY		
RACE	1980	1988		1980	1988		1980	1988	
EUROPEAN	660	1350		444	822		1104	2172	
MAORI	165	305		79	175		244	480	
PACIFIC ISLANDER	23	32		9	36		32	68	
CHINESE	3	8		1	2		4	10	
INDIAN	2	6		1	4		3	10	
OTHER	423	210		218	140		641	350	
	FEMALE RATE[a]			MALE RATE[a]					
RACE	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[b]			
EUROPEAN	4.86	9.62	97.9	3.31	5.98	80.7			
MAORI	11.85	20.11	69.7	5.65	11.48	103.2			
PACIFIC ISLANDER	5.03	6.36	26.4	1.91	7.10	271.7*			
CHINESE	3.37	8.17	142.4	1.04	1.98	90.4			
INDIAN	3.78	10.22	170.4	1.68	6.07	261.3*			
	TOTAL RATE[a]			F/M PERCENTAGE[c]					
RACE	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[d]			
EUROPEAN	4.09	7.82	91.2	146.8	160.8	9.5			
MAORI	8.74	15.79	80.7	209.7	175.1	-16.5			
PACIFIC ISLANDER	3.45	6.73	95.1	262.9	89.5	-65.9			
CHINESE	2.16	5.03	132.9	322.9	411.9	27.6			
INDIAN	2.67	8.03	200.7*	225.4	168.4	-25.3			

NOTE:

a The Number of Attempts per 10,000 people.

b Calculated from the Number of Attempts over the years.

c The Proportion of Female Rate of Suicide Attempts Relative to Male.

d Calculated from c over the years.

* These cells are referred to in the text.

Table 5.3a Frequency, Rate and Percentage Increased of Suicide Attempts by Race in Years 1980 and 1988 (without the cases of ages under 10).

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
RACE	1980	1988	1980	1988	1980	1988
EUROPEAN	659	1349	444	820	1103	2169
MAORI	164	304	79	174	243	478
PACIFIC ISLANDER	23	31	9	36	32	67
CHINESE	3	8	1	2	4	10
INDIAN	2	6	1	4	3	10

	FEMALE RATE[a]			MALE RATE[a]		
RACE	1980	1988	CHANGE (%)[b]	1980	1988	CHANGE (%)[b]
EUROPEAN	5.74	11.13	93.9	3.96	6.99	76.5
MAORI	15.84	26.25	65.7	7.67	15.13	97.3
PACIFIC ISLANDER	6.94	7.97	14.8	2.67	9.34	249.8
CHINESE	4.13	9.43	128.3	1.27	2.29	80.3
INDIAN	4.84	12.38	155.8	2.12	7.23	241.0

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
RACE	1980	1988	CHANGE (%)[b]	1980	1988	CHANGE (%)[d]
EUROPEAN	4.86	9.10	87.2	145.0	159.2	9.8
MAORI	11.77	20.71	76.0	206.4	173.4	-16.0
PACIFIC ISLANDER	4.78	8.65	81.0	260.3	85.4	-67.2
CHINESE	2.64	5.81	120.1	324.9	411.2	26.6
INDIAN	3.39	9.64	184.4	228.3	171.2	-25.0

NOTE:

a The Number of Attempts per 10,000 people.

b Calculated from the Number of Attempts over the years.

c The Proportion of Female Rate of Suicide Attempts Relative to Male.

d Calculated from c over the years.

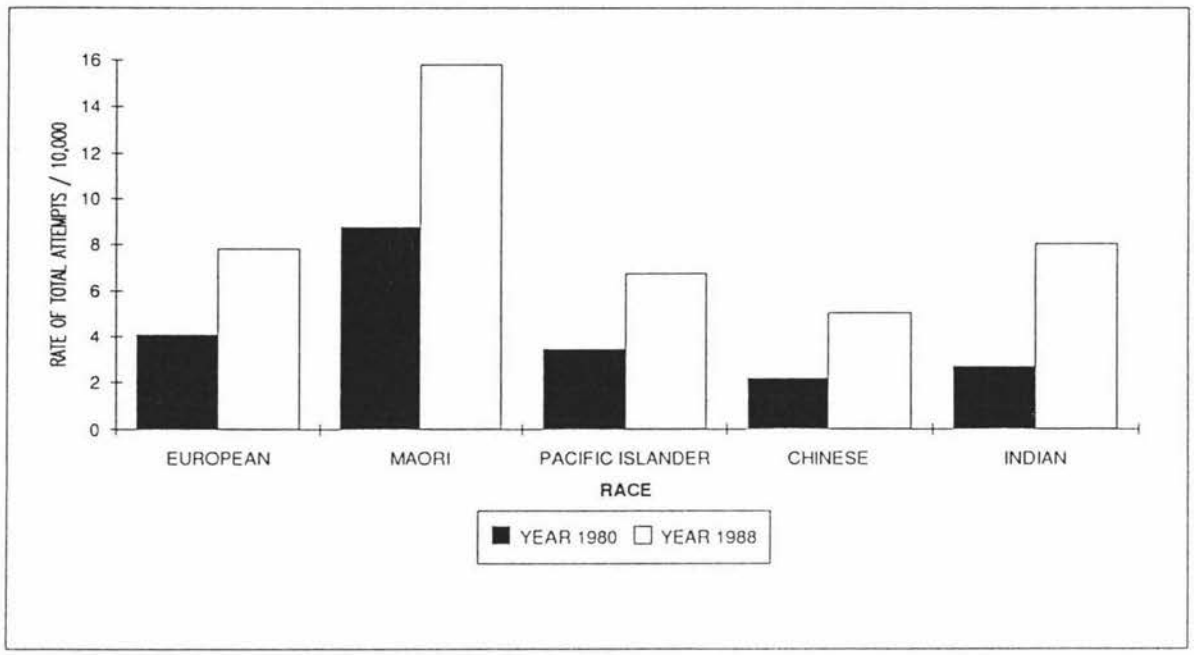


Figure 5.5 Rate of Attempts per 10,000 by Race in Years 1980 and 1988.

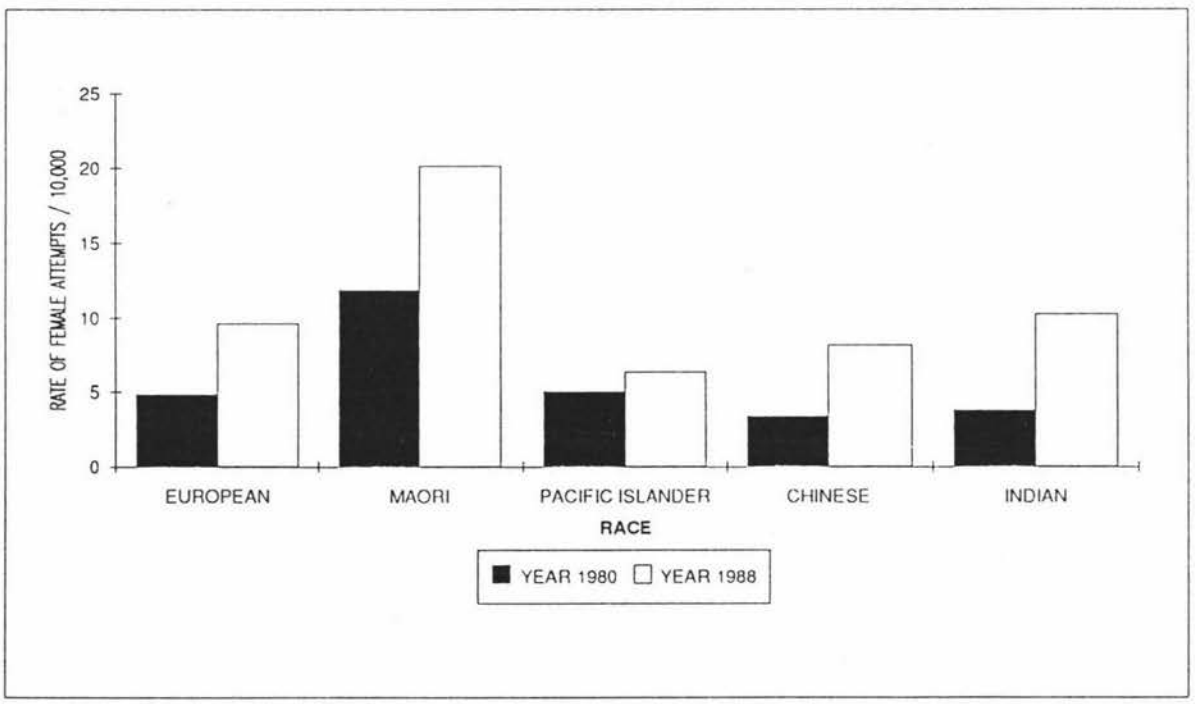


Figure 5.6 Rate of Female Attempts per 10,000 by Race in Years 1980 and 1988.

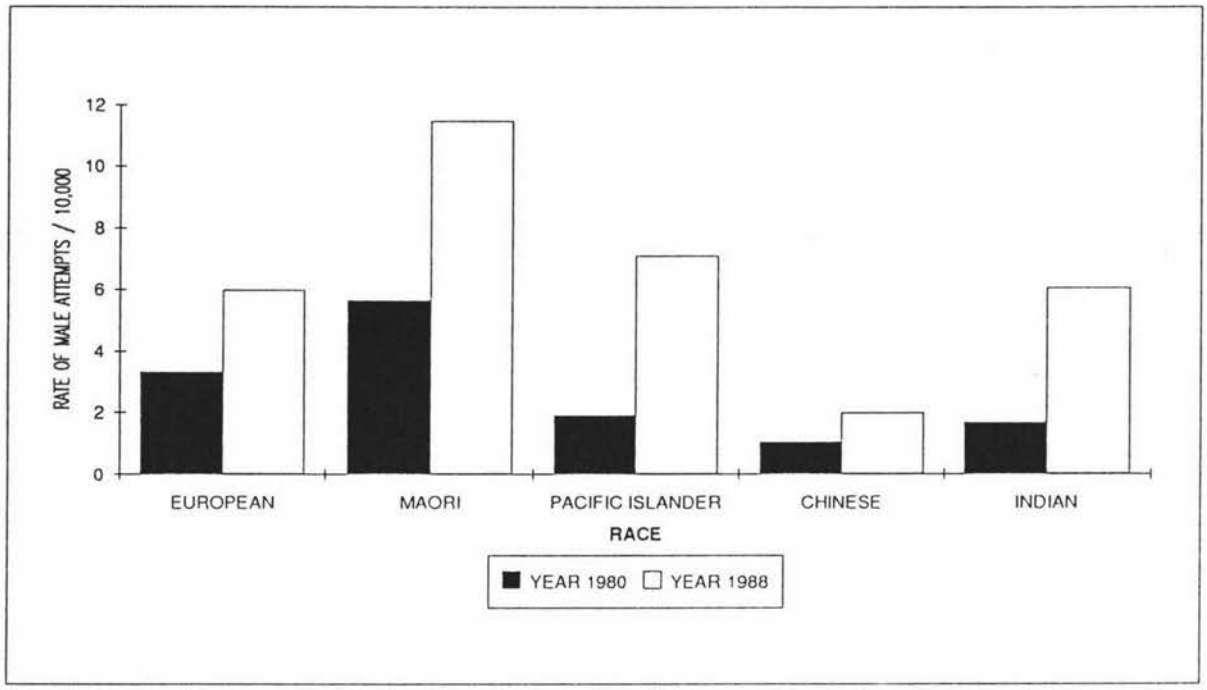


Figure 5.7 Rate of Male Attempts per 10,000 by Race in Years 1980 and 1988.

5.4 Marital Status

An increase in the frequency of attempts occurred from 1980 to 1988 in every category of marital status (see Table 5.4) but only a small increase was recorded for the groups Married, Separated and Widowed. The attempts in the category designated Single increased over the years. In 1980, 982 people who attempted suicide replied that they were single, which is 48.4% of the total number of suicide attempts, but in 1988 there were a higher percentage, 58.2%. Perhaps, this indicates that the number of young people attempting suicide increased which would be a concern.

Table 5.4 Frequency, Rate and Percentage Increased of Suicide Attempts by Marital Status in Years 1980 and 1988.

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
MARITAL STATUS	1980	1988	1980	1988	1980	1988
MARRIED	421	433	228	239	649	672
DE FACTO	15	56	7	41	22	97
DIVORCED	43	89	18	42	61	131
SEPARATED	134	137	59	85	193	222
WIDOWED	64	68	9	21	73	89
SINGLE	571	1093	411	704	982	1797
SINGLE (10+ YEARS)[e]	568	1089	411	701	979	1790
UNKNOWN	28	35	20	47	48	82

	FEMALE RATE[a]			MALE RATE[a]		
MARITAL STATUS	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[b]
MARRIED	6.29	6.37	1.3	3.41	3.53	3.5
DE FACTO	3.41	9.74	185.6*	1.59	7.12	347.8*
DIVORCED	15.08	20.45	35.6	8.67	13.68	57.8
SEPARATED	37.36	33.70	-9.8	21.04	26.01	23.6
WIDOWED	5.14	5.19	1.0	3.08	6.83	121.8
SINGLE	8.45	16.13	90.9	5.35	9.16	71.2
SINGLE (10+ YEARS)[e]	13.82	25.21	82.4	8.35	13.71	64.2

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
MARITAL STATUS	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[d]
MARRIED	4.85	4.95	2.1*	184.2	180.8	-1.8
DE FACTO	2.50	8.43	237.1*	214.7	136.7	-36.3
DIVORCED	12.38	17.65	42.6	173.8	149.5	-14.0
SEPARATED	30.20	30.28	0.3*	177.6	129.6	-27.0
WIDOWED	4.75	5.50	15.8	166.5	76.0	-54.4
SINGLE	6.80	12.42	82.6	158.1	176.1	11.4
SINGLE (10+ YEARS)[e]	10.84	18.98	75.1	165.6	183.8	11.0

NOTE:

a The Number of Attempts per 10,000 people.

b Calculated from the Number of Attempts over the years.

c The Proportion of Female Rate of Suicide Attempts Relative to Male.

d Calculated from c over the years.

e Calculated without the cases of ages under 10.

* These cells are referred to in the text.

Every category of marital status showed an increase in the number of attempts over the years for both sexes but some increases were small. For example, separated and widowed females only increased by 3 and 4 attempts respectively. In the Married group, both sexes showed a stable number of attempts and for the Separated and Widowed categories, males showed more rapid increases than females. As for the combined group, the greatest increase in suicide attempts occurred in the category Single for both sexes.

Rates for unknown marital status were not included in Table 5.4 and the discussion of this section as they would be misleading, the frequency of attempts not matching well the census frequency totals.

The total rate of attempts increased for all categories of marital status from 1980 to 1988 with de Facto increasing the most by 237.1%. Separated and Married only showed a small percentage increase with 0.3% and 2.1% respectively.

In 1980, all the categories of marital status for females had higher suicide attempt rates than males, whereas in 1988 there was an exceptional group for males who were widowed. For females, only the Separated group showed a decrease in rate of attempts from 1980 to 1988, whereas for males, every category increased in rate. Those in de facto relationship had the highest percentage change in rate (237.1%) over the years and had the highest rate of attempts for each sex, with females increasing by 185.6% and males by 347.8%.

For the years 1980 to 1988, Table 5.4 shows that, apart from Single, males have a higher increase in the rate of suicide attempts than the rate for females in all categories. This, perhaps, was signalled in an earlier

chapter when a high number of young females suicide attempts were observed.

Table 5.4 also showed an increase in the rate of suicide attempts in all categories. There was a very stable rate over the years in both Married and Separated but a big increase in de Facto.

Similar to the approach in Chapters 2 and 3, figures for the group Single (10+ Years) were calculated. Each year showed an increasing value for the attempt rates for both sexes and the combined group as well as the ratio of the female to the male rate of attempts. When the rates were compared across years, Single (10+ Years) had a broader range over the years compared to the group Single.

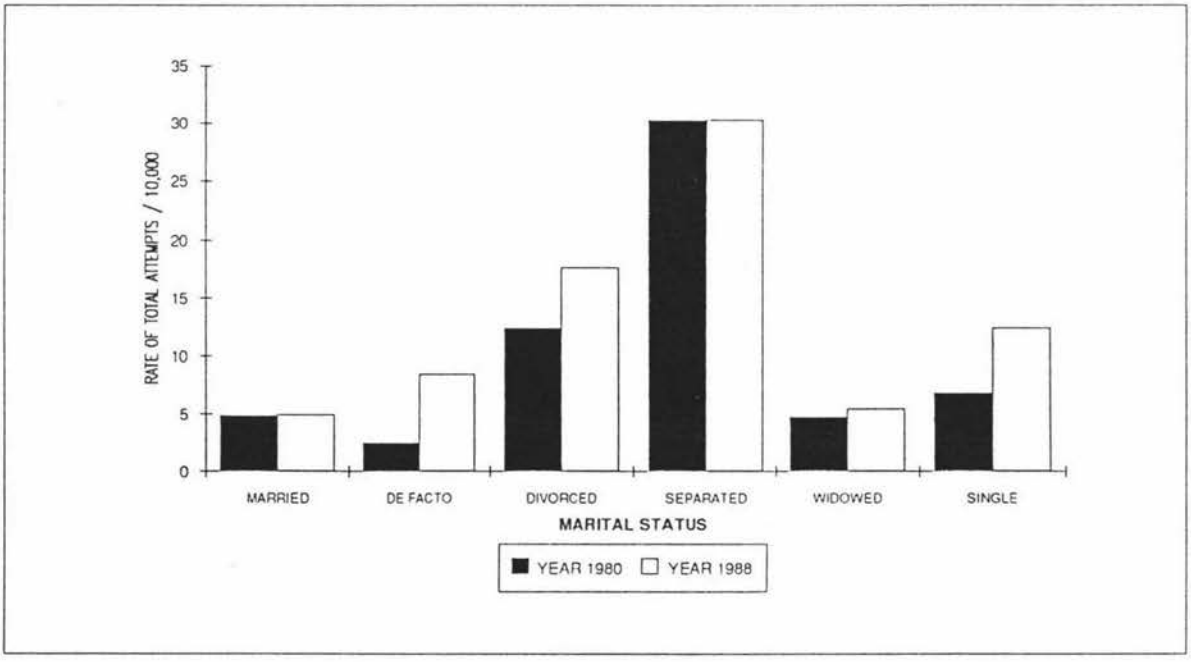


Figure 5.8 Rate of Attempts per 10,000 by Marital Status in Years 1980 and 1988.

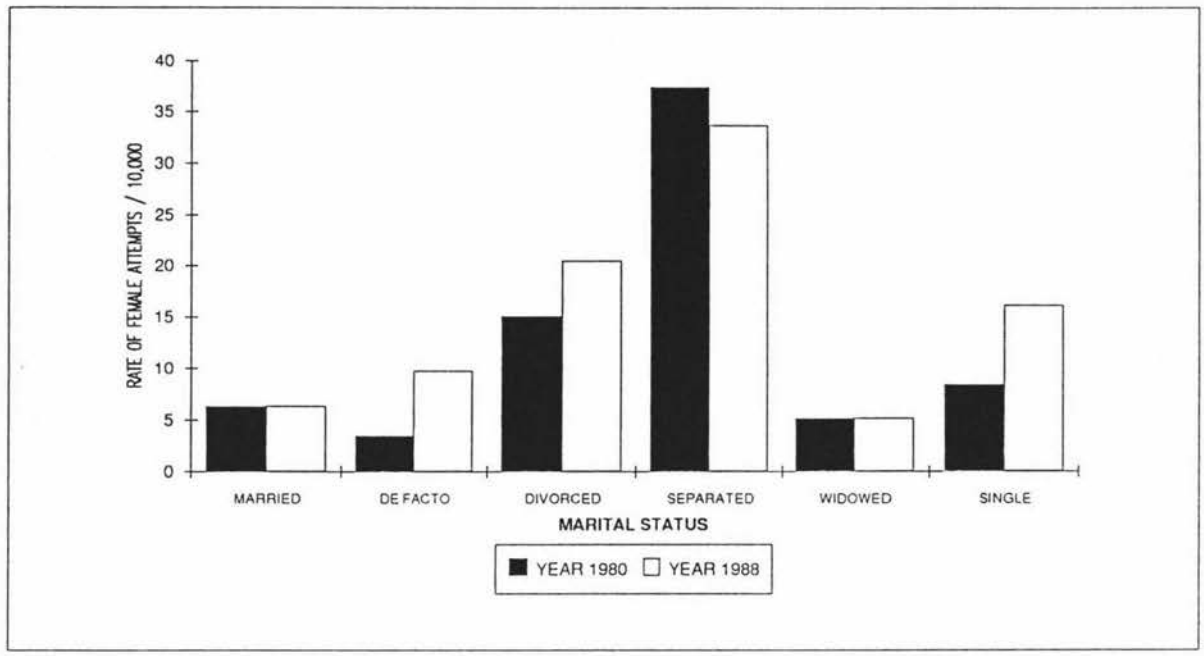


Figure 5.9 Rate of Female Attempts per 10,000 by Marital Status in Years 1980 and 1988.

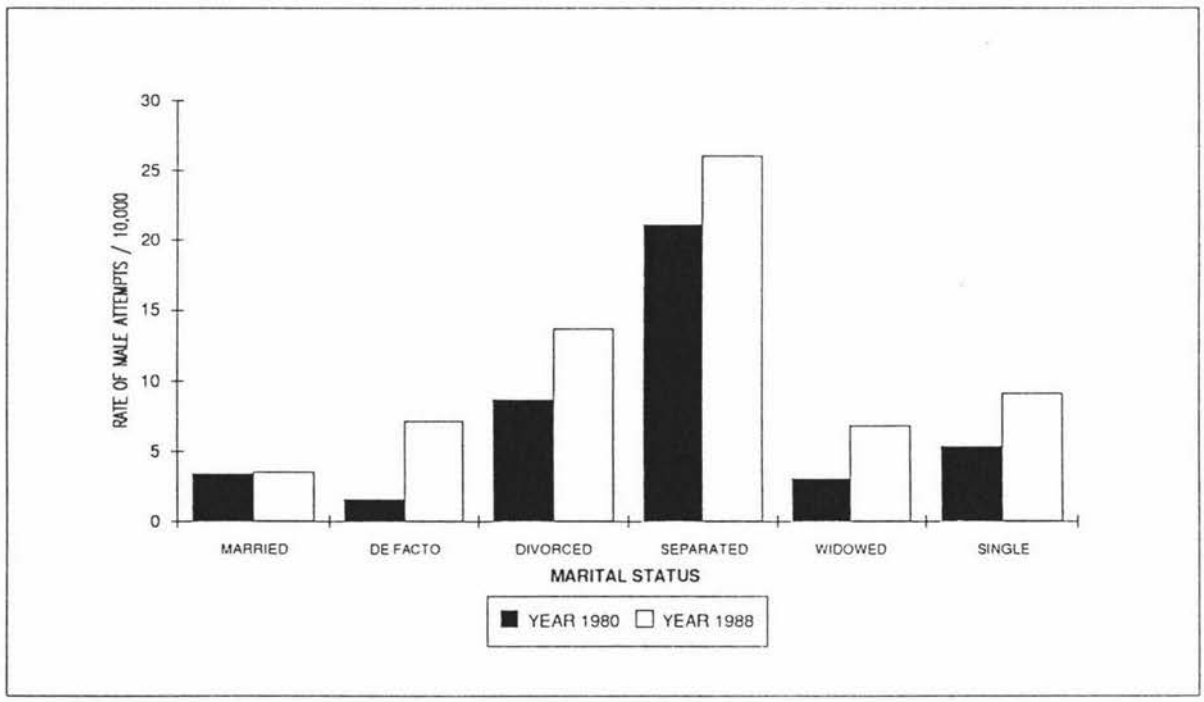


Figure 5.10 Rate of Male Attempts per 10,000 by Marital Status in Years 1980 and 1988.

5.5 Ages

Figure 5.11 clearly shows that both years have a high frequency of suicide attempts by young people. It is obvious that 1988 had a greater number of suicide attempts than 1980 in most ages between 13-68, but not much difference for other ages. Similar to 1988, ages in 1980 showed a characteristic of a downward trend after age 21 and possible plateaux between ages 48-54 and ages 55-60.

Age-groups

There was an increasing number of suicide attempts over the years except for the group of 50-54 years. A few groups, however, showed decreases such as ages 10-14, ages 50-54 and ages 75-79 for males and, for females, ages 5-9 and ages 50-54.

Among all the 19 age-groups, ages 50-54 is the only group which showed a decreasing percentage change in total attempts rate over the years. This was clearly shown by the only negative value of change in percentage for rate of attempts from 1980 to 1988 in Table 5.5. Figure 5.12 also gave an indication of this as this was the only group that have a lower bar than 1980. Ages 15-17 and ages 65-69 are the only groups which increased in percentage by over 100%.

For the female rate over the years, it appears that apart from the ages of 5-9, 50-54 and 85-100, other age-groups had an increase in suicide attempts rate (See Table 5.5 and Figure 5.13). Ages 10-19 and 65-69 had a large increasing percentage in the rate of attempts over the years. For

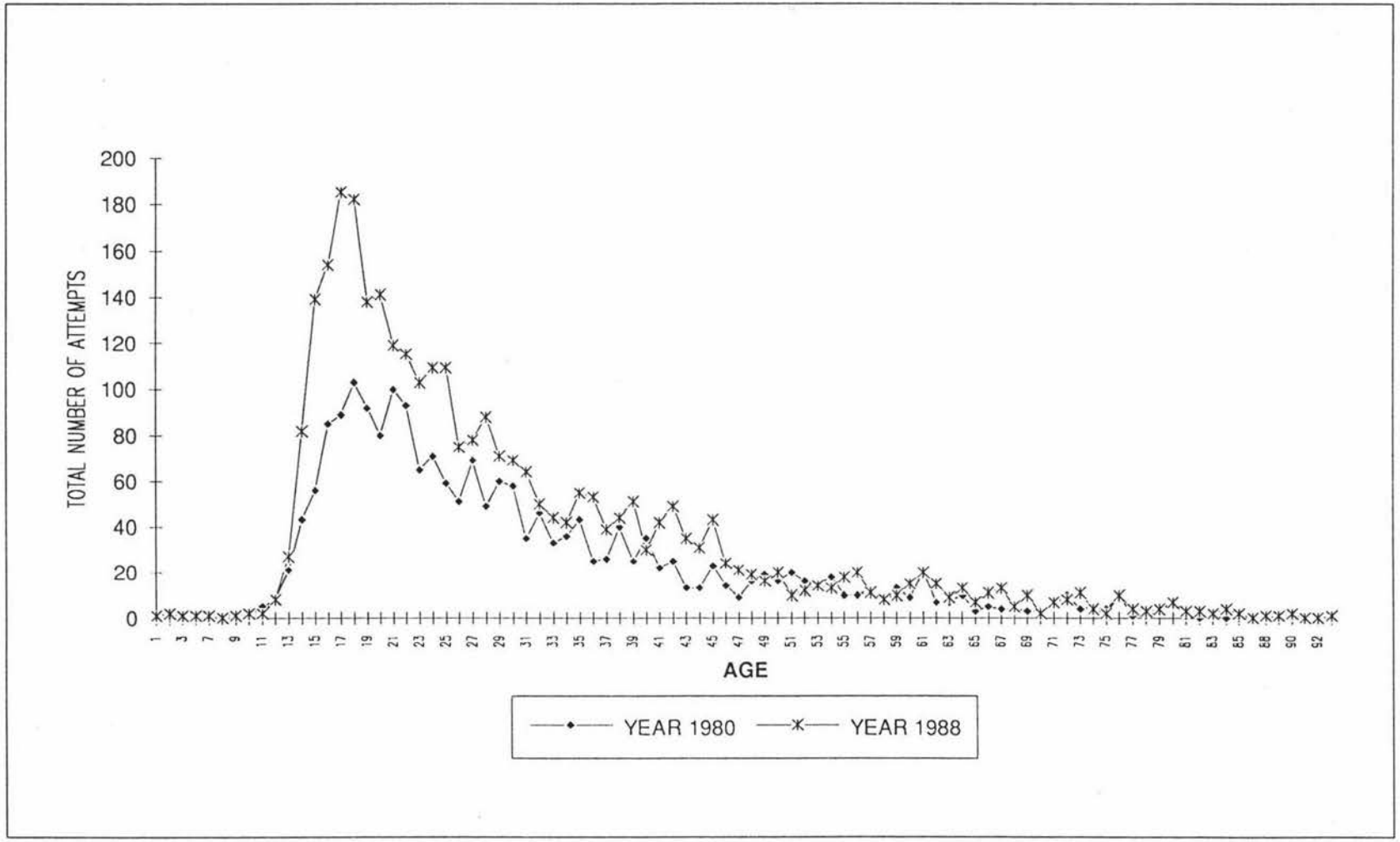


Figure 5.11 Total Number of Attempts by Age in Years 1980 and 1988.

Table 5.5 Frequency, Rate and Percentage Increased of Suicide Attempts by Age-group in Years 1980 and 1988.

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
AGE-GROUP	1980	1988	1980	1988	1980	1988
0 -- 4	0	2	0	2	0	4
5 -- 9	3	2	0	1	3	3
10 -- 14	55	108	23	13	78	121
15 -- 17	161	319	69	159	230	478
18 -- 19	117	205	78	115	195	320
20 -- 24	239	339	170	248	409	587
25 -- 29	177	263	111	158	288	421
30 -- 34	132	162	76	107	208	269
35 -- 39	107	141	52	101	159	242
40 -- 44	77	110	31	77	108	187
45 -- 49	48	64	33	59	81	123
50 -- 54	56	44	28	25	84	69
55 -- 59	35	39	17	28	52	67
60 -- 64	26	44	27	28	53	72
65 -- 69	13	27	6	19	19	46
70 -- 74	15	18	13	14	28	32
75 -- 79	7	12	12	11	19	23
80 -- 84	6	10	3	9	9	19
85 -- 100	2	2	3	5	5	7

	FEMALE RATE[a]			MALE RATE[a]		
AGE-GROUP	1980	1988	CHANGE (%)[b]	1980	1988	CHANGE (%)[b]
0 -- 4	0.00	0.16	-	0.00	0.16	-
5 -- 9	0.21	0.16	-24.0	0.00	0.08	-
10 -- 14	3.68	7.55	105.3	1.48	0.87	-40.8
15 -- 17	18.18	35.35	94.4	7.43	16.93	128.0
18 -- 19	19.10	36.01	88.6	12.20	19.49	59.7
20 -- 24	18.08	24.24	34.1	12.37	17.34	40.1
25 -- 29	14.76	19.60	32.8	9.37	11.89	26.9
30 -- 34	11.11	13.05	17.4	6.40	8.78	37.2
35 -- 39	11.20	11.73	4.7	5.42	8.43	55.4
40 -- 44	9.17	11.54	25.7	3.65	8.02	120.0
45 -- 49	6.64	7.74	16.5	4.49	7.07	60.9
50 -- 54	7.46	6.18	-17.3	3.56	3.41	-3.7
55 -- 59	4.78	5.33	11.6	2.32	3.68	58.6
60 -- 64	3.90	6.20	58.9	4.52	4.13	-8.7
65 -- 69	2.16	4.35	101.3	1.16	3.63	213.7
70 -- 74	3.10	3.36	8.4	3.38	3.33	-1.4
75 -- 79	2.06	3.00	45.5	5.11	4.00	-21.8
80 -- 84	2.85	4.03	41.6	2.68	6.40	139.2
85 -- 100	1.30	1.08	-16.6	5.17	6.88	33.1

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
AGE-GROUP	1980	1988	CHANGE (%)[b]	1980	1988	CHANGE (%)[d]
0 -- 4	0.00	0.16	-	-	105.1	-
5 -- 9	0.10	0.12	14.0	-	208.8	-
10 -- 14	2.55	4.15	62.3	249.3	865.0	247.0
15 -- 17	12.68	25.96	104.8	244.8	208.8	-14.7
18 -- 19	15.58	27.60	77.2	156.5	184.8	18.1
20 -- 24	15.17	20.75	36.8	146.1	139.8	-4.3
25 -- 29	12.08	15.76	30.5	157.6	164.9	4.6
30 -- 34	8.76	10.93	24.9	173.7	148.7	-14.4
35 -- 39	8.31	10.08	21.4	206.7	139.2	-32.7
40 -- 44	6.39	9.77	52.9	251.6	143.8	-42.9
45 -- 49	5.50	7.40	34.7	151.1	109.5	-27.5
50 -- 54	5.45	4.77	-12.4	210.8	181.1	-14.1
55 -- 59	3.55	4.49	26.5	205.6	144.6	-29.7
60 -- 64	4.19	5.19	23.7	86.3	150.1	74.0
65 -- 69	1.70	4.02	137.0	186.8	119.8	-35.8
70 -- 74	3.22	3.35	3.9	91.8	100.9	9.9
75 -- 79	3.31	3.41	3.0	40.4	75.1	86.0
80 -- 84	2.79	4.89	75.4	106.4	63.0	-40.8
85 -- 100	2.35	2.72	15.4	29.1	15.7	-37.3

NOTE:

a The Number of Attempts per 10,000 people.

b Calculated from the Number of Attempts over the years.

c The Proportion of Female Rate of Suicide Attempts Relative to Male.

d Calculated from c over the years.

- = Not Applicable.

males, there were a few age-groups which had a decreasing percentage in rates of attempts, those being ages 10-14, ages 50-54, ages 60-64 and ages 70-79.

Most of the age-groups had a smaller percentage of females rate relative to males in 1988 compared to 1980. This is presented in Table 5.5 for those groups who had negative values in the change of percentage for proportions of females rate relative to males. Ages 10-14 showed an outstanding increasing percentage compared to other ages.

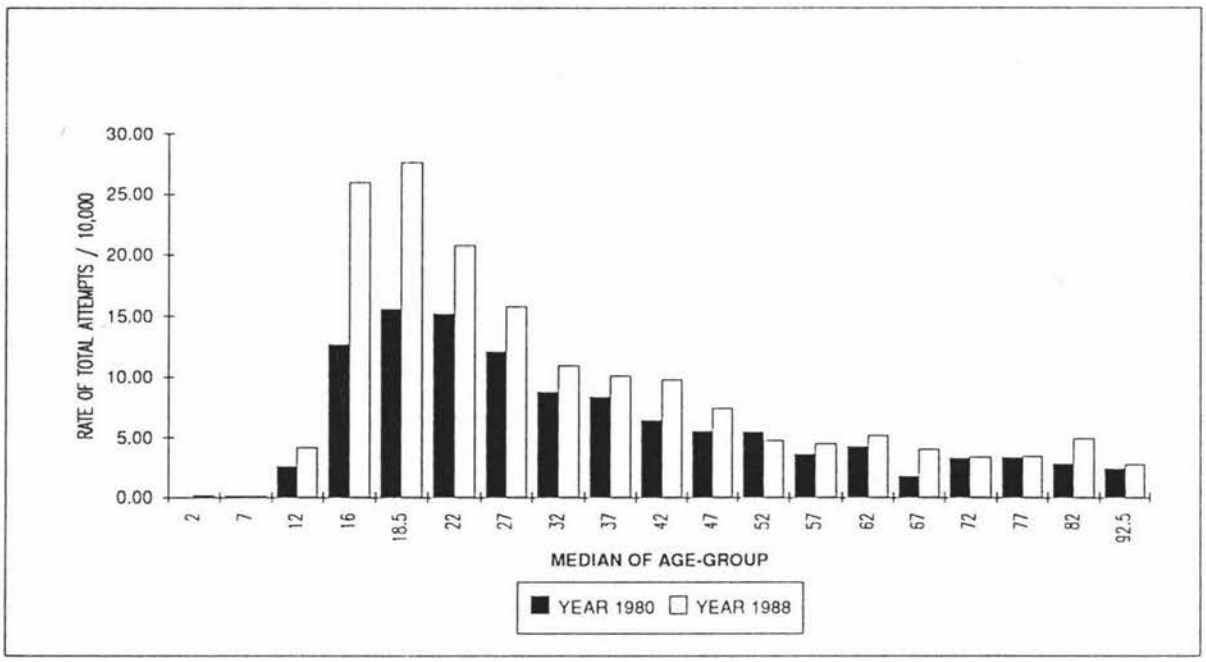


Figure 5.12 Rate of Attempts per 10,000 by Median of Age-group in Years 1980 and 1988.

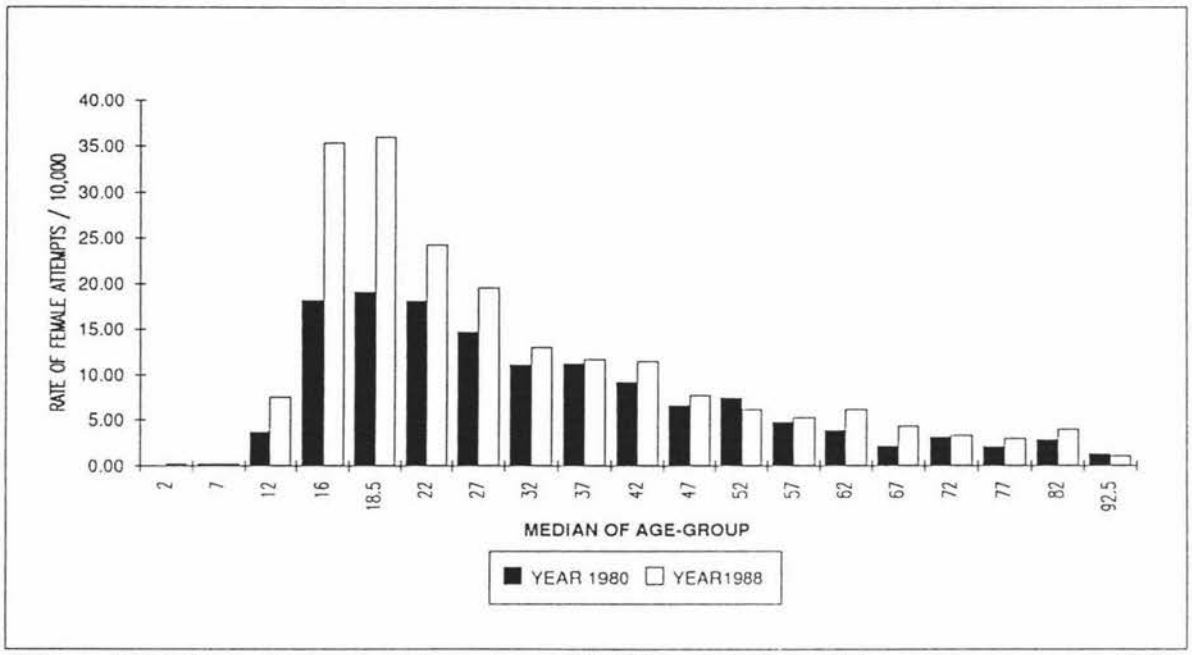


Figure 5.13 Rate of Female Attempts per 10,000 by Median of Age-group in Years 1980 and 1988.

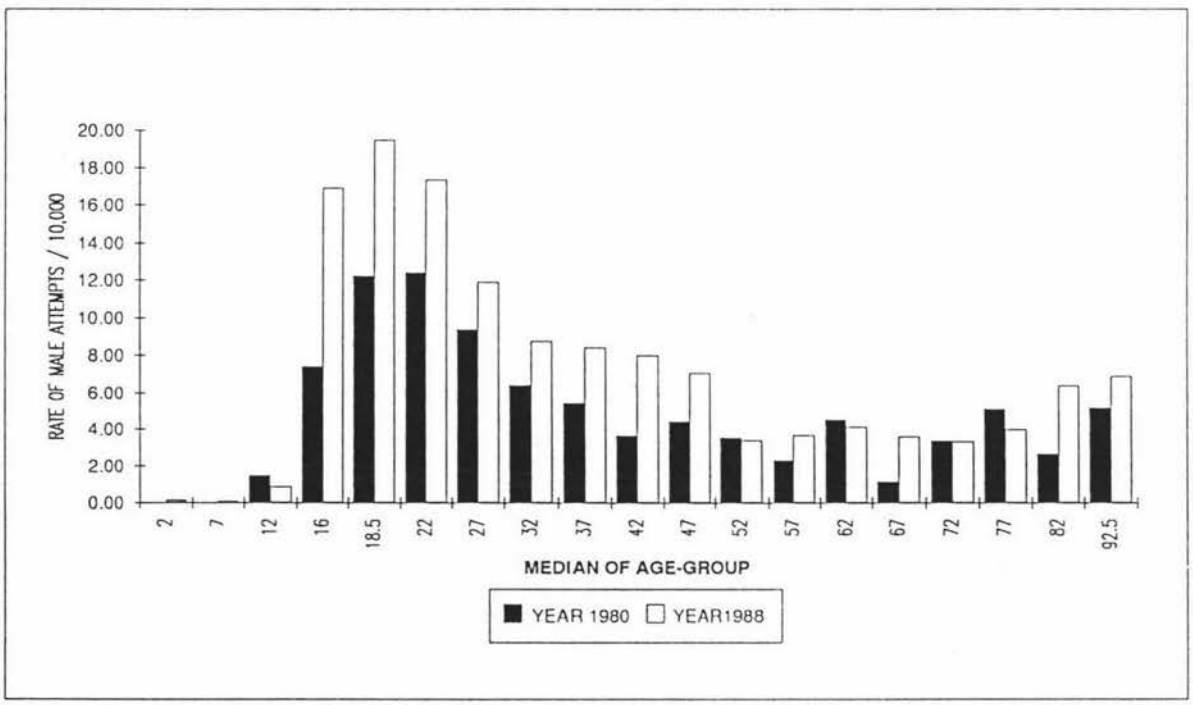


Figure 5.14 Rate of Male Attempts per 10,000 by Median of Age-group in Years 1980 and 1988.

Ages 14-26

Both years, 1980 and 1988, showed a higher number of suicide attempts between ages 14-26, and the biggest differences across the two time periods was in this age range. The attempts in 1988 show a high number of attempts at ages 17 and 18, whereas for 1980, the attempts occurred most frequently at ages 18 and 21. The skewness of the suicide attempts in terms of ages for both years is shown in Figure 5.11. The skewness of the distributions is also reflected in the boxplots (Figure 5.15) and the descriptive statistics in that, for each year, the mode was less than the median which, in turn, was less than the mean.

	1980	1988
Mode	17.00	18.00
Median	25.00	26.00
Mean	29.64	30.76
Lower Quartile	18.00	20.00
Upper Quartile	37.00	38.00
Interquartile Range	19.00	18.00
Standard Deviation	14.97	15.07

The boxplots in Figure 5.15 shows that the medians (shown by '+' for both years) is to the left of the box indicating a positive skewness for both years, and 1980 has a more positive skewed boxplot than 1988. The boxplot for 1980 shows more possible outliers ('*') than 1988, but it does not have any probable outlier ('O') while 1988 has one. The descriptive statistics also indicate the possibility of a more serious problem of youth suicide attempts in 1988 with a large number of young people attempting suicide.

Table 5.6 shows that all the ages 14 through 26 have an increase in the number of suicide attempts from 1980 to 1988. Males aged 24 went against this trend showing a decrease of one in the number of attempts. Similarly, the females of age 22 only increased by one attempt from 1980 to 1988.

The total rate of suicide attempts shows an increasing number from 1980 to 1988 for all the ages between 14-26 especially for ages 15 and 17 which had increased over 100% of the percentage change in rate from 1980 to 1988. Age 18 also has a high increasing of rate of attempts by 91.6%. Ages 21 and 22 showed a low increasing value of less than 20% compared to other ages. All the differences of change in percentage in rate over the years are reflected in the differences of heights of bars in Figure 5.16.

When the populations of sexes are taken into account separately, the pattern does not change much for the frequency of attempts as there is not much difference in the populations between sexes for the ages 14 through 26. For males, apart from ages 14 and 24, all increased in rate from 1980 to 1988 (Figure 5.18 shows this clearly). Females of age 22, which only had a small number of attempts increased by one from 1980 to 1988 have a decreasing value after the numbers were converted into rates. Others, had a rising figure in rate of attempts which is clearly shown in Figure 5.17. Females of ages 14, 15, 17, 18 and 24 had a high increase of percentage change in rate for 1980 to 1988, which can be seen clearly in Figure 5.17 where there are great differences in the heights of bars. Similarly, Figure 5.18 indicates the high proportion of rate increases for males of ages 15-17 and age 20.

Table 5.6 Frequency, Rate and Percentage Increased of Suicide Attempts by Age 14-26 in Years 1980 and 1988.

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
AGE	1980	1988	1980	1988	1980	1988
14	35	75	8	7	43	82
15	40	99	16	40	56	139
16	62	108	23	46	85	154
17	59	112	30	73	89	185
18	61	122	42	60	103	182
19	56	83	36	55	92	138
20	49	80	31	61	80	141
21	59	66	41	53	100	119
22	59	60	34	55	93	115
23	41	63	24	40	65	103
24	31	70	40	39	71	109
25	30	61	29	48	59	109
26	36	47	15	28	51	75

	FEMALE RATE[a]			MALE RATE[a]		
AGE	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[b]
14	11.91	24.44	105.2	2.62	2.20	-15.7
15	13.89	32.46	133.7	5.30	12.68	139.3
16	21.09	35.69	69.3	7.42	14.54	95.9
17	19.44	37.98	95.4	9.45	23.75	151.2
18	19.69	42.47	115.7	13.04	20.31	55.7
19	18.49	29.43	59.1	11.35	18.66	64.4
20	16.85	29.30	73.9	10.14	21.25	109.6
21	21.53	23.78	10.5	14.25	18.45	29.4
22	22.66	21.43	-5.4	12.54	19.22	53.3
23	16.42	22.21	35.3	9.32	13.96	49.9
24	12.54	24.62	96.4	15.87	13.75	-13.4
25	12.22	21.85	78.8	11.95	17.19	43.9
26	14.90	17.24	15.7	6.28	10.39	65.5

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
AGE	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[d]
14	7.17	13.13	83.1	155.5	1108.9	143.5
15	9.49	22.41	136.1	262.1	256.0	-2.3
16	14.08	24.89	76.8	284.0	245.4	-13.6
17	14.34	30.72	114.3	205.6	159.9	-22.2
18	16.30	31.23	91.6*	151.0	209.1	38.5
19	14.84	23.93	61.3	162.9	157.7	-3.2
20	13.41	25.18	87.7	166.2	137.9	-17.0
21	17.80	21.07	18.3	151.9	128.9	-14.6
22	17.50	20.32	16.1	180.8	111.5	-38.3
23	12.81	18.07	41.1	176.7	159.1	-9.7
24	14.22	19.19	35.0	79.0	179.1	126.7
25	12.08	19.52	61.5	102.3	127.1	24.2
26	10.61	13.84	30.4	237.3	166.0	-30.1

NOTE:

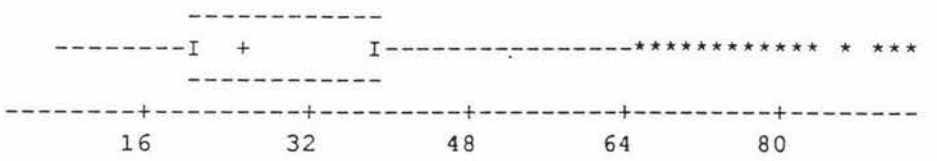
a The Number of Attempts per 10,000 people.

b Calculated from the Number of Attempts over the years.

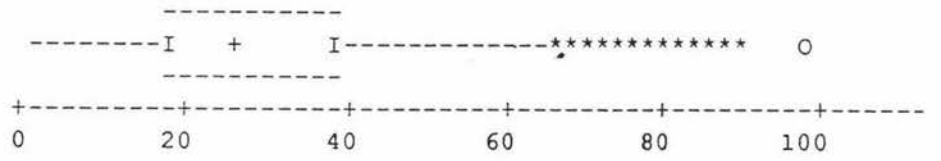
c The Proportion of Female Rate of Suicide Attempts Relative to Male.

d Calculated from c over the years.

* This cell is referred to in the text.



1980



1988

Figure 5.15 Boxplot of Age in Years 1980 and 1988.

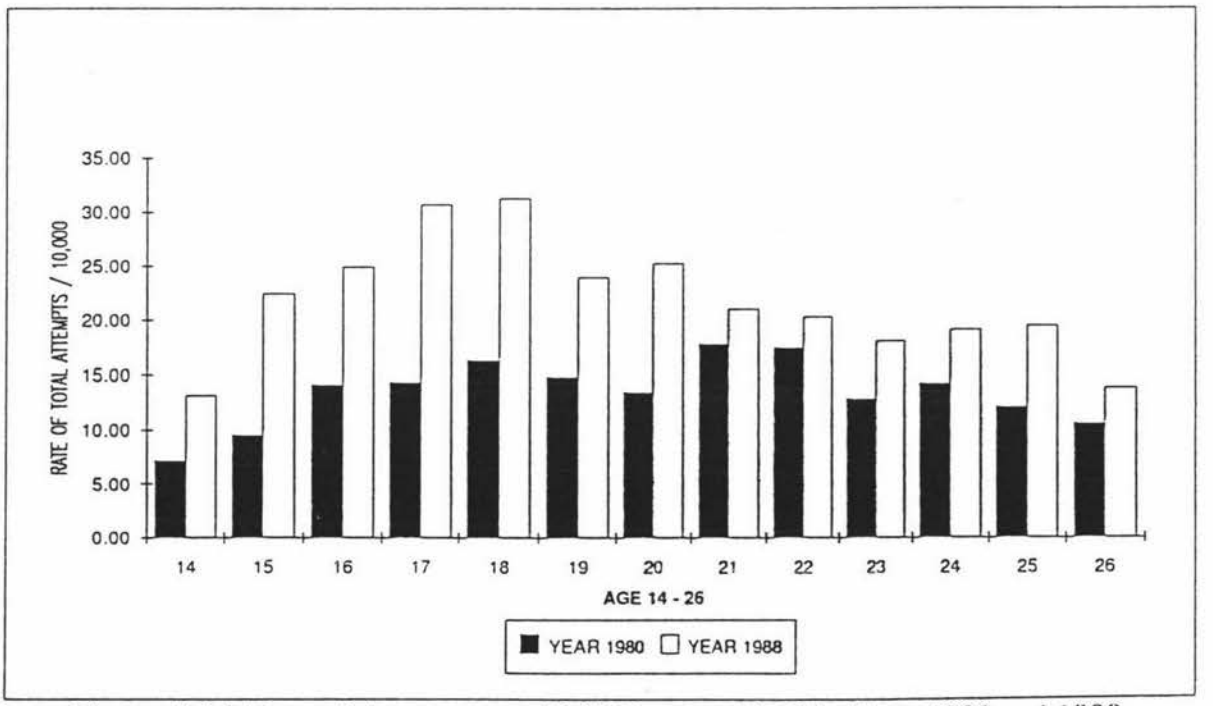


Figure 5.16 Rate of Attempts per 10,000 by Age 14-26 in Years 1980 and 1988.

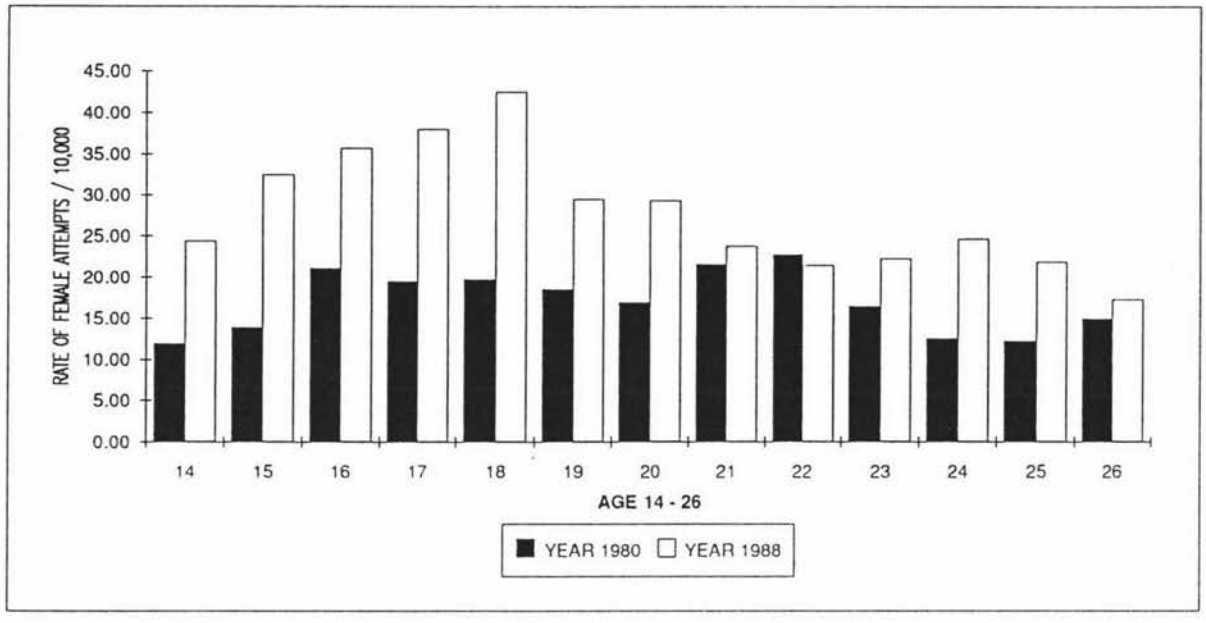


Figure 5.17 Rate of Female Attempts per 10,000 by Age 14-26 in Years 1980 and 1988.

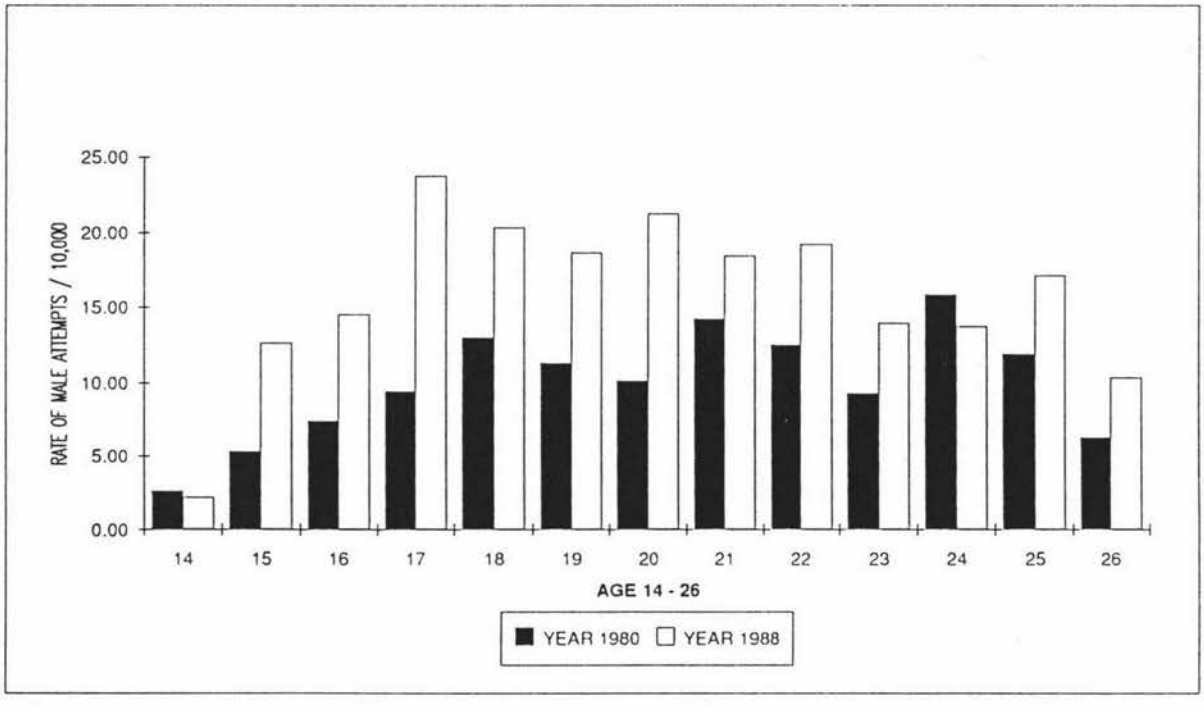


Figure 5.18 Rate of Male Attempts per 10,000 by Age 14-26 in Years 1980 and 1988.

5.6 Discharge Types

Both 1980 and 1988 have the highest number of suicide attempts in the DR (Discharge, Routine) category of Discharge Types, namely 85.3% in 1980 and 86.5% in 1988. There are some categories which had a stable frequency of attempts over the years. They are DD (Discharge, Death), SM (To Maternity Hospital, Same Board), SP (To Psychiatric Hospital, Same Board), SO (To Other Hospital, Same Board), PG (To General Hospital, Private), PP (To Psychiatric Hospital, Private) and PO (To Other Hospital, Private). Although most categories in 1988 had a greater frequency of suicide attempts than in 1980, when the percentages in each year were calculated, there was not much difference in profile between the two years (see Table 5.7).

Category OP (To Psychiatric Hospital, Other Board) is the only group which had a decrease in percentage change in the frequency of attempts from 1980 to 1988. OG (To General Hospital, Other Board) has the highest increase in the change of percentage for the number of attempts over the years, that is 237.5%, followed by DS (Self Discharge) with 104.2%. Categories like DD (Discharge, Death) and SP only increased by about 2%.

Both sexes in years 1980 and 1988 had the highest numbers belonging to the DR (Discharge, Routine) category of Discharge Types. In 1980, the only category of Discharge Types which had a higher number of male attempts was DD (Discharge, Death), whereas in 1988, there were many categories which had a higher number of males attempts. OG (To General Hospital, Other Board) had the highest percentage change in frequency for both females and males, with 300.0% by females and 175.0%

by males. There are three female groups of Discharge Types which had a decreasing figure for the change in percentage of attempts, whereas for males, OP (To Psychiatric Hospital, Other Board) was the only group which decreased in this way.

Table 5.7 Frequency and Percentage Increased of Suicide Attempts by Discharge Type in Years 1980 and 1988.

FEMALE FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) a
	#	%	#	%	
DR	1108	86.8	1682	88.0	51.8
DD	21	1.6	18	0.9	-14.3
DS	12	0.9	29	1.5	141.7
DI	26	2.0	35	1.8	34.6
PN	0	0	2	0.1	
SG	38	3.0	64	3.3	68.4
SM	0	0	1	0.1	-
SP	51	4.0	47	2.5	-7.8
SO	3	0.2	4	0.2	33.3
OG	4	0.3	16	0.8	300.0*
OP	8	0.6	7	0.4	-12.5
PG	1	0.1	0	0	-
PP	4	0.3	5	0.3	25.0
PO	0	0	1	0.1	-
TOTAL	1276	100	1911	100	

MALE FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) a
	#	%	#	%	
DR	621	82.6	991	84.1	59.6
DD	23	3.1	27	2.3	17.4
DS	12	1.6	20	1.7	66.7
DI	15	2.0	33	2.8	120.0
PN	0	0	3	0.3	
SG	29	3.9	44	3.7	51.7
SM	0	0	0	0	-
SP	38	5.1	44	3.7	15.8
SO	2	0.3	3	0.3	50.0
OG	4	0.5	11	0.9	175.0*
OP	8	1.1	1	0.1	-87.5
PG	0	0	1	0.1	-
PP	0	0	0	0	0
PO	0	0	1	0.1	-
TOTAL	752	100	1179	100	

TOTAL FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) a
	#	%	#	%	
DR	1729	85.3*	2673	86.5*	54.6
DD	44	2.2	45	1.5	2.3*
DS	24	1.2	49	1.6	104.2*
DI	41	2.0	68	2.2	65.9
PN	0	0	5	0.2	
SG	67	3.3	108	3.5	61.2
SM	0	0	1	0.0	-
SP	89	4.4	91	2.9	2.2*
SO	5	0.2	7	0.2	40.0
OG	8	0.4	27	0.9	237.5*
OP	16	0.8	8	0.3	-50.0
PG	1	0.0	1	0.0	-
PP	4	0.2	5	0.2	25.0
PO	0	0	2	0.1	-
TOTAL	2028	100	3090	100	

Note:
Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
- = Not Applicable.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.

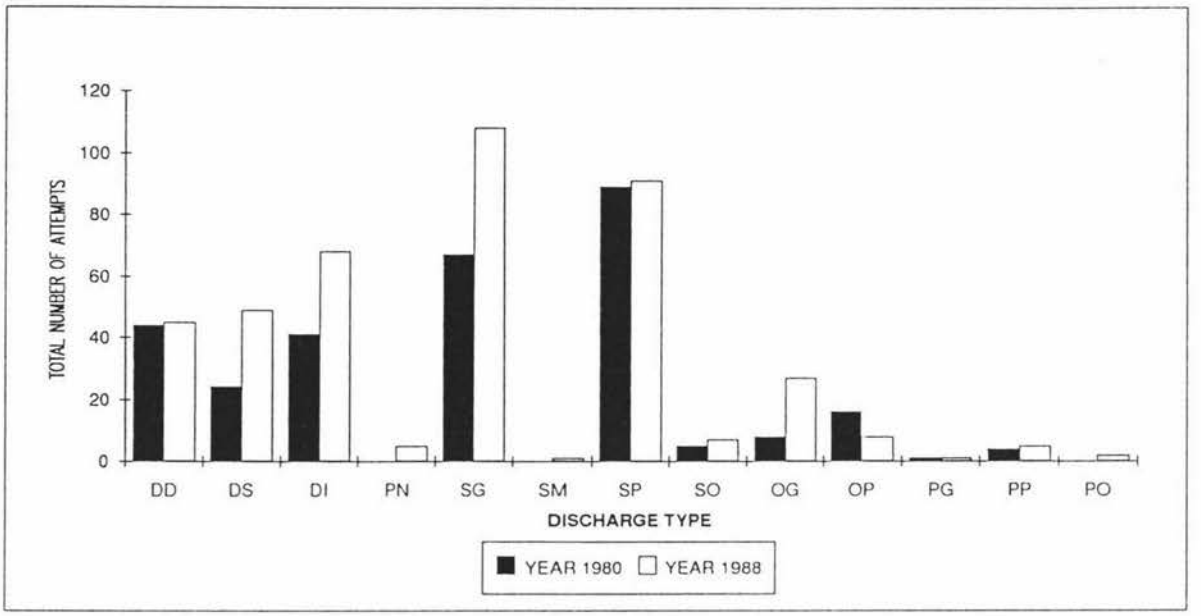


Figure 5.19 Total Number of Attempts by Discharge Type (without Routine Discharge category) in Years 1980 and 1988.

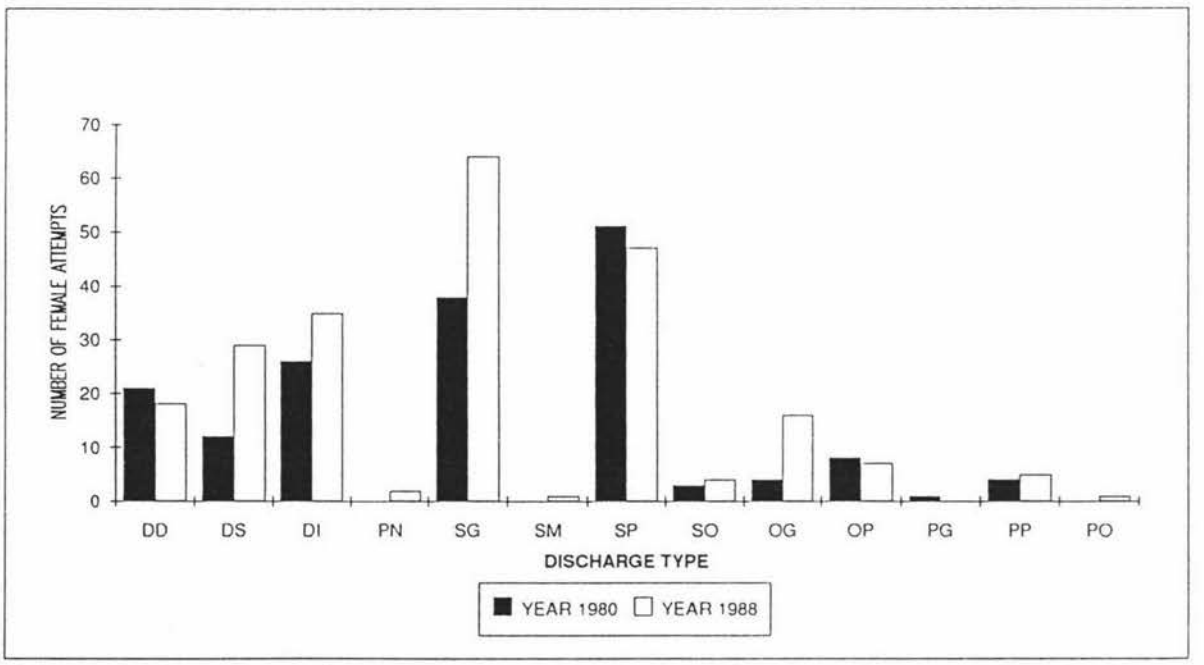


Figure 5.20 Number of Female Attempts by Discharge Type (without Routine Discharge category) in Years 1980 and 1988.

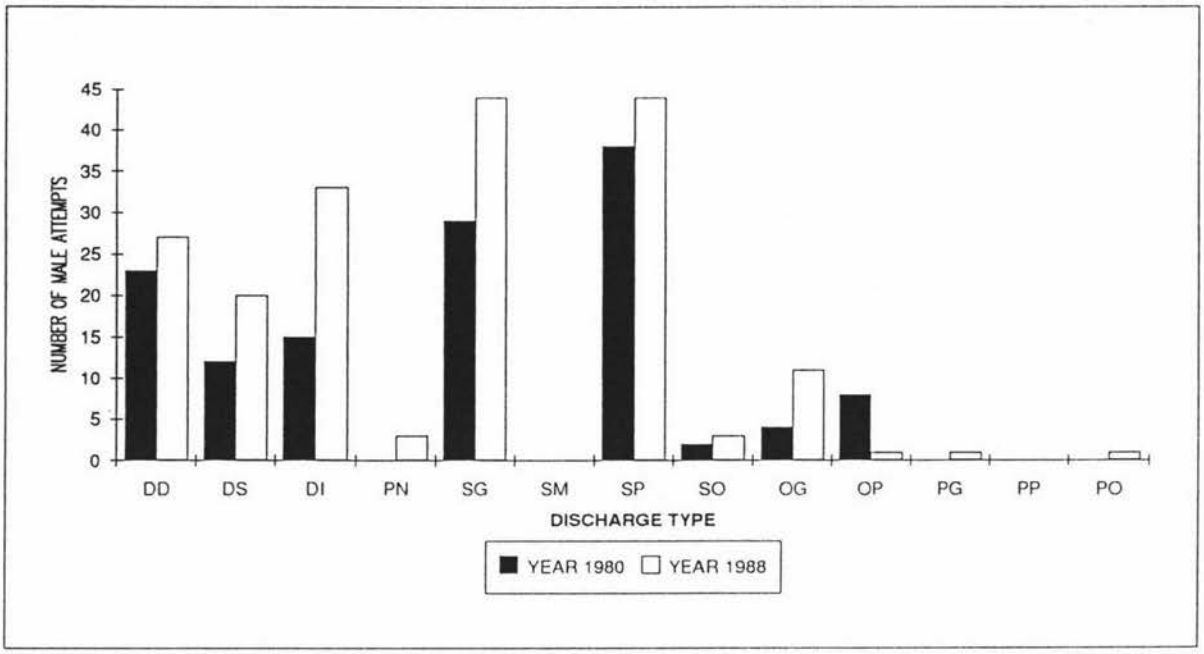


Figure 5.21 Number of Male Attempts by Discharge Type (without Routine Discharge category) in Years 1980 and 1988.

Grouping of Discharge Types

When the Discharge Types were grouped into four categories, both years had the highest number of attempts in the group Regular. In 1988, it had 90.3% falling in this group which was a slightly higher percentage than for 1980 with 88.5%. The number of successful suicide attempts, resulting in death (DD), increased by one from 1980 to 1988, but in terms of percentage it reduced from 2.2% in 1980 to 1.5% in 1988 (See Table 5.8). Patients discharged to consult a psychiatrist also showed a decrease in percentage from 5.4% in 1980 to 3.4% in 1988. Psychiatric is the only group which had decreased in percentage change in frequency over the years.

Males in 1980, as in 1988, overshadowed females only in the number of attempts in the Death category. Both years showed a higher relative success rate for males than females. For both sexes a reduced number were referred to psychiatric hospitals in 1988 compared with 1980.

Table 5.8 Frequency and Percentage Increased of Suicide Attempts by Grouped Discharge Type in Years 1980 and 1988.

FEMALE FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) [a]
	#	%	#	%	
DEATH	21	1.6	18	0.9	-14.3
REGULAR	1146	89.8	1746	91.4	52.4
PSYCHIATRIC	63	4.9	59	3.1	-6.3
OTHERS	46	3.6	88	4.6	91.3
TOTAL	1276	100	1911	100	

MALE FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) [a]
	#	%	#	%	
DEATH	23	3.1	27	2.3	27.8
REGULAR	648	86.2	1044	88.5	-62.9
PSYCHIATRIC	46	6.1	45	3.8	-22.0
OTHERS	35	4.7	63	5.3	-60.2
TOTAL	752	100	1179	100	

TOTAL FREQUENCY

DISCHARGE TYPE	1980		1988		CHANGE (%) [a]
	#	%	#	%	
DEATH	44	2.2*	45	1.5*	17.4
REGULAR	1794	88.5*	2790	90.3*	61.1
PSYCHIATRIC	109	5.4*	104	3.4*	-2.2
OTHERS	81	4.0	151	4.9	80.0
TOTAL	2028	100	3090	100	

Note:
Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.

5.7 Ecode (Methods)

As we have seen earlier in this study, there was a higher proportion of attempts resulting in death in 1980 than in 1988, so that it would be interesting to see how the methods used related to the frequency of attempts. The highest number of suicide attempts were in the groups using solid or liquid poison substances. In 1980, 88.0% of the attempts used solid or liquid poison substances and in 1988, 87.7%, almost the same proportion of attempts between both years. Once again, methods like 'Drowning' and 'Gases in Domestic Use' only explained a small percentage of the method used.

For both years, about 90% of the suicide attempts used a passive method (gases, poison or drugs) and less than 10% methods which could be described as active (hanging, cutting, drowning, shooting and jumping from high places). In both years, the overall percentages of those using active methods were very similar with 7.9% in 1980 and 7.5% in 1988.

In Table 5.9, methods such as 'Jumping from High Place' and 'Firearms and Explosives' showed a decrease in both number and percentage of suicide attempts from 1980 to 1988, which is, perhaps, contradictory to expectation. 'Poisoning by Solid or Liquid Substances', showed a big increase in the number of suicide attempts perhaps suggesting that, over time, more people are using drugs.

There are some methods which showed a decrease in percentage change in frequency from 1980 to 1988. They are 'Gases in Domestic Use', 'Firearms and Explosives', 'Jumping from High Place' and 'Late Effects of Self-Inflicted Injury'. Other than these, the rest had an increased per-

centage change in frequency from 1980 to 1988 with 'Other Gases and Vapours' increasing most by 160.9%. Active and passive methods both had an increasing percentage change in frequency from 1980 to 1988 with 45.3% and 52.8% respectively.

Both years showed higher percentages of males than females using active methods. For 1980, there were 5.1% of females and 12.7% of males using active methods and in 1988 4.4% of females and 12.7% of males. This may explain the higher success rate, that is resulting in death, for males in both years. It is an interesting finding that males had the same percentage using active methods for both years.

Methods like 'Gases in Domestic Use', 'Jumping from High Place' and 'Late Effects of Self Inflicted-Injury' of females had a decrease in percentage change in frequency from 1980 to 1988 whereas, for males, only 'Firearms and Explosives' showed a decreasing value. For males only, there were a few methods which were used the same number of times over the years. They were 'Gases in Domestic Use', 'Drowning' and 'Jumping from High Place'. This was shown in Figure 5.24 with the groups that have equal bars in years 1980 and 1988.

Table 5.9 Frequency and Percentage Increased of Suicide Attempts by Ecode (Method) in Years 1980 and 1988.

FEMALE FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
E9500-9509	1168	91.5	1778	93.0	52.2
E9510-9519	5	0.4	2	0.1	-60.0
E9520-9529	5	0.4	15	0.8	200.0
E9530-9539	3	0.2	9	0.5	200.0
E9540-9549	2	0.2	5	0.3	150.0
E9550-9559	3	0.2	4	0.2	33.3
E9560-9569	47	3.7	58	3.0	23.4
E9570-9579	10	0.8	8	0.4	-20.0
E9580-9589	17	1.3	27	1.4	58.8
E9590-9599	16	1.3	5	0.3	-68.8
TOTAL	1276	100	1911	100	

MALE FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
E9500-9509	617	82.0	931	79.0	50.9
E9510-9519	3	0.4	3	0.3	0
E9520-9529	18	2.4	45	3.8	150.0
E9530-9539	9	1.2	20	1.7	122.2
E9540-9549	1	0.1	1	0.1	0
E9550-9559	22	2.9	10	0.8	-54.5
E9560-9569	52	6.9	107	9.1	105.8
E9570-9579	12	1.6	12	1.0	0
E9580-9589	12	1.6	36	3.1	200.0
E9590-9599	6	0.8	14	1.2	133.3
TOTAL	752	100	1179	100	

TOTAL FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
E9500-9509	1785	88.0*	2709	87.7*	51.8
E9510-9519	8	0.4	5	0.2	-37.5
E9520-9529	23	1.1	60	1.9	160.9*
E9530-9539	12	0.6	29	0.9	141.7
E9540-9549	3	0.1	6	0.2	100.0
E9550-9559	25	1.2	14	0.5	-44.0
E9560-9569	99	4.9	165	5.3	66.7
E9570-9579	22	1.1	20	0.6	-9.1
E9580-9589	29	1.4	63	2.0	117.2
E9590-9599	22	1.1	19	0.6	-13.6
TOTAL	2028	100	3090	100	

Note:
Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.

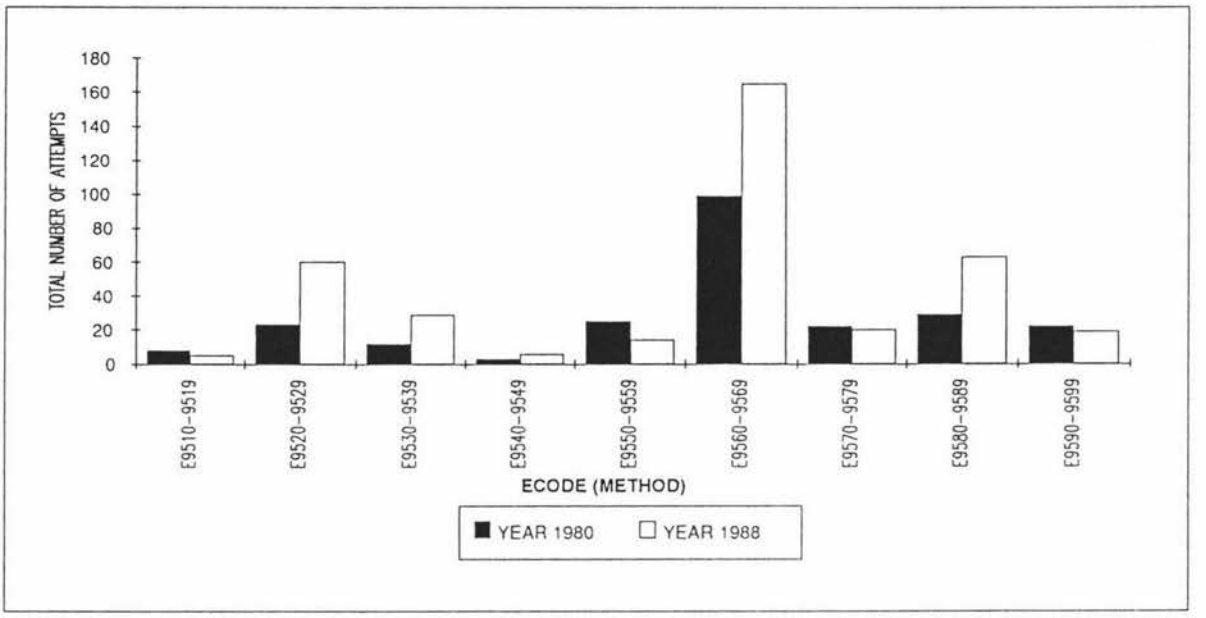


Figure 5.22 Total Number of Attempts by Ecode (Method) (without Poisoning by Solid or Liquid Substances category) in Years 1980 and 1988.

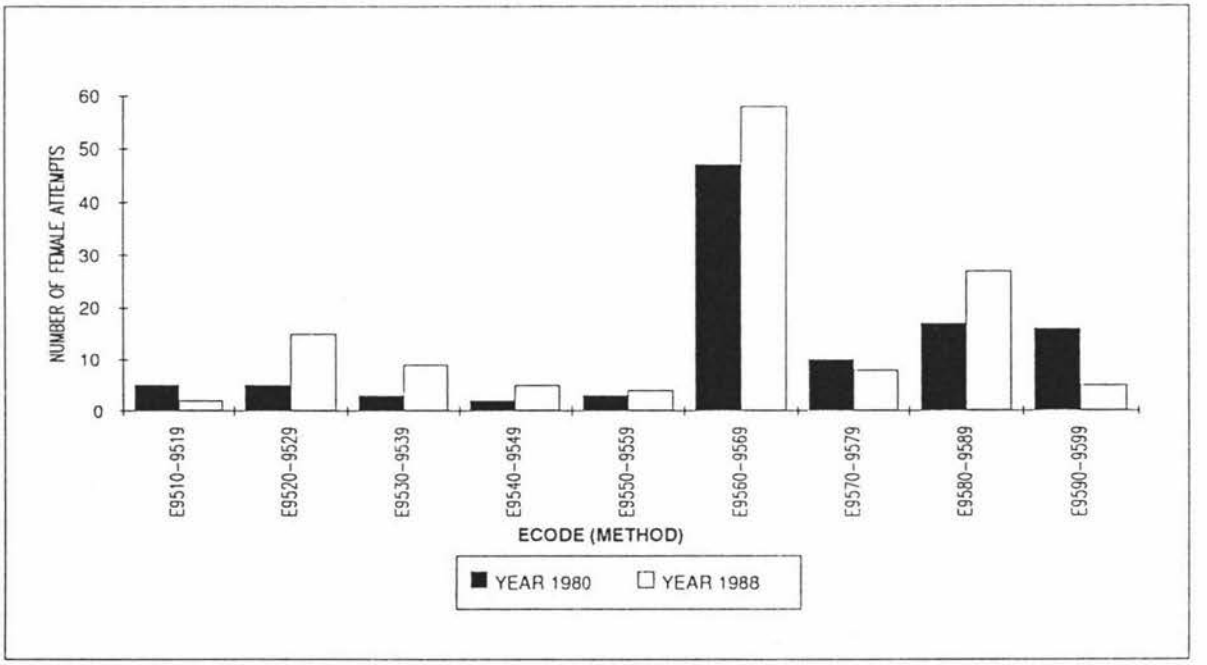


Figure 5.23 Number of Female Attempts by Ecode (Method) (without Poisoning by Solid or Liquid Substances category) in Years 1980 and 1988.

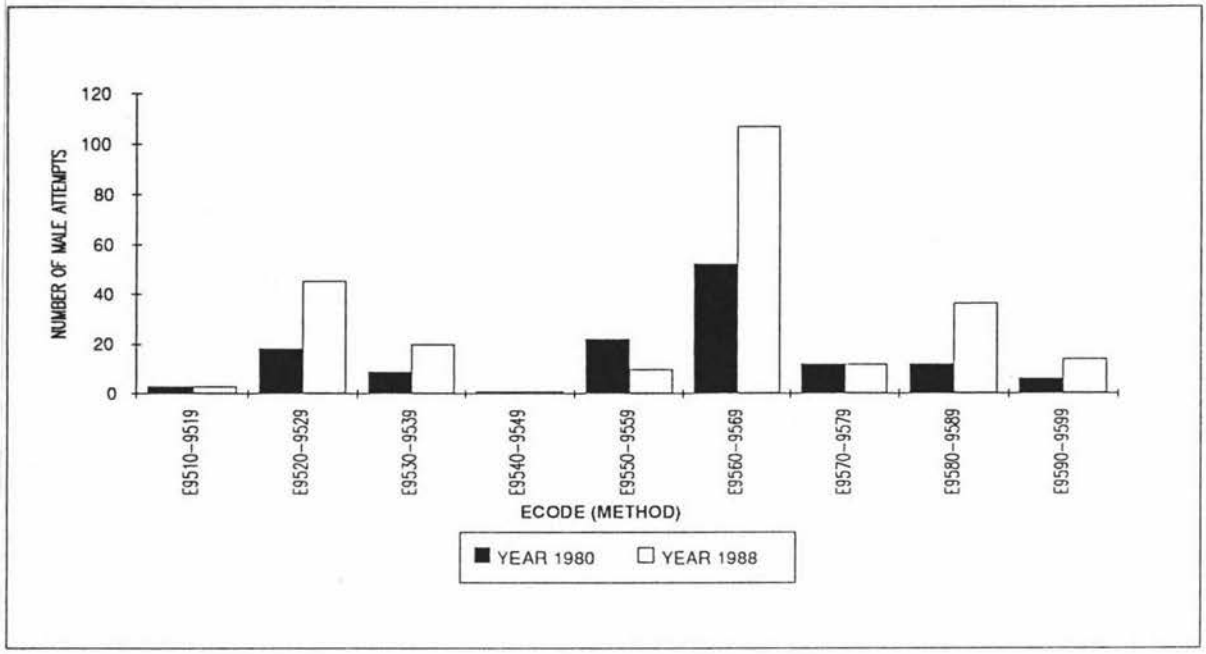


Figure 5.24 Number of Male Attempts by Ecode (Method) (without Poisoning by Solid or Liquid Substances category) in Years 1980 and 1988.

Poisoning by Solid or Liquid Substances

Once again, with the popularity of 'Poisoning by Solid or Liquid Substances' being evident in both years, it was decided to examine this method in a more detailed way. Table 5.10 shows a similarity for both years, with substances having coding number '9503' (Tranquillizers and Other Psychotropic Agents) giving the highest number of suicide attempts, 42.9% in 1980 and 39.2% in 1988. The next popular substances used was '9504' (Other Specified Drugs and Medicaments), with 28.3% in 1980 and 37.6% in 1988. Amongst all the solid and liquid poison substances, 'Arsenic and its Compound' (9508) was used least, with no attempts using this in 1980 and only one attempt using this substance in 1988. 'Other Specified Drugs and Medicaments' (9504) had the greatest

differences in proportions between the two years, with 28.3% in 1980 and 37.6% in 1988.

'Corrosive and Caustic Substances' (9507) had a very high increasing percentage change in frequency from 1980 to 1988. This was mainly due to the small number (one) of suicide attempts in 1980, causing a large increase in terms of percentages. 'Barbiturates' (9501) and 'Other Sedatives and Hypnotics' (9502) are the only substances which had a decreasing percentage change in frequency from 1980 to 1988.

'Agricultural and Horticultural Chemical and Pharmaceutical Preparations other than Plant Foods and Fertilizers' (9506) and 'Other and Unspecified Solid and Liquid Substances' (9509) for both years and 'Arsenic and Its Compound' (9508) for 1988 were responsible for a higher number of suicide attempts for males than females.

In terms of proportions for each year, 'Barbiturates' (9501), 'Other Sedatives and Hypnotics' (9502), 'Tranquillizers and Other Psychotropic Agents' (9503), 'Unspecified Drug of Medicament' (9505), 'Agricultural and Horticultural Chemical and Pharmaceutical Preparations other than Plant Foods and Fertilizers' (9506) and 'Other and Unspecified Solid and Liquid Substances' (9509) showed a slight decrease for both sexes.

On the female side, 'Barbiturates' (9501), 'Other Sedatives and Hypnotics' (9502) and 'Agricultural and Horticultural Chemical and Pharmaceutical Preparations Other than Plant Foods' (9506) had a decreasing percentage change in frequency from 1980 to 1988, whereas for males, the groups which showed decreasing values in percentage change in frequency over the years were 'Barbiturates' (9501) and 'Other Sedatives and Hypnotics' (9502).

Table 5.10 Frequency and Percentage Increased of Suicide Attempts by Poisoning by Solid or Liquid Substances in Years 1980 and 1988.

FEMALE FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
9500	140	12.0	259	14.6	85.0
9501	51	4.4	7	0.4	-86.3
9502	59	5.1	49	2.8	-16.9
9503	522	44.7	713	40.1	36.6
9504	332	28.4	669	37.6	101.5
9505	34	2.9	42	2.4	23.5
9506	8	0.7	6	0.3	-25.0
9507	1	0.0	9	0.5	800.0
9508	0	0	0	0	-
9509	21	1.8	24	1.3	14.3
TOTAL	1168	100	1778	100	

MALE FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
9500	84	13.6	124	13.3	47.6
9501	28	4.5	2	0.2	-92.9
9502	26	4.2	22	2.4	-15.4
9503	243	39.4	348	37.4	43.2
9504	174	28.2	350	37.6	101.1
9505	21	3.4	28	3.0	33.3
9506	17	2.8	19	2.0	11.8
9507	0	0	5	0.5	-
9508	0	0	1	0.1	-
9509	24	3.9	32	3.4	33.3
TOTAL	617	100	931	100	

TOTAL FREQUENCY

ECODE (METHOD)	1980		1988		CHANGE (%) [a]
	#	%	#	%	
9500	224	12.5	383	14.1	71.0
9501	79	4.4	9	0.3	-88.6
9502	85	4.8	71	2.6	-16.5
9503	765	42.9*	1061	39.2*	38.7
9504	506	28.3*	1019	37.6*	101.4
9505	55	3.1	70	2.6	27.3
9506	25	1.4	25	0.9	0
9507	1	0.1	14	0.5	1300.0
9508	0	0	1	0.0	-
9509	45	2.5	56	2.1	24.4
TOTAL	1785	100	2709	100	

Note:
Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
- = Not Applicable.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.

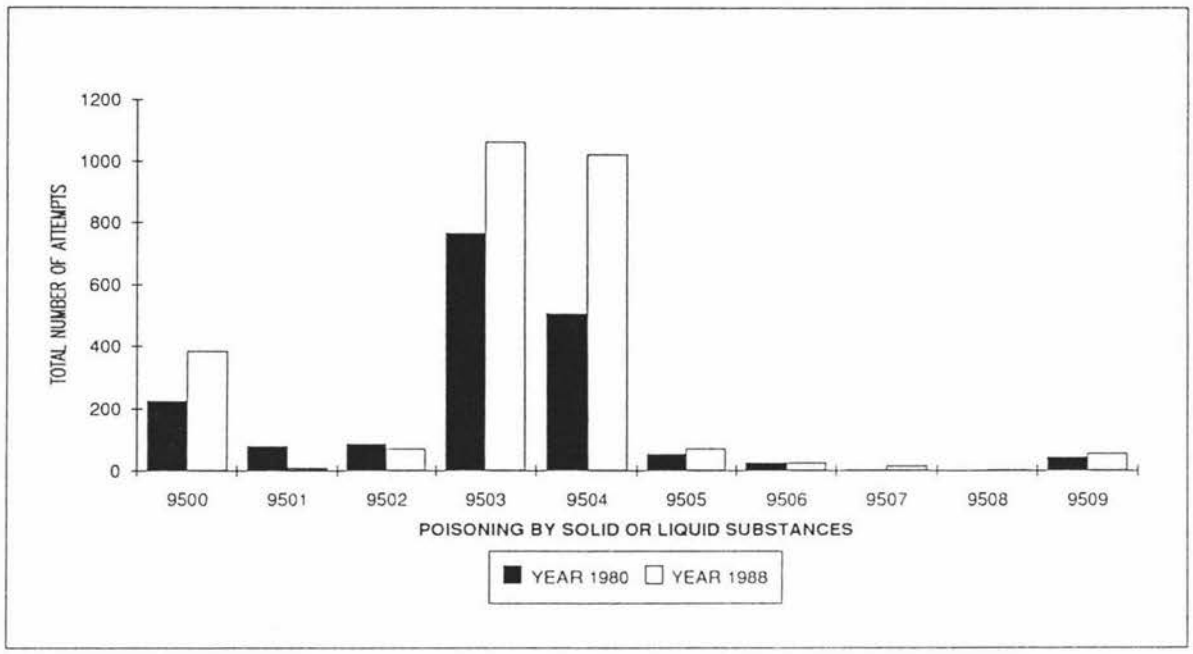


Figure 5.25 Total Number of Attempts by Poisoning by Solid or Liquid Substances in Years 1980 and 1988.

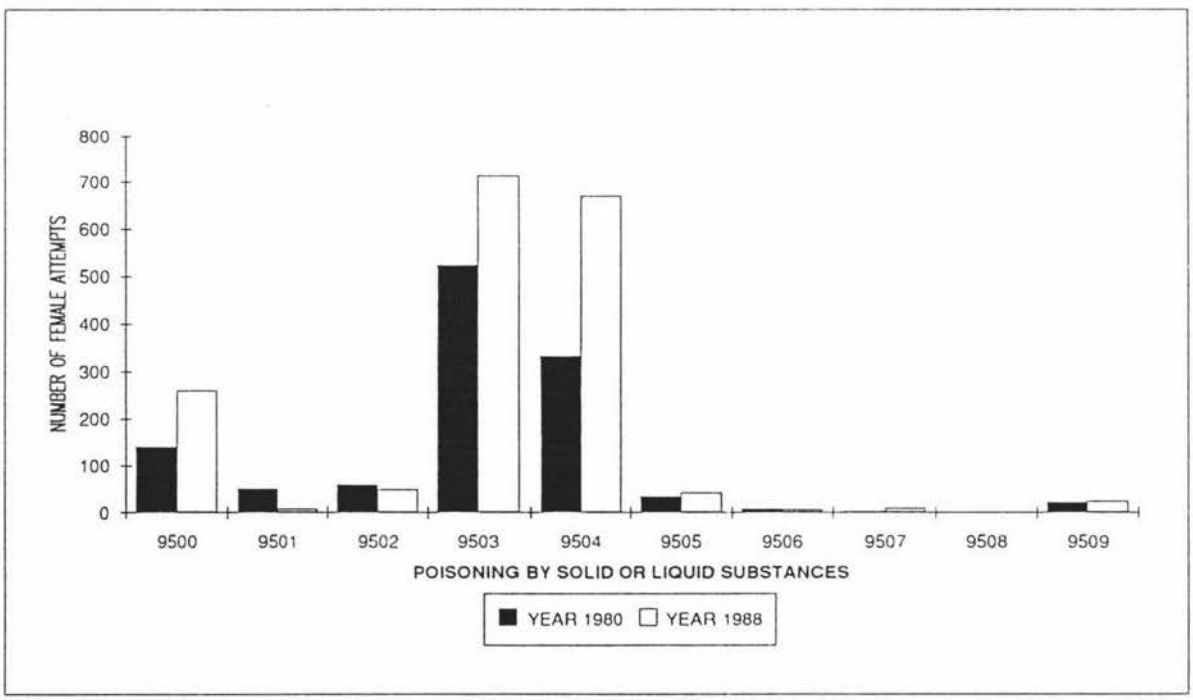


Figure 5.26 Number of Female Attempts by Poisoning by Solid or Liquid Substances in Years 1980 and 1988.

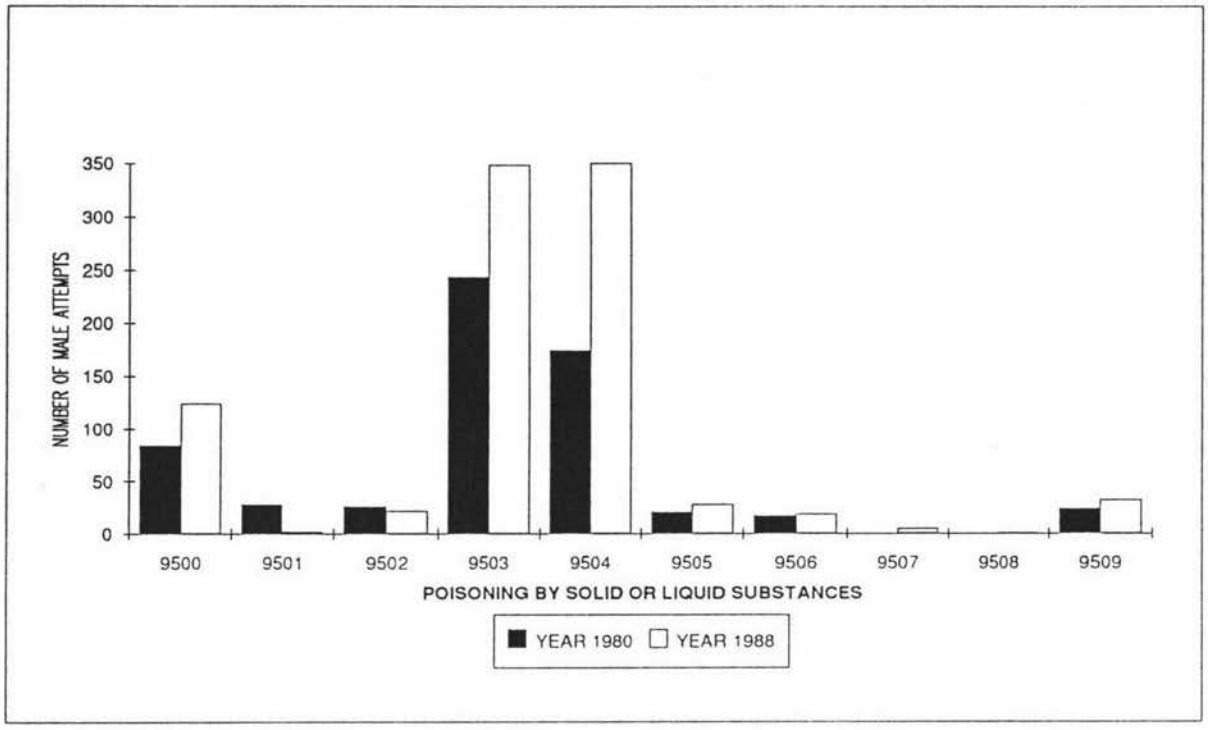


Figure 5.27 Number of Male Attempts by Poisoning by Solid or Liquid Substances in Years 1980 and 1988.

5.8 Statistical Areas

In this section, we will compare the suicide attempts in Statistical Areas in 1980 with those in 1988. As for the 1988 Morbidity Data, the Statistical Areas were obtained from the breakdown of the variable Domicile. The definition of Statistical Areas in the 1981 Census Data was the same as in the 1986 Census Data (refer to Appendix B). Table 5.11 shows clearly that for both years, the more populated areas like Auckland, Wellington and Canterbury exceed the other areas in the number of suicide attempts. From 1980 to 1988, few Statistical Areas decreased in the number of suicide attempts. Those areas which did show a reduc

Table 5.11 Frequency, Rate and Percentage Increased of Suicide Attempts by Statistical Area in Years 1980 and 1988.

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
STATISTICAL AREA	1980	1988	1980	1988	1980	1988
NORTHLAND	32	32	22	24	54	56
CENTRAL AUCKLAND	258	441	171	293	429	734
S.AUCKLAND-BAY OF PLENTY	195	308	126	170	321	478
EAST COAST	7	36	2	16	9	52
HAWKES BAY	32	95	18	42	50	137
TARANAKI	90	61	47	41	137	102
WELLINGTON	272	409	157	272	429	681
MARLBOROUGH	22	17	10	6	32	23
NELSON	107	41	63	34	170	75
WESTLAND	17	13	3	4	20	17
CANTERBURY	191	299	108	197	299	496
OTAGO	50	116	25	47	75	163
SOUTHLAND	3	43	0	33	3	76

	FEMALE RATE[a]			MALE RATE[a]		
STATISTICAL AREA	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[b]
NORTHLAND	5.83	5.30	-9.1	4.01	3.87	-1.8
CENTRAL AUCKLAND	6.15	9.84	60.1	4.22	6.79	60.8
S.AUCKLAND-BAY OF PLENTY	8.10	12.11	49.6	5.16	6.70	29.8
EAST COAST	2.89	14.92	416.9	0.82	6.72	718.9
HAWKES BAY	4.31	12.52	190.9	2.49	5.72	130.8
TARANAKI	17.08	11.15	-34.7	8.93	7.49	-16.0
WELLINGTON	9.30	13.67	47.1	5.43	9.30	71.7
MARLBOROUGH	17.67	9.36	-26.1	5.66	3.27	-42.1
NELSON	28.37	10.47	-63.1	15.85	8.72	-48.3
WESTLAND	15.78	12.00	-24.0	7.62	3.55	35.2
CANTERBURY	8.39	13.89	54.6	3.71	9.44	81.3
OTAGO	5.54	12.68	129.8	2.84	5.29	86.0
SOUTHLAND	0.57	8.39	1364.1	0.00	6.31	-

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
STATISTICAL AREA	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[d]
NORTHLAND	4.87	4.57	-6.2	138.0	136.9	-7.5
CENTRAL AUCKLAND	5.20	8.34	60.4	136.7	145.1	-0.4
S.AUCKLAND-BAY OF PLENTY	6.62	9.41	42.1	156.8	180.7	15.3
EAST COAST	1.86*	10.84*	484.3*	361.3	222.1	-36.9
HAWKES BAY	3.40	9.18	169.7*	173.6	218.8	26.0
TARANAKI	13.00	9.32	-28.3	191.5	148.9	-22.3
WELLINGTON	7.36	11.51	56.3	171.7	147.1	-14.3
MARLBOROUGH	9.13	6.30	-31.0	224.0	286.1	27.7
NELSON	22.64*	9.60*	-57.6	168.2	120.1	-28.6
WESTLAND	9.02	7.70	-14.6	600.3	337.6	-43.8
CANTERBURY	7.12	11.70	64.3	172.1	147.2	-14.7
OTAGO	4.21	9.03	114.7*	139.0	239.9	23.0
SOUTHLAND	0.28*	7.34*	2516.7*	-	133.0	-

NOTE:

a The Number of Attempts per 10,000 people.
b Calculated from the Number of Attempts over the years.
c The Proportion of Female Rate of Suicide Attempts Relative to Male.
d Calculated from c over the years.
- = Not Applicable.
* These cells are referred to in the text.

tion were Taranaki, Marlborough, Nelson and Westland. Areas like Northland, Marlborough and Westland only had small differences in total frequency of suicide attempts.

Females had a greater number of suicide attempts than males in all the thirteen Statistical Areas for both years, though there are some areas in which the differences were not great. For example, Northland, East Coast and Southland for females, and Northland, Nelson and Southland for males. There are also some areas with decreasing number of suicide attempts in each sex from 1980 and 1988. For example, Taranaki, Marlborough, Nelson, and Westland for females, and for males, they were Marlborough and Nelson.

The majority of the Statistical Areas showed an increase in suicide attempt rates. Areas such as Taranaki, Marlborough, Nelson and Westland had a decreasing rate of suicide attempts, especially Nelson which had a big drop from the rate of 22.64 per 10,000 head in 1980 to 9.6 per 10,000 head in 1988. On the other hand, East Coast and Southland had a high rise in the suicide attempt rate, for East Coast the increase being from 1.86 per 10,000 head (1980) to 10.84 per 10,000 head (1988) and Southland from 0.28 per 10,000 head (1980) to 7.34 per 10,000 head (1988).

Southland has an extremely high percentage increase in suicide rate from 1980 to 1988, being 2516.9%. Areas such as East Coast, Hawkes Bay and Otago also showed high increasing values with 484.3%, 169.7% and 114.7% respectively. There are a few areas which had a decrease in percentage change in suicide rate over time, namely Northland, Taranaki, Marlborough, Nelson and Westland.

As in 1988, all the thirteen Statistical Areas had higher female attempts rate than males in 1980. Both sexes in Northland, Taranaki, Marlborough and Nelson and females from Westland had a decreasing percentage change in rate from 1980 to 1988, whereas others showed an increasing figure.

Most areas had a decreasing figure in the proportion of female rate over male rate from 1980 to 1988. In other words, male suicide attempts increased relative to female in this period.

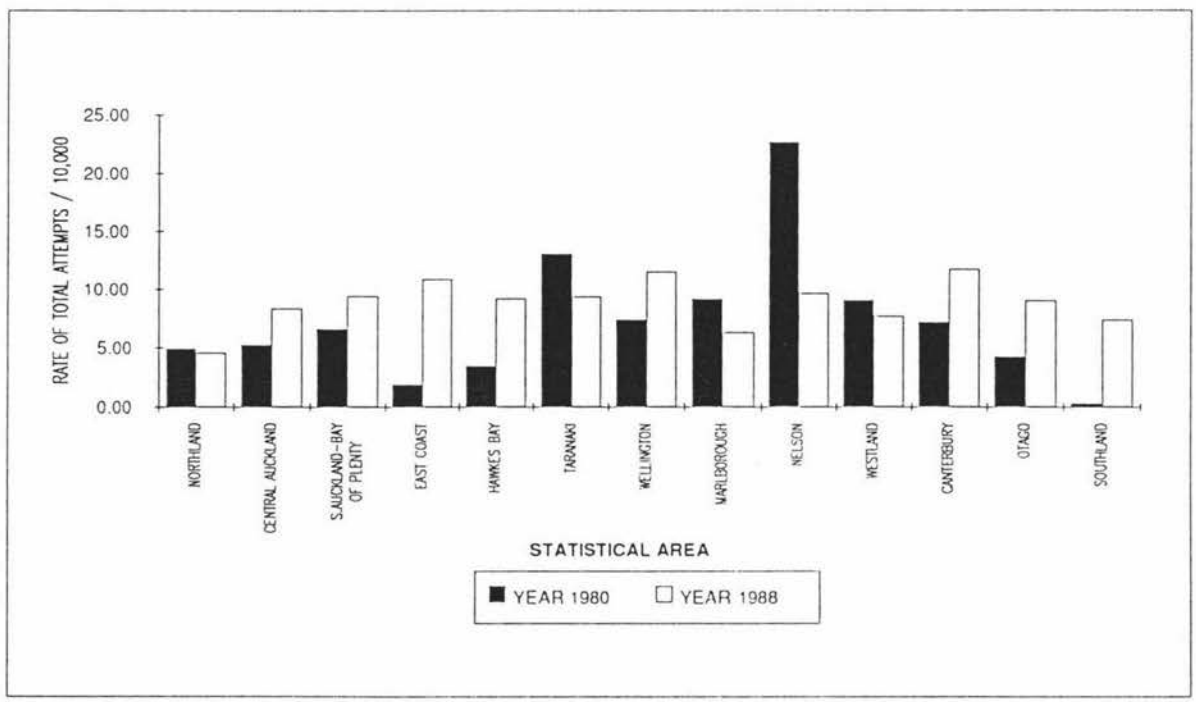


Figure 5.28 Rate of Attempts per 10,000 by Statistical Area in Years 1980 and 1988.

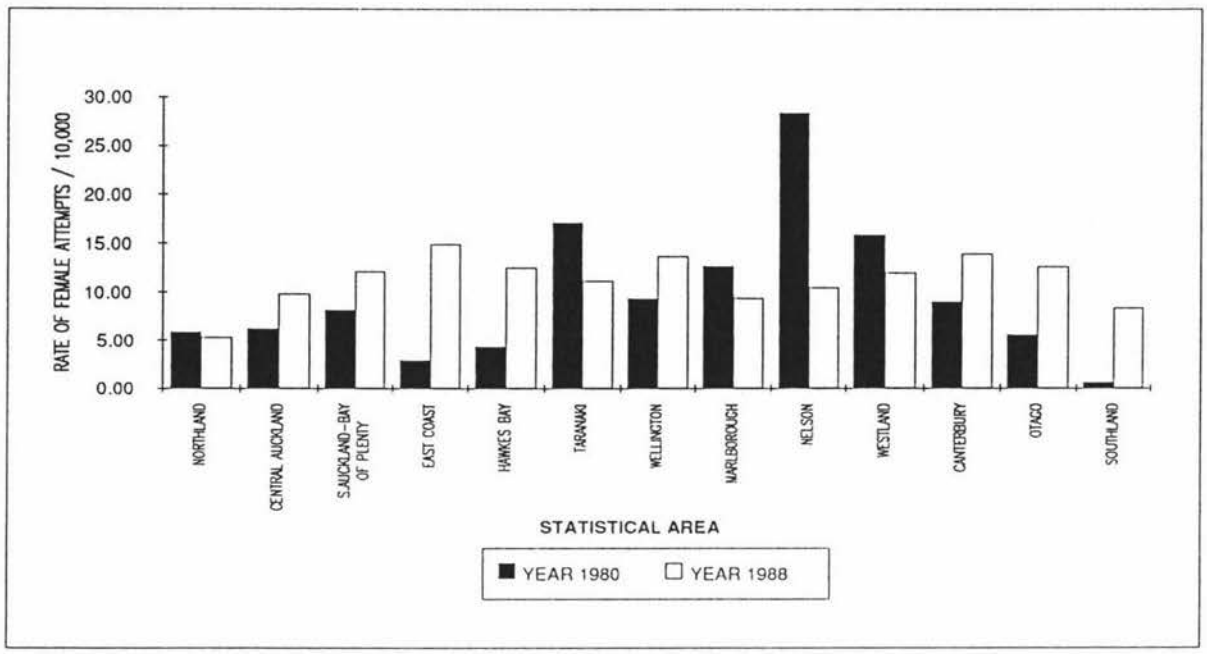


Figure 5.29 Rate of Female Attempts per 10,000 vs Statistical Area in years 1980 and 1988.

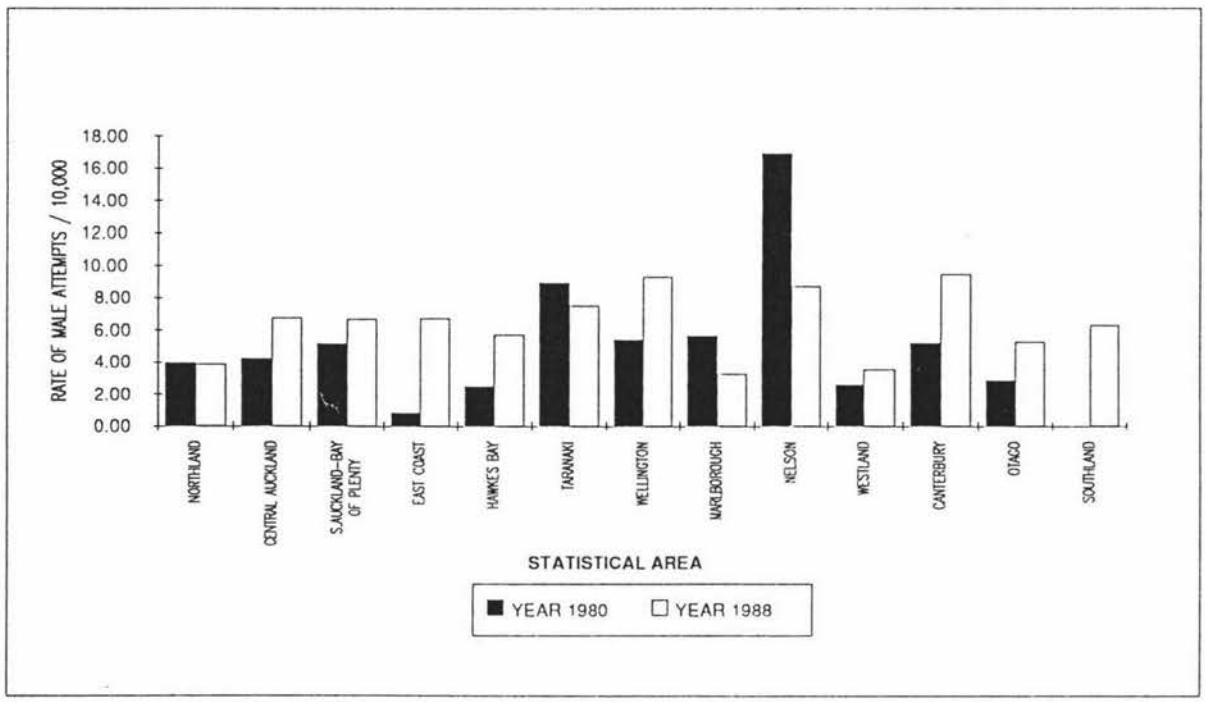


Figure 5.30 Rate of Male Attempts per 10,000 by Statistical Area in Years 1980 and 1988.

5.9 Urban Areas and Rural Areas

In the 1981 Census, the total number of Urban and Rural Areas was the same as 1986 and the definitions of the various areas remain unchanged for the two census years (refer to Appendix B). For both 1980 and 1988, none of the attempts were recorded from Shipping Area. Therefore, Shipping Area was omitted from the tables and figures in this section.

A comparison of the total number of suicide attempts in 1980 and 1988 from Table 5.12 indicate that most areas had an increase in the number of suicide attempts over the years. Some areas had very little difference, either increase or decrease, in the frequency of attempts. For example, the number of suicide attempts for Whakatane only increased by two from 1980 to 1988 while Pukekohe had a decrease of one. Among all the areas, Porirua Basin Zone is the only area which had the same number of suicide attempts in 1980 and 1988. There are also some areas which showed a big difference in the number of attempts, such as Central Auckland Zone, South Auckland Zone and Christchurch all showing a greatly increased figure of suicide attempts, whereas Rural Areas showed an outstanding drop in number of suicide attempts from 394 total attempts in 1980 to only 171 total attempts in 1988.

In the earlier part of the study, areas with high population density such as Christchurch, Central Auckland Zone and South Auckland Zone as well as Minor Urban Areas had a greater number of suicide attempts recorded in 1988, and a similar result was evident in 1980. A high number of suicide attempts were recorded in heavily populated areas such as Central Auckland Zone, Christchurch, Minor Urban Areas and Rural

Areas. Nelson, in 1980 has a very small population compared to those heavily populated areas of Central Auckland Zone and Christchurch, but with a total of 134 suicide attempts, it followed fairly closely to some of the high density areas.

From Table 5.12, females accounted for a equal or higher number of suicide attempts than males in all areas in 1980, whereas for 1988, the earlier chapters showed that there were four areas having a higher number of male suicide attempts. Eleven areas had a decreasing frequency for females, whereas for males, there were seven areas which showed this characteristic. Once again there were some areas which only had small differences in the number of attempts.

When the total populations were taken into account for the rate of attempts, the pattern remained unchanged from the pattern we observed from the number of attempts. For example, areas with equal, or decreasing number of suicide attempts from 1980 to 1988 had a decreasing suicide attempts rate when the total populations were taken into account. Similarly for those areas with an increasing number of attempts over years, increased rates were shown when the total populations were considered. These patterns happened not only to the total rate of suicide attempts but also apply when we look at the rate of attempts separately by sex.

In 1980, Nelson (which belongs to the Main Urban Areas) had the highest rate of suicide attempts with a rate of 31.83 per 10,000 head, whereas in 1988, the highest rate of attempts was from Gore (a Secondary Urban Area) with a rate 19.44 per 10,000 head. Oamaru, with a 2240.1% percentage change in rate from 1980 to 1988 had the highest increase amongst all the different areas. Gisborne and Invercargill also

had a high increasing percentage change in rate over time with a change of more than 1000%. Beside these areas which had outstandingly large increasing values, there are many other areas which also showed a large increasing percentage change in rate over the years. They are South Auckland Zone, Tauranga, Napier, Hastings, Palmerston North, Lower Hutt Valley Zone, Timaru, Tokoroa, Taupo, Blenheim and Ashburton.

In 1980, Rotorua and Taupo were the only two areas which had a higher male suicide attempts rate than females, whereas in 1988, there are four areas which recorded a higher males attempts rate than females, these being Pukekohe, Hawera, Feilding and Kapiti. The highest increasing percentage change in rate from 1980 to 1988 for females was from Oamaru with a percentage of 1623.2, followed by Gisborne which had 1252.5%. For males, the highest was from Gisborne with 1307.6%.

Table 5.14 shows that more than half of the areas had a decreasing proportion of female rate relative to males which again indicates that male suicide attempts rate has increased more than females.

Table 5.12 Frequency of Suicide Attempts by Urban and Rural Area in Years 1980 and 1988.

		FEMALE	FREQUENCY	MALE	FREQUENCY	TOTAL	ATTEMPTS	
	URBAN AND RURAL AREA	1980	1988	1980	1988	1980	1988	
1	WHANGAREI	23	12	11	6	34	18	a
2	NORTH AUCKLAND ZONE	45	65	25	35	70	100	
3	WEST AUCKLAND ZONE	38	57	23	31	61	88	
4	CENTRAL AUCKLAND ZONE	108	162	82	123	190	285	
5	SOUTH AUCKLAND ZONE	42	149	31	92	73	241	
6	HAMILTON	34	86	28	53	62	139	
7	TAURANGA	10	32	3	16	13	48	
8	ROTORUA	19	54	19	25	38	79	
9	GISBORNE	2	27	1	14	3	41	
10	NAPIER	7	35	2	17	9	52	
11	HASTINGS	9	39	8	20	17	59	
12	NEW PLYMOUTH	52	35	23	17	75	52	
13	WANGANUI	42	23	17	13	59	36	
14	PALMERSTON NORTH	22	72	13	49	35	121	
15	UPPER HUTT VALLEY ZONE	25	27	10	19	35	46	
16	LOWER HUTT VALLEY ZONE	23	67	10	51	33	118	
17	PORIRUA BASIN ZONE	26	23	13	16	39	39	
18	WELLINGTON CITY ZONE	35	123	30	62	65	185	
19	NELSON	85	27	49	18	134*	45	
20	CHRISTCHURCH	121	231	68	169	189	400	
21	TIMARU	7	22	2	9	10	31	
22	DUNEDIN	44	82	23	31	67	113	
23	INVERCARGILL	3	23	0	19	3	42	
24	PUKEKOHE	5	3	4	5	9	8	b
25	TOKOROA	3	16	0	5	3	21	
26	TAUPO	1	11	2	7	3	18	
27	WHAKATANE	8	11	5	4	13	15	
28	HAWERA	6	5	0	7	6	12	
29	FEILDING	11	5	8	10	19	15	
30	LEVIN	10	18	1	5	11	23	
31	KAPITI	10	4	3	13	13	17	
32	MASTERTON	7	15	6	13	13	28	
33	BLENHEIM	3	16	1	6	4	22	
34	GREYMOUTH	10	9	3	2	13	11	
35	ASHBURTON	4	16	1	8	5	24	
36	OAMARU	1	17	0	6	1	23	
37	GORE	0	12	0	10	0	22	
38	MINOR URBAN AREAS	127	181	80	101	207	282	
39	RURAL AREAS	248	99	146	72	394*	171*	

Note:
a This group of 23 consists of Main Urban Areas.
b This group of 14 consists of Secondary Urban Areas.
* These cells are referred to in the text.

Table 5.13 Rate and Percentage Increased of Suicide Attempts by Urban and Rural Area in Years 1980 and 1988.

		FEMALE RATE[a]			MALE RATE[a]		
	URBAN AND RURAL AREA	1980	1988	CHANGE (%)[b]	1980	1988	CHANGE (%)[b]
1	WHANGAREI	11.21	5.41	-51.8	5.66	2.77	-51.1[c]
2	NORTH AUCKLAND ZONE	5.85	7.81	33.6	3.40	4.41	29.7
3	WEST AUCKLAND ZONE	6.49	9.00	38.6	3.93	4.94	25.8
4	CENTRAL AUCKLAND ZONE	7.68	11.24	46.4	6.29	9.22	46.5
5	SOUTH AUCKLAND ZONE	3.64	11.93	227.8	2.73	7.50	175.1
6	HAMILTON	6.90	16.68	141.8	5.98	10.90	82.3
7	TAURANGA	3.67	10.57	188.3	1.17	5.67	384.8
8	ROTORUA	8.09	21.57	166.5	8.34	10.55	26.6
9	GISBORNE	1.21	16.38	1252.5*	0.64	9.05	1307.6*
10	NAPIER	2.70	13.25	390.5	0.81	6.85	746.1
11	HASTINGS	3.36	14.00	316.6	3.17	7.67	141.9
12	NEW PLYMOUTH	23.02	14.45	-37.2	10.92	7.39	-32.4
13	WANGANUI	20.71	10.93	-47.2	8.94	6.72	-24.8
14	PALMERSTON NORTH	6.56	20.94	219.4	4.09	15.16	270.3
15	UPPER HUTT VALLEY ZONE	14.16	15.26	7.8	5.51	10.64	93.1
16	LOWER HUTT VALLEY ZONE	4.78	13.97	192.[illegible]	2.12	10.96	416.9
17	PORIRUA BASIN ZONE	9.47	7.86	-17.[illegible]	4.74	5.56	17.3
18	WELLINGTON CITY ZONE	5.20	18.14	249.0	4.51	9.37	107.5
19	NELSON	39.24	12.06	-69.[illegible]	23.97	8.50	-64.[illegible]
20	CHRISTCHURCH	8.20	15.28	86.[illegible]	4.85	11.82	143.8
21	TIMARU	4.63	14.77	219.[illegible]	2.13	6.57	208.4
22	DUNEDIN	8.05	14.87	84.[illegible]	4.49	6.05	34.9
23	INVERCARGILL	1.11	8.52	667.6	0.00	7.31	-
24	PUKEKOHE	7.36	4.19	-43.1	6.04	7.22	19.6[d]
25	TOKOROA	3.25	17.90	451.4	0.00	5.20	-
26	TAUPO	1.39	13.74	889.5	2.72	8.64	217.7
27	WHAKATANE	10.68	13.67	28.1	6.77	5.06	-25.3
28	HAWERA	10.27	8.44	-17.8	0.00	12.29	-
29	FEILDING	17.70	7.63	-56.9	13.35	16.10	20.6
30	LEVIN	10.74	18.39	71.3	1.12	5.42	385.2
31	KAPITI	9.55	3.35	-64.9	3.07	11.76	282.5
32	MASTERTON	7.00	14.96	113.[illegible]	6.25	13.80	120.7
33	BLENHEIM	2.70	13.81	411.[illegible]	0.92	5.30	476.3
34	GREYMOUTH	18.19	16.79	-7.[illegible]	8.41	3.73	-55.[illegible]
35	ASHBURTON	5.05	20.19	299.[illegible]	1.34	10.67	69[illegible].4
36	OAMARU	1.36	23.43	1623.2*	0.00	8.99	-
37	GORE	0.00	21.00	-	0.00	17.84	-
38	MINOR URBAN AREAS	8.81	11.84	34.4	5.60	6.72	20.0
39	RURAL AREAS	10.30	4.01	-61.[illegible]	5.44	2.64	-51.[illegible]

Note:
a The Number of Attempts per 10,000 people.
b Calculated from the rate of attempts over the years.
c This group of 23 consists of Main Urban Areas.
d This group of 14 consists of Secondary Urban Areas.
* These cells are referred to in the text.
- = Not Applicable.

Table 5.14 Rate and Percentage Increased of Suicide Attempts by Urban and Rural Area in Years 1980 and 1988.

		TOTAL RATE[a]			F/M PERCENTAGE**[b]		
	URBAN AND RURAL AREA	1980	1988	CHANGE (%)[c]	1980	1988	CHANGE (%)[d]
1	WHANGAREI	8.51	4.10	-51.8	197.9	195.2	-1.4[e]
2	NORTH AUCKLAND ZONE	4.65	6.15	32.2	171.9	177.0	3.0
3	WEST AUCKLAND ZONE	5.21	6.98	34.0	165.2	182.1	10.2
4	CENTRAL AUCKLAND ZONE	7.01	10.27	46.4	122.0	121.9	-0.1
5	SOUTH AUCKLAND ZONE	3.19	9.74	205.5	133.4	159.0	19.2
6	HAMILTON	6.45	13.88	115.1	115.4	153.1	32.7
7	TAURANGA	2.46	8.20	234.1	313.8	186.6	-40.5
8	ROTORUA	8.21	16.21	97.4	97.1	204.4	110.6
9	GISBORNE	0.94	12.83	1271.5	188.4	181.0	-3.9
10	NAPIER	1.78	10.15	470.8	333.6	193.4	-42.0
11	HASTINGS	3.27	10.94	234.7	105.9	182.4	72.2
12	NEW PLYMOUTH	17.19	11.01	-35.9	210.7	195.6	-7.2
13	WANGANUI	15.01	8.91	-40.6	231.8	162.6	-29.8
14	PALMERSTON NORTH	5.36	18.14	238.5	160.1	138.1	-13.8
15	UPPER HUTT VALLEY ZONE	9.78	12.94	32.3	257.1	143.5	-44.2
16	LOWER HUTT VALLEY ZONE	3.46	12.49	260.4	225.5	127.4	-43.5
17	PORIRUA BASIN ZONE	7.11	6.72	-5.5	199.8	141.3	-29.3
18	WELLINGTON CITY ZONE	4.86	13.81	184.2	115.2	193.7	68.1
19	NELSON	31.83*	10.33	-67.5	163.7	141.9	-13.3
20	CHRISTCHURCH	6.57	13.60	107.1	169.1	129.3	-23.6
21	TIMARU	3.43	10.84	216.6	217.1	224.6	3.4
22	DUNEDIN	6.32	10.62	68.0	179.5	245.6	36.9
23	INVERCARGILL	0.56	7.93	1318.9	-	116.5	-
24	PUKEKOHE	6.71	5.68	-15.3	121.9	58.0	-52.4[f]
25	TOKOROA	1.54	11.32	636.6	-	344.1	-
26	TAUPO	2.06	11.18	442.7	51.1	159.0	211.4
27	WHAKATANE	8.74	9.40	7.6	157.7	270.3	71.4
28	HAWERA	5.18	10.33	99.3	-	68.6	-
29	FEILDING	15.57	11.75	-24.5	132.6	47.4	-64.3
30	LEVIN	6.02	12.10	100.9	960.7	339.1	-64.7
31	KAPITI	6.42	7.39	15.0	310.6	28.5	-90.8
32	MASTERTON	6.64	14.4	117.0	111.9	108.3	-3.2
33	BLENHEIM	1.82	9.60	427.8	293.9	260.8	-11.3
34	GREYMOUTH	11.77	10.26	-12.9	336.1	450.3	34.0
35	ASHBURTON	3.25	15.56	379.1	377.4	189.2	-49.9
36	OAMARU	0.71	16.51	2240.1*	-	260.5	-
37	GORE	0.00	19.44*	-	-	117.7	-
38	MINOR URBAN AREAS	7.21	9.30	29.0	157.2	176.1	12.0
39	RURAL AREAS	7.73	3.29	-57.4	189.8	151.8	-20.0

Note:
a The Number of Attempts per 10,000 people.
b The Proportion of Female Rate of Suicide Attempts Relative to Male.
c Calculated from Rate of Attempts over the years.
d Calculated from c over the years.
e This group of 23 consists of Main Urban Areas.
f This group of 14 consists of Secondary Urban Areas.
* These cells are referred to in the text.
- = Not Applicable.

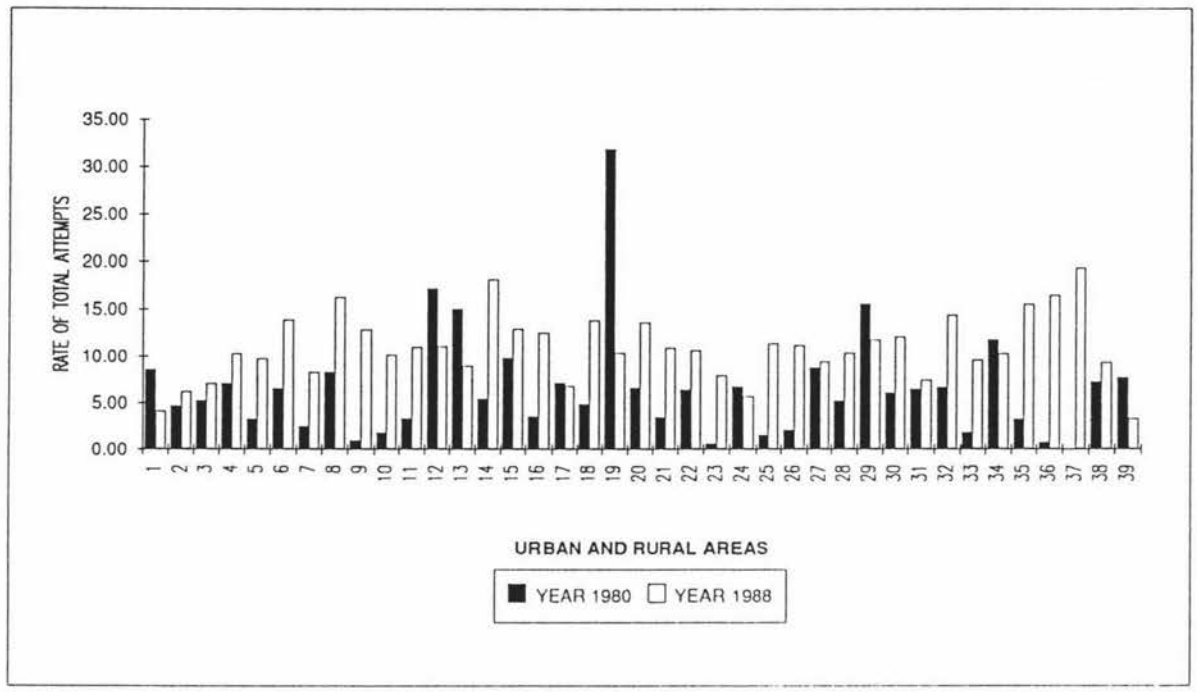


Figure 5.31 Rate of Attempts per 10,000 in Urban and Rural Areas in Years 1980 and 1988.

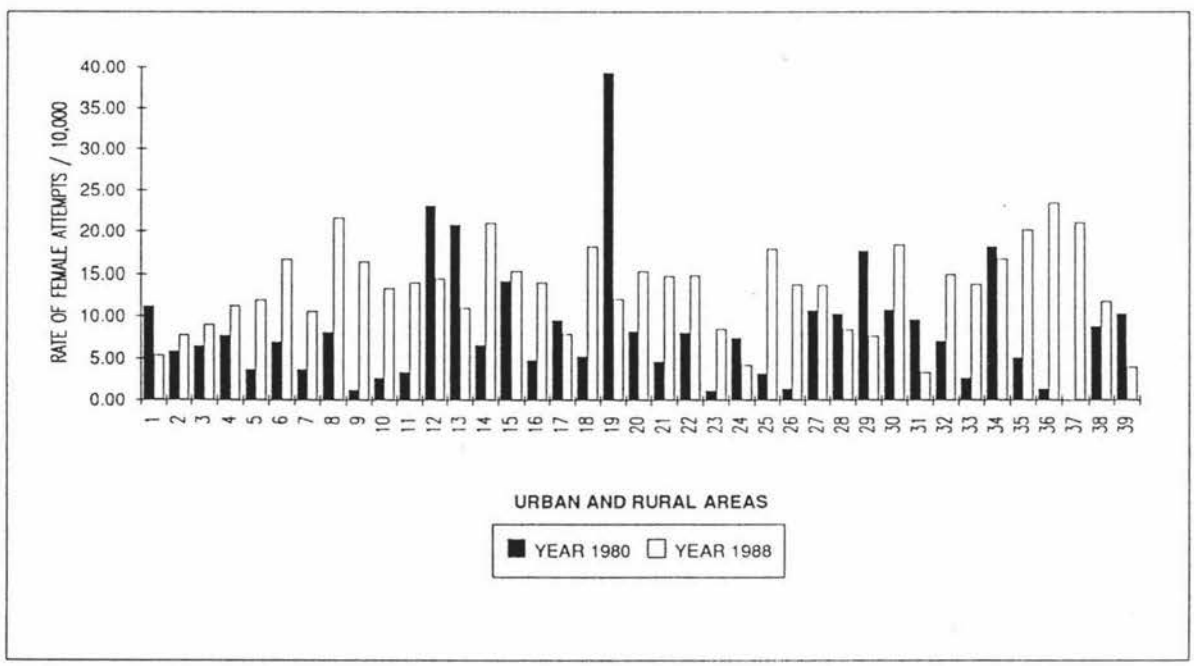


Figure 5.32 Rate of Female Attempts per 10,000 in Urban and Rural Areas in Years 1980 and 1988.

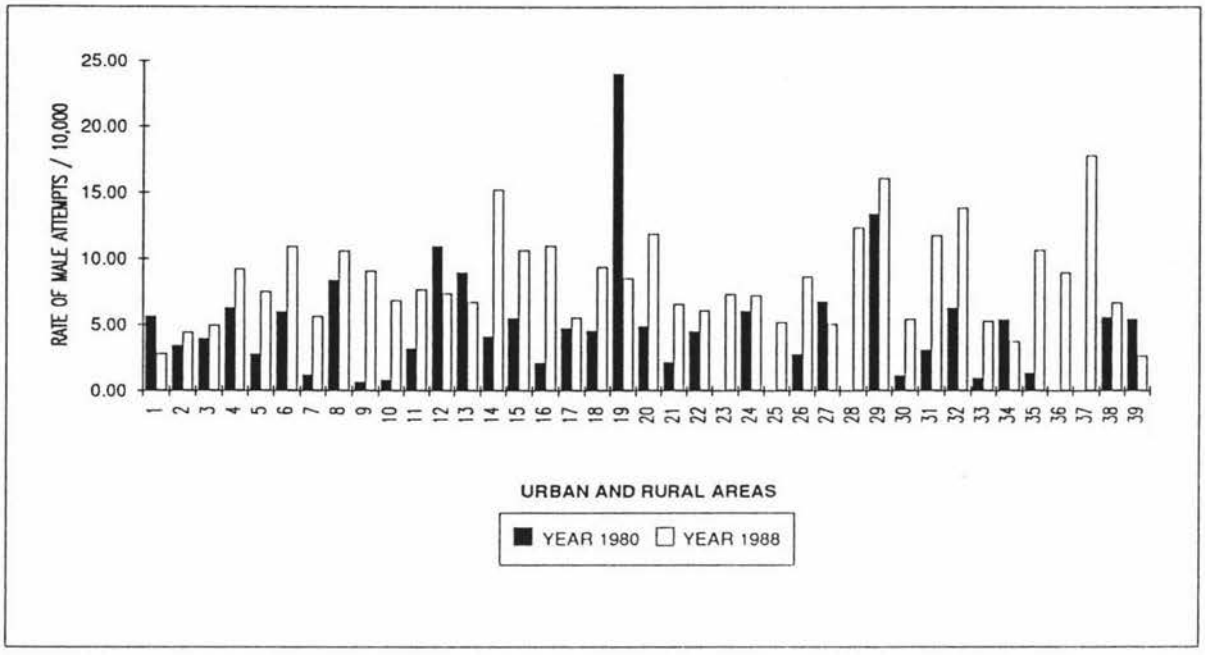


Figure 5.33 Rate of Male Attempts per 10,000 in Urban and Rural Areas in Years 1980 and 1988.

Grouping of Main Urban and Secondary Urban Areas

Apart from Rural Area, other areas had an increasing number of attempts over the years with Main Urban Area, Secondary Urban Area and Minor Urban Area increasing by 1064, 146 and 75 attempts respectively. When the frequency was studied separately for each sex, the same picture was revealed. Other than Rural Area, each sex had an increase in the frequency of attempts for other areas.

When the total populations are taken into consideration, the pattern remained the same. Rural Area was the only area which had a drop in attempts rate for each sex and the combined group from 1980 to 1988, other areas showing an increasing rate of attempts. Secondary Urban

Area had the highest increase in percentage change in rate from 1980 to 1988 for both sexes and the combined group. Males of Secondary Urban Area had a 189.8 percent change in rate over the years which was about double the amount for females.

The percentage of female rate relative to males over the years 1980 to 1988 reduced for Main Urban Area, Secondary Urban Area and Rural Area.

Table 5.15 Frequency, Rate and Percentage Increased of Suicide Attempts by Combined Area in Years 1980 and 1988.

	FEMALE FREQUENCY		MALE FREQUENCY		TOTAL FREQUENCY	
COMBINED AREA	1980	1988	1980	1988	1980	1988
MAIN URBAN AREA	822	1473	492	905	1314	2378
SECONDARY URBAN AREA	79	158	34	101	113	259
MINOR URBAN AREA	127	181	80	101	207	282
RURAL AREA	248	99	146	72	394	171

	FEMALE RATE[a]			MALE RATE[a]		
COMBINED AREA	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[b]
MAIN URBAN AREA	7.58	13.05	72.8	4.54	8.41	77.6
SECONDARY URBAN AREA	7.16	13.83	92.7	3.14	9.13	189.8
MINOR URBAN AREA	8.81	11.84	33.9	5.6	6.72	19.6
RURAL AREA	10.3	4.01	-61.2	6.43	2.64	-52.1

	TOTAL RATE[a]			F/M PERCENTAGE[c]		
COMBINED AREA	1980	1988	CHANGE(%)[b]	1980	1988	CHANGE(%)[d]
MAIN URBAN AREA	6.19	10.79	74.5	160.2	155.2	-3.1
SECONDARY URBAN AREA	5.16	11.52	122.9	228.2	151.5	-33.6
MINOR URBAN AREA	7.21	9.30	29.0	151.2	176.1	12.0
RURAL AREA	7.73	3.29	-57.3	180.8	151.8	-20.0

NOTE:
a The Number of Attempts per 10,000 people.
b Calculated form the Number of Attempts over the years.
c The Proportion of Female Rate of Suicide Attempts Relative to Male.
d Calculated form c over the years.

5.10 Time

The frequency of attempts in every month was greater for 1988 than 1980 (see Table 5.16 and Figure 5.34). This is expected to some extent as 1988 had a much greater number of suicide attempts than 1980. For both years, the number of suicide attempts was very evenly distributed throughout the months, especially in term of percentages. Figure 5.34 shows that 1980 had the highest number of suicide attempts in 'November' whereas in 1988, the peak month is at 'March'. Both years had a higher number of suicide attempts during the hot weather season. Every month had an increasing percentage change in frequency from 1980 to 1988 with values ranging from 35.0% to 77.2%.

Table 5.16 shows a clear picture of a higher number of females attempts than males in both years. 1980 and 1988 both had the highest number of females suicide attempts in 'February' and the lowest number of attempts in 'June'. Males did not have this constant pattern for, in 1980, males had the highest number of suicide attempts recorded in 'November' and 'December' and the lowest in 'April'. In 1988, the highest number of males suicide attempts occurred during 'March' and 'July' had the lowest number of recorded attempts. Both sexes had an increasing percentage change in frequency from 1980 to 1988 in every month. The values for females range from 33.3% to 79.8% whereas for males, it had a bigger range, from 16.9% to 101.9%.

Table 5.16 Frequency and Percentage Increased of Suicide Attempts by Month in Years 1980 and 1988.

FEMALE FREQUENCY

MONTH	1980		1988		CHANGE (%) [a]
	#	%	#	%	
JANUARY	111	8.7	160	8.4	44.1
FEBRUARY	130	10.2	176	9.2	35.4
MARCH	117	9.2	160	8.4	36.8
APRIL	94	7.4	169	8.8	79.8*
MAY	106	8.3	150	7.8	41.5
JUNE	92	7.2	144	7.5	56.5
JULY	96	7.5	150	7.8	56.3
AUGUST	95	7.4	154	8.1	62.1
SEPTEMBER	117	9.2	156	8.2	33.3*
OCTOBER	94	7.4	161	8.4	71.3
NOVEMBER	120	9.4	165	8.6	37.5
DECEMBER	104	8.2	166	8.7	59.6
TOTAL	1276	100	1911	100	

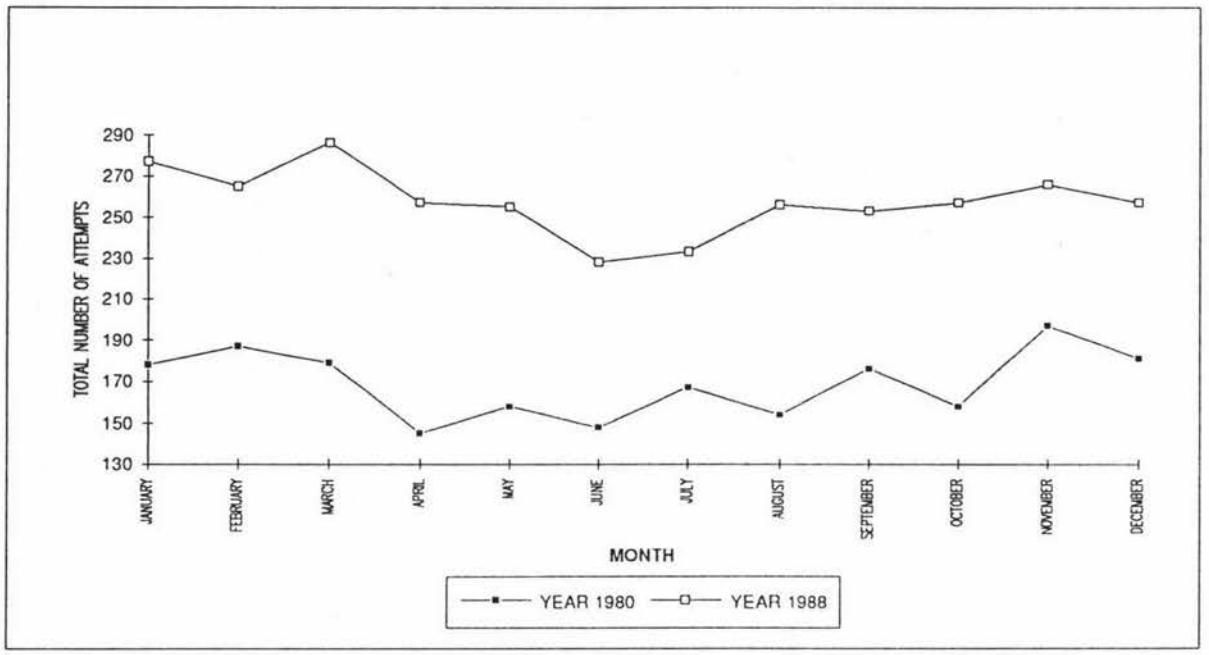
MALE FREQUENCY

MONTH	1980		1988		CHANGE (%) [a]
	#	%	#	%	
JANUARY	67	8.9	117	9.9	74.6
FEBRUARY	57	7.6	89	7.5	56.1
MARCH	62	8.2	126	10.7	103.2
APRIL	51	6.8	88	7.5	72.5
MAY	52	6.9	105	8.9	101.9*
JUNE	56	7.4	84	7.1	50.0
JULY	71	9.4	83	7.0	16.9*
AUGUST	59	7.8	102	8.7	72.9
SEPTEMBER	59	7.8	97	8.2	64.4
OCTOBER	64	8.5	96	8.1	50.0
NOVEMBER	77	10.2	101	8.6	31.2
DECEMBER	77	10.2	91	7.7	18.2
TOTAL	752	100	1179	100	

TOTAL FREQUENCY

MONTH	1980		1988		CHANGE (%) [a]
	#	%	#	%	
JANUARY	178	8.8	277	9.0	55.6
FEBRUARY	187	9.2	265	8.6	41.7
MARCH	179	8.8	286	9.3	59.8
APRIL	145	7.1	257	8.3	77.2*
MAY	158	7.8	255	8.3	61.4
JUNE	148	7.3	228	7.4	54.1
JULY	167	8.2	233	7.5	39.5
AUGUST	154	7.6	256	8.3	66.2
SEPTEMBER	176	8.7	253	8.2	43.8
OCTOBER	158	7.8	257	8.3	62.7
NOVEMBER	197	9.7	266	8.6	35.0*
DECEMBER	181	8.9	257	8.3	42.0
TOTAL	2028	100	3090	100	

Note:
\# Frequency of Attempts.
% Percent of Total Attempts, Female or Male.
* These cells are referred to in the text.
a Calculated from the Number of Attempts over the years.



Figue 5.34 Total Number of Attempts by Month in Years 1980 and 1988.

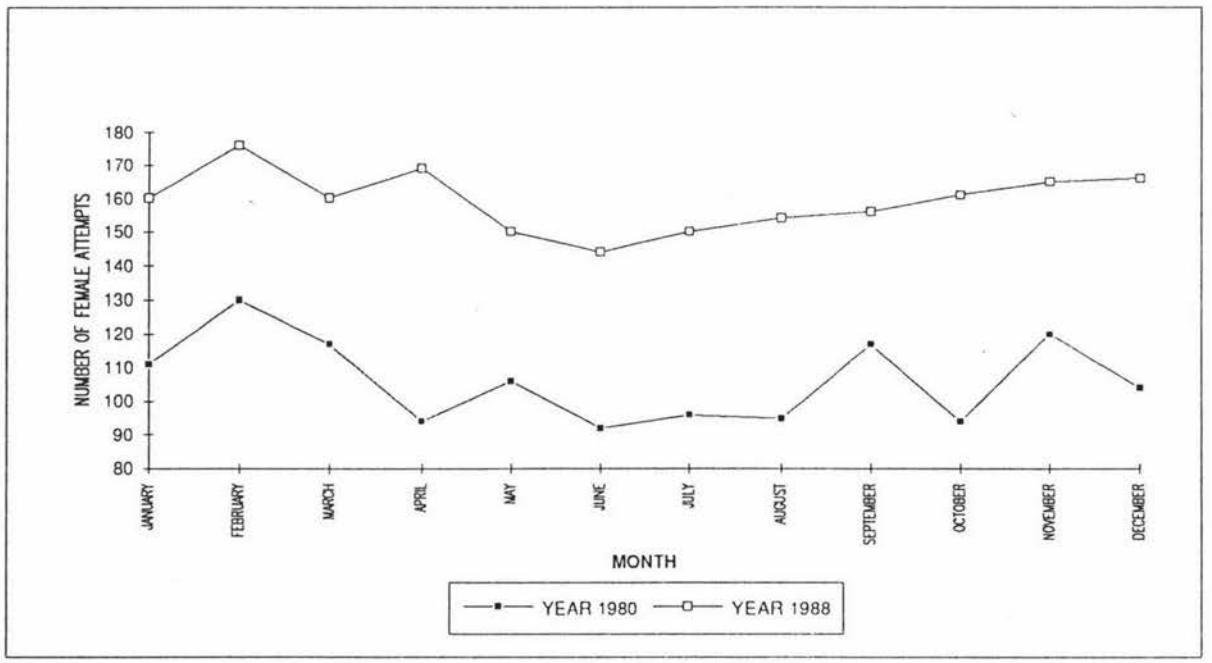


Figure 5.35 Number of Female Attempts by Month in Years 1980 and 1988.

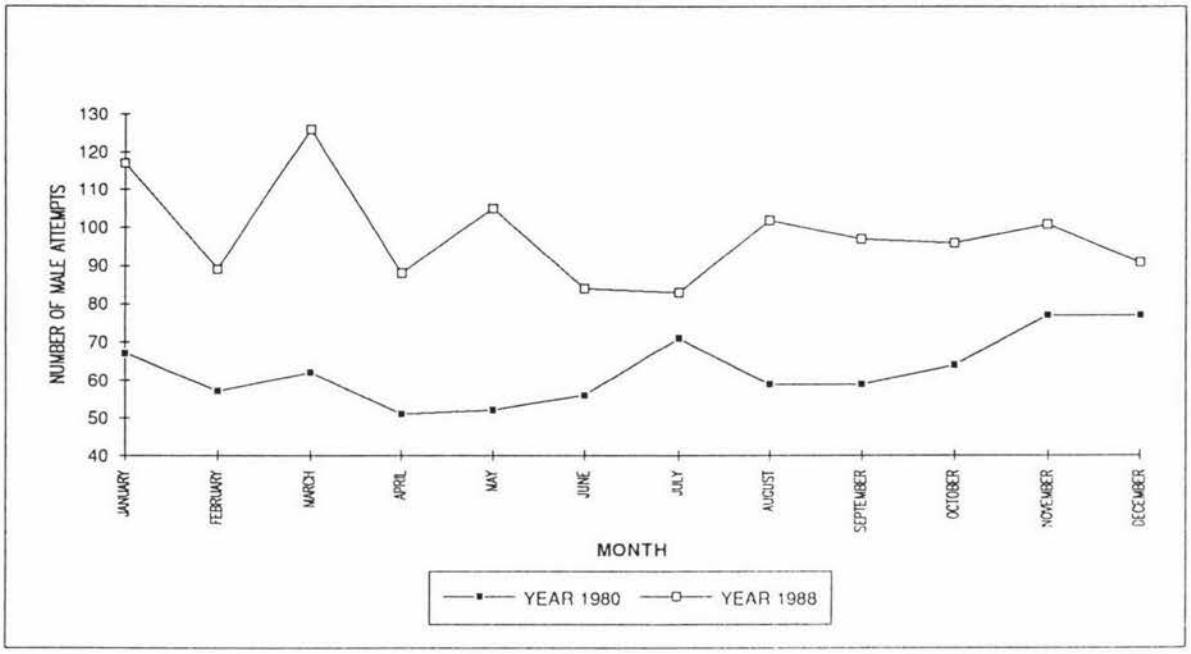


Figure 5.36 Number of Male Attempts by Month in Years 1980 and 1988.

Discussion and Conclusion

The data bases used in this study were the New Zealand Morbidity Data of 1980 and 1988 and the Population Censuses of 1981 and 1986. The morbidity data consisted of individual cases of parasuicide, that is suicide attempts, and various demographic variables. The census data allowed rates per 10,000 head to be calculated. Although these two sources of information were compatible in many of the variables and categories they used, a considerable amount of cross checking of marginal totals was required to obtain rates of attempts for various subgroups of the population.

One major finding of suicide attempts which has also been noted by other authors, is that female attempts at suicide far exceed those of males although rate of male attempts increased relative to female in the years 1980 to 1988. Females tend to use more passive methods than males enabling them to stay relatively shorter times in hospital and which resulting in fewer deaths. This outcome confirms that more males than females succeed in their suicide attempts.

Age plays an important part in the frequency and rate of suicide attempts with teenagers being the most vulnerable but people of all ages being at risk. Some doubts of the accuracy of the Morbidity Data are raised as they include very young children when it seems clear that their

ieed for hospitalisation was accidental rather than a planned suicide attempt.

The study examined the effect of race on frequency and rate of suicide attempts. Although it is difficult to obtain high quality data on ethnicity, it was clear that the Maori rates were higher than for those of European descent. The findings on other racial groups were of interest but these are likely to be of less accuracy than the larger groups because of their smaller size in the population.

The literature suggests that the density of population will affect the rate of suicide attempts. This did not appear to be a critical variable in the New Zealand situation. The time of year has been shown to be important in previous studies and similar effects were noted here as higher number of suicide attempts occurred during the warmer months.

Many displays were formed to consider the interaction of the demographic variables mentioned above which produced some interesting insights such as the high proportion of people discharged on the same day or after 1 day was correlated with the high number of people who used active methods and the high attempts rates for widowers was related to the high attempts rates for older males. Active methods had the highest success rate and young people tended to use method such as 'Poisoning by Solid or Liquid Substances'. Those with ages 60 and onwards had a higher proportion of completed suicide attempts compared to those in the younger age-groups.

To examine the trends over time, the Census Data of 1981 and 1986 were considered along with the Morbidity Data of 1980 and 1988. The marginal population totals did not change much over this period so that

it was assumed that the slight discrepancies between the different years chosen for the morbidity frequencies, 1980 and 1988, and the population totals, 1981 and 1986, would not greatly distort the rates of attempts which were calculated for 1980 and 1988. The trends over these years indicated a higher increasing male rate of suicide attempts than female. In particular, the suicide attempts of youths highly increased.

APPENDIX A

A.1 Coding of Race

M = Maori
OC = Chinese
OI = Indian
PF = Fijian
PR = Cook
PT = Tongan
O = Other
OE = European
P = Pacific Islander
PN = Niuean
PS = Samoan

Note: In this study PN, PF, PR, PS, PT and P will be considered as one group, 'Pacific Islander'.

A.2 Coding of Marital Status

S = Single
F = de Facto
W = Widowed
P = Separated
M = Married
D = Divorced
U = Unknown

Note : Person's age equal or under 15, were grouped as single.

A.3 Coding of Sex

F = Female M = Male

A.4 Coding of Discharge Type

DR = Discharge, Routine. (used when none of the others below apply)
DD = Discharge, Death.
DS = Discharge, Self.
DI = Discharge, Self, Indemnity Signed.
PN = Private Nursing Home.
SG = To General Hospital, Same Board.
SM = To Maternity Hospital, Same Board.
SP = To Psychiatric Hospital, Same Board.
SO = To Other Hospital, Same Board.
OG = To Other Hospital, Other Board.
OM = To Maternity Hospital, Other Board.
OP = To Psychiatric Hospital, Other Board.
OO = To Other Hoapital, Other Board.
PG = To General Hospital, Private.
PM = To Maternity Hospital, Private.
PP = To Psychiatric Hospital, Private.
PO = To Other Hospital, Private.

A.5 Coding of Ecode

E9500-9509 = Suicide and Self-Inflicted Poisoning by Solid or Liquid Substances.

E9510-9519 = Suicide and Self-Inflicted Poisoning by Gases in Domestic Use.

E9520-9529 = Suicide and Self-Inflicted Poisoning by Other Gases and Vapours.

E9530-9539 = Suicide and Self-Inflicted Injury by Hanging, Stangulation and Suffocation.

E9540-9549 = Suicide and Self-Inflicted Injury by Submersion (drowning).

E9550-9559 = Suicide and Self-Inflicted Injury by Firearms and Explosives.

E9560-9569 = Suicide and Self-Inflicted Injury by Cutting and Piercing Instruments.

E9570-9579 = Suicide and Self-Inflicted Injury by Jumping from High Place.

E9580-9589 = Suicide and Self-Inflicted Injury by Other and UnSpecified Means.

E9590-9599 = Late Effects of Self-Inflicted Injury.

A.6 Details of Suicide and Self-Inflicted Poisoning by Solid or Liquid Substances

9500 = Analgesics, Antipyretics and Antirheumatics.

9501 = Barbiturates.

9502 = Other Sedatives and Hypnotics.

9503 = Tranquillizers and Other Psychotropic Agents.

9504 = Other Specified Drugs and Medicaments.

9505 = Unspecified Drug or Medicament.

9506 = Agricultural and Horticultural Chemical and Pharmaceutical Preparations other than Plant Foods and Fertilizers.

9507 = Corrosive and Caustic Substances.

9508 = Arsenic and Its Compound.

9509 = Other and Unspecified Solid and Liquid Substances.

APPENDIX B

B.1 Statistical Areas

'Statistical Areas' was obtained from the breakdown of the response 'Domicile' as was mentioned earlier in chapter one. "At the 1961 Census, New Zealand was divided into thirteen Statistical Areas many of which conformed to the old provincial districts. These are broad geographic regions which do not conform to any legal or administrative boundaries, nor do they have any pre-determined population size. The boundaries of the areas remained unchanged through the 1986 Census." (See 1986 NZ Census, Series D). The thirteen Statistical Areas are as follows:

1 Northland
2 Central Auckland
3 South Auckland-Bay of Plenty
4 East Coast
5 Hawke's Bay
6 Taranaki
7 Wellington
8 Marlborough
9 Nelson
10 Westland
11 Canterbury
12 Otago
13 Southland

B.2 Urban and Rural Areas

New Zealand is divided into forty urban and rural areas, thirty-eight Urban Areas, Rural Areas and Shipping Areas. The Urban Areas structure comprises a three-part classification, consisting of Main, Secondary and Minor Urban Areas which constitute the 'Urban' population of New Zealand. Main and Secondary Urban Areas are centred on a major city or borough and include neighbouring boroughs, town districts and parts of counties which are regarded as suburban and thus belonging to that centre of population, irrespective of their being under different local body administration.

Definition of the various areas:

(1) Main Urban Areas - The boundaries of subdivisions in main urban areas were first determined in 1971 and, except for changes necessitated by local authority boundary changes, they remained unaltered at the 1976 Census. However, one of the criteria for defining main urban areas was a population of 20,000 or more. This was increased to 30,000 population at the 1981 Census, reducing the number of main urban areas from 24 to 23 by transferring Masterton to the Secondary Urban Areas group. It had been expected that the population of Timaru Urban Area would exceed 30,000 at the 1981 Census, but in fact, its population decreased. Timaru has been retained as one of the 23 Main Urban Areas at the 1981 Census and as one of the 17 Main Urban Areas at the 1986 Census, as it displays the characteristics of a Main

Urban Area.

At the 1986 Census the criteria remained 30,000 or more population but there are now 17 Main Urban Areas. The two major urban centres, Auckland and Wellington are each classified as a Main Urban Area subdivided into four zones. The four subdivided zones in these two major urban centres are :

Auckland
(1) North Auckland Zone
(2) West Auckland Zone
(3) Central Auckland Zone
(4) South Auckland Zone

Wellington
(1) Upper Hutt Valley Zone
(2) Lower Hutt Valley Zone
(3) Porirua Basin Zone
(4) Wellington City Zone

In past censuses, these Auckland and Wellington zones were classified separately as Main Urban Areas which is the approach of this study.

(2) Secondary Urban Areas - This category which was introduced at the 1981 Census has similar criteria to Main Urban Areas except that the population ranges between 10,000 and 29,999. Fourteen Secondary Urban Areas (including Masterton formerly a Main Urban Area) were created and still exist.

(3) Minor Urban Areas - This category comprises all towns with a population of 1,000 or over which are not already classified as a Main or Secondary Urban Area.

(4) Rural Areas - The rural areas of New Zealand are those which are not specifically designated as 'Urban'. They include towns of less than 1,000 populations plus administrative county territory where this is not included in a Main, Secondary or Minor Urban Area. Extra-County islands (these are islands which are not within county or city or borough boundaries) are included in the rural population of New Zealand.

(5) Shipping Areas - This refers to persons emumerated on board vessels in New Zealand waters on census night. They are included in populations of Statistical Areas, but excluded from the Urban/Rural classification (See 1986 NZ Census, Series D).

The forty Urban and Rural Areas are as follows:

1 Whangarei
2 Northern Auckland Zone
3 Western Auckland Zone
4 Central Auckland Zone
5 Southern Auckland Zone
6 Hamilton
7 Tauranga

8 Rotorua
9 Gisborne
10 Napier
11 Hastings
12 New Plymouth
13 Wanganui
14 Palmerston North
15 Upper Hutt Valley Zone
16 Lower Hutt Valley Zone
17 Porirua Basin Zone
18 Wellington City Zone
19 Nelson
20 Christchurch
21 Timaru
22 Dunedin
23 Invercargill
24 Pukekohe
25 Tokoroa
26 Taupo
27 Whakatane
28 Hawera
29 Feilding
30 Levin
31 Kapiti
32 Masterton
33 Blenheim
34 Greymouth
35 Ashburton
36 Oamaru

37 Gore

38 Minor Urban Areas

39 Rural Areas (Inci. Extra County Islands)

40 Shipping Areas

Note:

Main Urban Areas consists of those areas with number coded from 1 to 23, Whereas Secondary Urban Areas consists of those with number coded from 24 to 37.

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