



Safe Communities Foundation New Zealand

Dr Carolyn Coggan, *PhD*

Tauranga Injury Data Report

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Safe Communities Foundation New Zealand (SCFNZ)
10 College Hill, Ponsonby, PO Box 90640, Auckland Mail Centre, Auckland 1030, New Zealand.
Tel: +64 9 360 8846 Fax: +64 9 360 8849 www.safecommunities.org.nz
Certifying Centre of the WHO Safe Community Network;
Affiliate Safe Community Support Centre of the WHO Collaborating Centre on Community Safety Promotion; &
Affiliate Centre with Certifying Authority of the International Safe Schools Movement.

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1.0 Introduction

1.1 Overview

The prevention of injuries is a major public health priority area in New Zealand, as injury is the leading cause of death between 1-34 years (Coggan, Langley & Dawe, 2000). Injuries account for more potential years of life lost than heart disease and cancer combined. Following complications of childbirth and pregnancy, injuries are also responsible for more hospitalisations than any other cause.

Although injury prevention is a relatively new discipline, there is increasing recognition nationally and internationally that community-based injury prevention programmes are an effective and acceptable way to reduce the burden of injury experienced by individuals, whanau/families and communities. Based on the World Health Organisation (WHO) 'Safe Communities' model, the community-based programme has been adopted in New Zealand following successful Australian and Scandinavian initiatives (Coggan, Bennett, Patterson & Borne, 2003; Coggan, Patterson, Brewin, Hooper, & Robinson 2000; Svanstrom 1997; Day, Ozanne-Smith, Cassell, Li, 2001). The model is a community-based all age, all injury prevention model which recognises that those most able to solve community injury prevention programmes are those people living in that particular community (Brewin & Coggan, 2004).

Community-based injury prevention programmes were first established in Aotearoa/New Zealand in the early 1990s, and rigorous evaluation evidence indicates that the model is effective (Coggan, Patterson, Brewin et al, 2000; Brewin & Coggan, 2003). Currently in Aotearoa/New Zealand there are, in addition to Tauranga District, more than 30 other communities at various stages of implementing community action in injury prevention, including Whangarei City, Auckland City, Waitakere City, Manukau City, North Shore City, Wellington City, Christchurch City, Turanganui-a-kiwa, Ngati Porou, Waimakariri and 23 ACC ThinkSafe communities.

Evidence from the evaluations undertaken with three of these initiatives to date, strongly suggests that community-based injury prevention activities are able to have an impact on the injury burden experienced by people of all ages. For example, evaluation findings from the Turanganui-a-kiwa Community Injury Prevention

Programme (CIPP) indicate that injury death rates have steadily declined for the period 1996-1999 (Brewin & Coggan, 2002). Conversely, injury death rates for the comparison community, where there was no community-based injury prevention programmes in place, increased during this period.

Similarly, following implementation of Safe Waitakere in 1996, injury death rates decreased considerably from 48 deaths per 100,000 population in 1997 to 34 deaths per 100,000 per population in 1999. Waitakere City also had a lower injury hospitalisation rate than the rest of Auckland in 1998, 2000 and 2001. This injury hospitalisation rate for Waitakere City was considerably lower than the comparison community (where there was no community-based injury prevention programmes in place), from 1997-2001 (Coggan, Lee, Patterson & Fill, 2003). The provision of injury data is an essential tool for assessing the effects of community-based programmes. It is also vital for the identification of groups at high risk of injury within specific communities.

1.2 How to use this report

This report consists of five main sections: Section one provides a brief introduction and overview of the report objectives. Section two describes the data sources used to support this report, and the methods of data analysis used.

Section three describes Tauranga District injury statistics. Firstly, this section begins by providing an overview of the demographic data of Tauranga District. Secondly, injury death data is described, including leading causes of injury deaths, overall rates of injury deaths by age group and comparisons of injury deaths by Ward. Injury hospitalisations for Tauranga District are also outlined, including leading causes of injury hospitalisations; overall rates of injury hospitalisations by age group; rates of injury hospitalisations by gender; injury hospitalisations by ethnicity; and comparisons of injury hospitalisations by Ward.

Sections four to seven outline demographic and injury statistics for the three Wards which comprise Tauranga District (Section four: Mount Maunganui-Papamoa Ward; Section five: Otumoetai-Bethlehem Ward; Section six: Te Papa Ward; Section seven: Welcome Bay Ward). Data are provided on the usual population of each Ward,

including information about the age and gender composition of the total population. Household and personal income information is also provided. For each Ward, an analysis of overall leading causes of injury deaths is provided, and, where possible, an analysis by ethnicity is also provided. Overall causes of injury hospitalisation are provided, and a detailed analysis of injury hospitalisation is provided, including analysis by age, gender and ethnicity. Leading causes of injury hospitalisation and rates of injury hospitalisation are provided for each Ward, for Maori, New Zealand European and Pacific populations.

1.3 Objectives

The objectives of this report are to present:

1. Routinely collected baseline data which can be used to identify injury prevention related needs and issues in Tauranga District;
2. Routinely collected data on a Ward-by-Ward basis to enable comparisons by areas;
3. Routinely collected data to enable comparisons over time; and
4. The data in a meaningful manner to assist in the development of strategic plans for injury prevention for Tauranga District.

2.0 Methodology

2.1 Sources of information

The sources of information utilised to develop this community injury profile came from a wide variety of sources, including:

- Routinely collected injury statistics from the New Zealand Health Information Service (NZHIS) related to injury deaths (1993-1999) and hospitalisations (1993-2003) for Tauranga District;
- 1991, 1996 and 2001 New Zealand Census data from Statistics New Zealand;

2.2 Data analysis

Data were analysed using SAS Version 9.0 in Windows. Injury data were sourced from the NZHIS Minimum Dataset. Injury deaths and hospitalisations caused by medical misadventure, adverse effects, and late effects were excluded from the analysis. Injury hospitalisation records were selected for patients who were admitted overnight to hospital with a primary diagnosis of injury. Cases were only included if the patient survived the injury, and if the admission was the first hospitalisation for this injury.

The category labelled *“motor vehicle traffic crash on a public road”* includes crashes involving a pedestrian, but does not include cycle crashes, which are coded as a separate category. Note that this data is for people resident in Tauranga District, not for the location in which the injury event occurred.

As changes were made to the definition of ethnicity in 1995, 1996 is the beginning of a new time series for ethnicity data. Therefore all ethnicity statistics for injury death data in this document refer only to the period from 1996 onwards. Also, because of a change in the wording of the question in the 2001 Census of Population and Dwellings that asks about ethnicity, the 2001 Census data is not consistent with the 1996 Census data. Since age specific rates were calculated from population estimates based on the Census data, ethnicity statistics for injury hospitalisation data refer only to the period from 2001 onwards (for years not in a Census year, population figures

were estimated). The standard population used in the calculation of age-standardised rate is Segi's world population.

Sections four to seven of this report present injury data at the Ward level. Injury data for the Wards were compiled by using the domicile code recorded for the injured person's place of residence. Some domicile codes may fall into two Ward boundaries, however these records are counted only once in one Ward according to the list provided by Statistics New Zealand. As the numbers of injury deaths for each of the Wards are relatively small, separate analyses by ethnicity were not carried out for death data.

3.0 Tauranga District Injury Statistics

3.1 Tauranga district demographics

This section provides information relating to population, age, ethnicity and income for the Tauranga District.

Table 1: Tauranga District - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	14112	16	12237	16	8913	13
NZ European/Other	79140	87	69105	89	59472	89
Pacific peoples	1401	2	1176	2	576	1
Total Persons [≈]	90906	105	77778	107	66738	103

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

[≈] Total percentage may not add up to 100% as people may belong to more than one ethnic group.

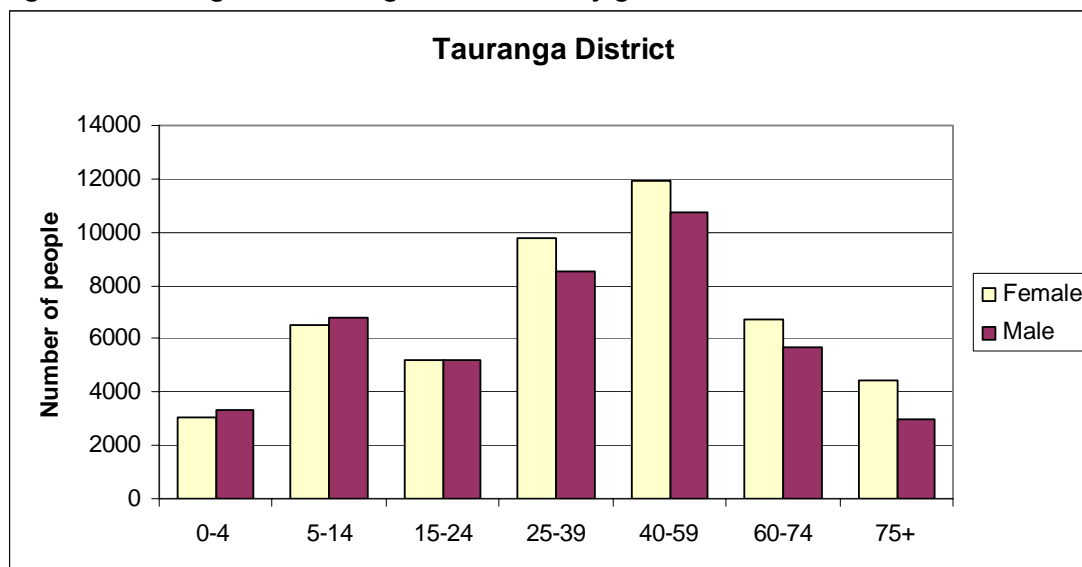
Table 2: Tauranga District - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	7	7	7
5-14	15	14	14
15-24	11	12	14
25-39	20	21	21
40-59	25	23	22
60-74	14	15	16
75+	8	7	7

Table 3: Tauranga District - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > \$30,000	13038	52
Personal incomes > \$30,000	16626	23
Average per capita personal income	\$22,997	

Figure 1: Tauranga District - Age distribution by gender in 2001 Census



3.2 Injury statistics

3.2.1 NZHIS injury deaths 1993-1999

Between 1993 and 1999, 277 residents of Tauranga District died as the result of receiving an injury. This is equivalent to a crude injury rate of 51 injury deaths per 100,000 person years. Males accounted for the majority (68%) of fatalities.

Figure two shows that the leading cause of injury deaths was suicide (34%). Motor vehicle crashes on a public road was the second leading cause of injury death (27%); followed by falls (17%); drowning (5%); homicide (3%); and suffocation (3%).

Figure 2: Tauranga District - Leading causes of injury deaths 1993-1999

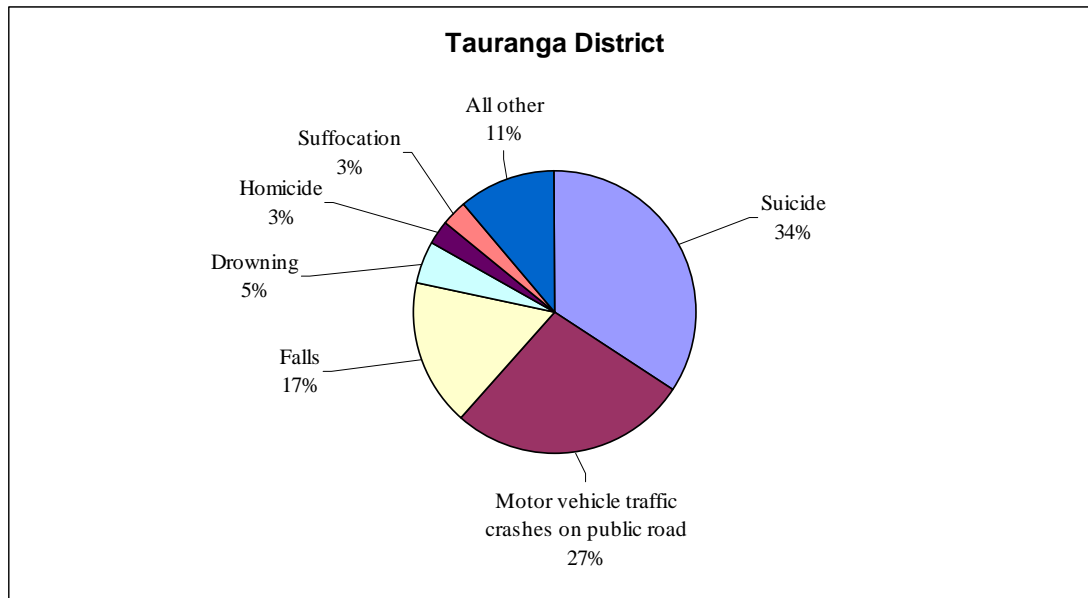
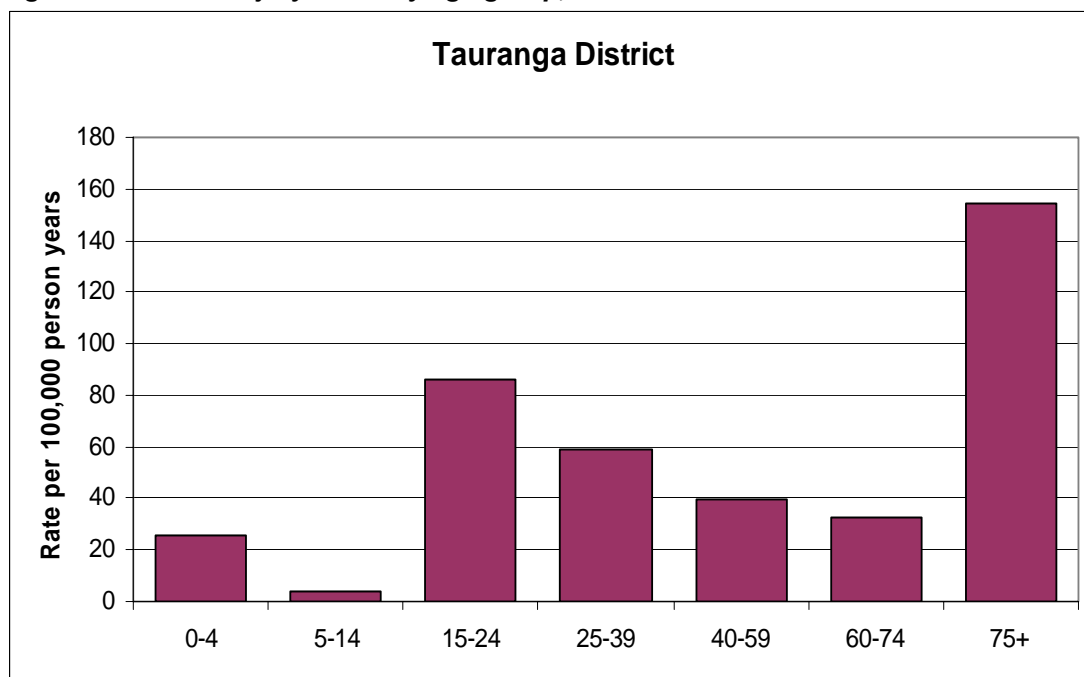


Figure three shows that the 75+ age group had the highest rate of injury death (154 deaths per 100,000 person years) followed by young people aged 15-24 years (86 deaths per 100,000 person years).

Figure 3: Rates of injury death by age group, 1993-1999



3.2.1.1 Leading causes of injury death by age group

As shown in figure four, 10 children aged 0-4 years died from an injury during the period of 1993-1999. Motor vehicle crashes on a public road (30%), and suffocation (30%) were the leading causes of injury deaths, followed by drowning (10%); homicide (10%); railway crash (10%); and vehicle crashes off public road (10%).

Figure 4: Leading causes of injury deaths for 0-4 year olds, 1993-1999

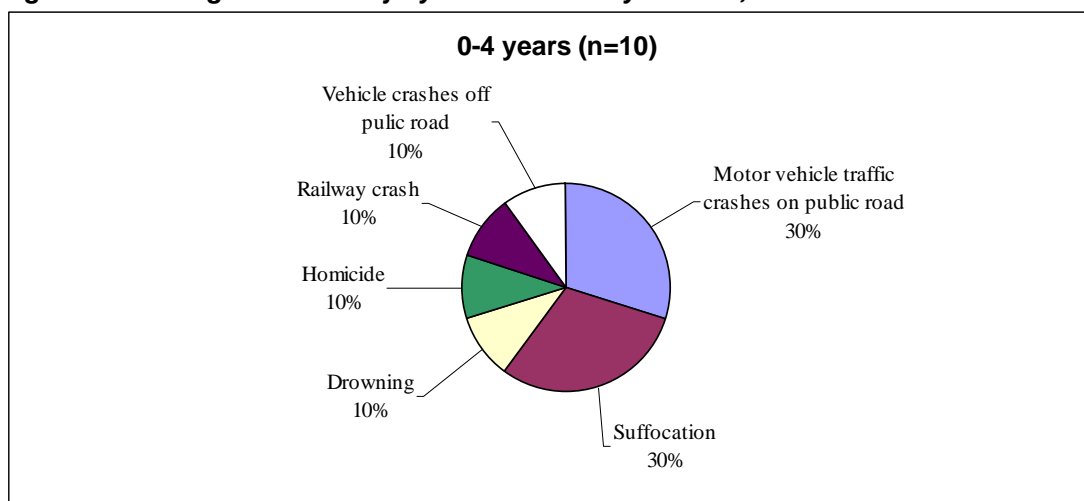
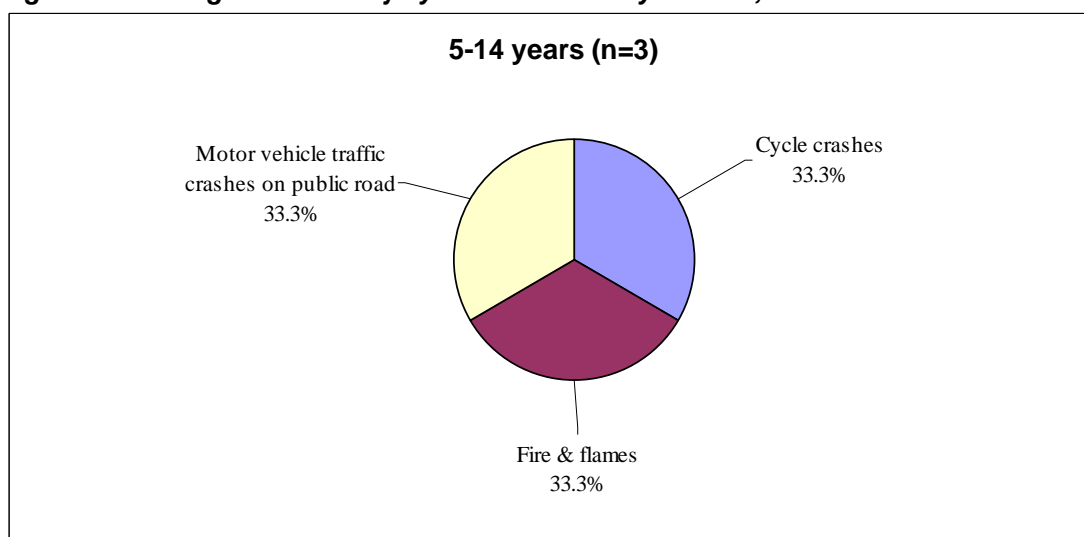


Figure five shows that three children aged 5-14 years died from an injury during the period of 1993-1999. The other leading causes of injury death were cycle crashes (33.3%); fire and flames (33.3%); and motor vehicle crashes on a public road (33.3%).

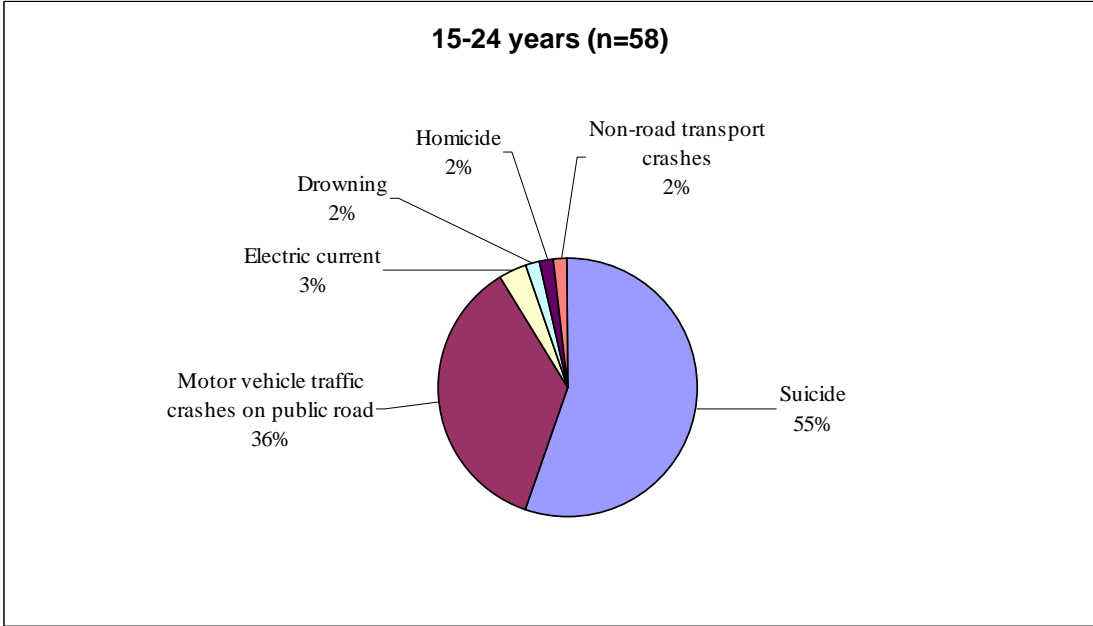
Figure 5: Leading causes of injury deaths for 5-14 year olds, 1993-1999



As shown in figure six, for 15-24 year olds, suicide was the leading cause of injury death (55%). Motor vehicle crashes on a public road were the second leading cause

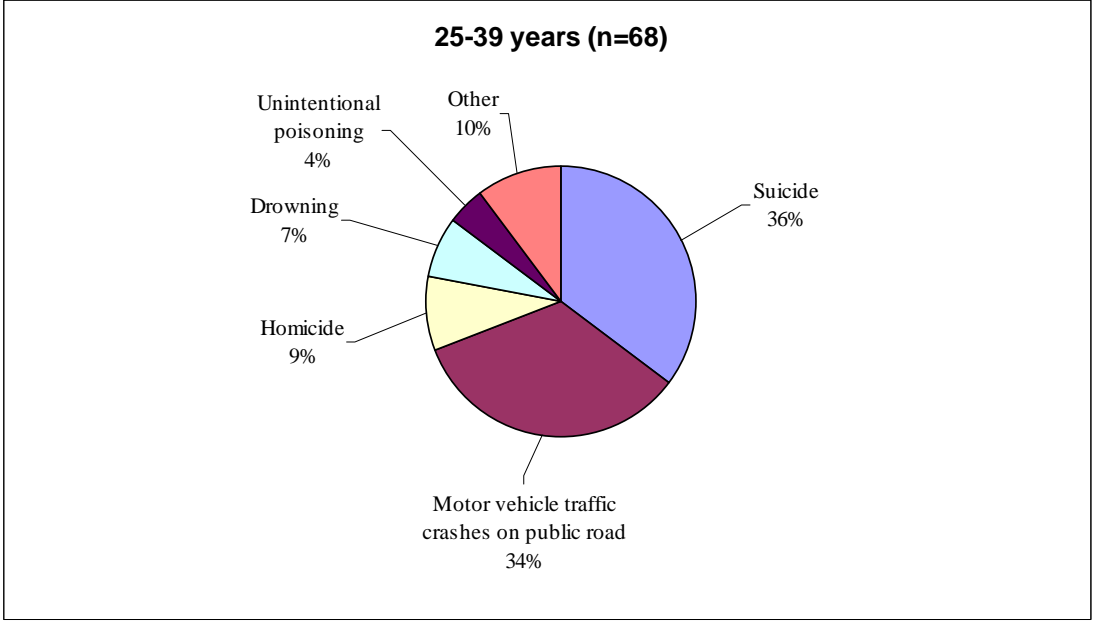
of injury death (36%); followed by electric current (3%); drowning (2%); homicide (2%); and non-road transport crashes (2%).

Figure 6: Leading causes of injury deaths for 15-24 year olds, 1993-1999



In the 25-39 age group, suicide accounted for more than one-third (36%) of the deaths (figure seven). Approximately one-third (34%) of the injury deaths were caused by motor vehicle crashes on a public road; 9% were the result of homicide; 7% of deaths were caused by drowning; and 4% of the fatalities were as a result of unintentional poisoning.

Figure 7: Leading causes of injury deaths for 25-39 year olds, 1993-1999



As shown in figure eight, for adults aged 40-59 years, 46% of the deaths were the result of suicide. Motor vehicle crashes on a public road were the second leading cause of injury death (20%); followed by drowning (8%); falls (6%); non-road transport crashes (6%); cycle crashes (4%); and railway crashes (4%).

Figure 8: Leading causes of injury deaths for 40-59 year olds, 1993-1999

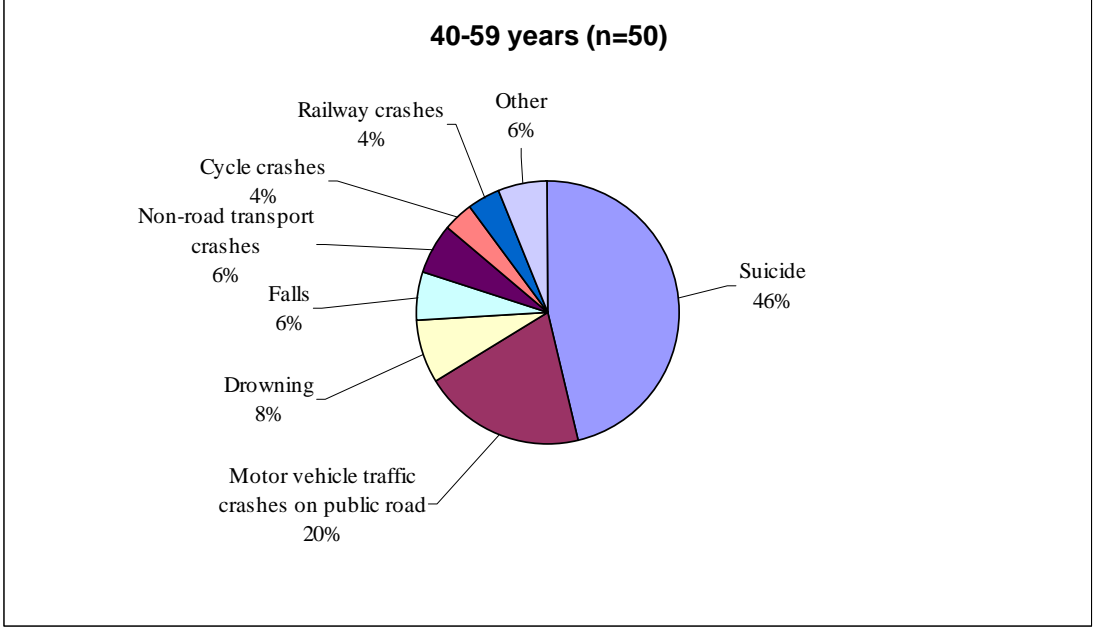
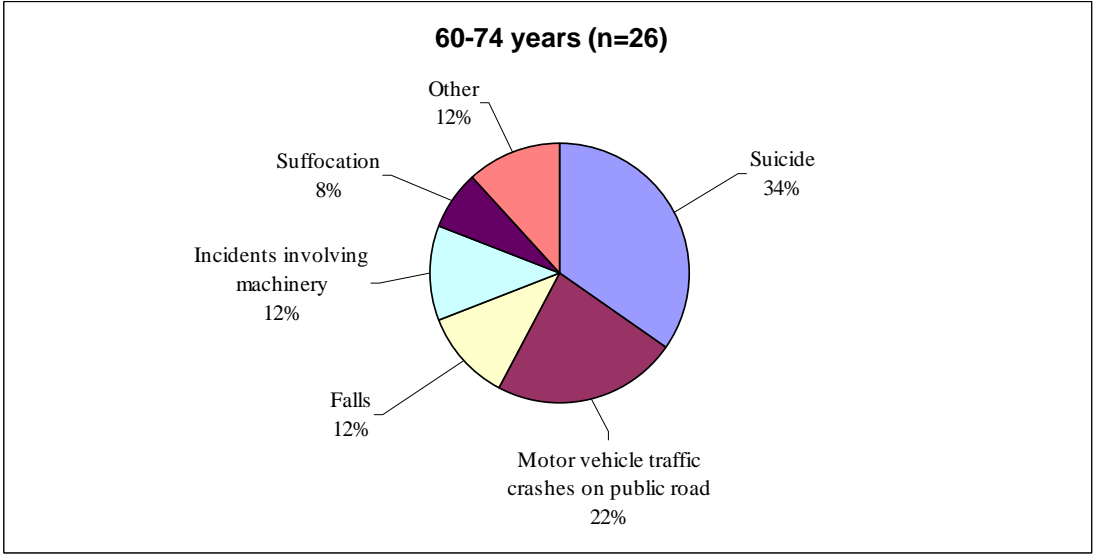


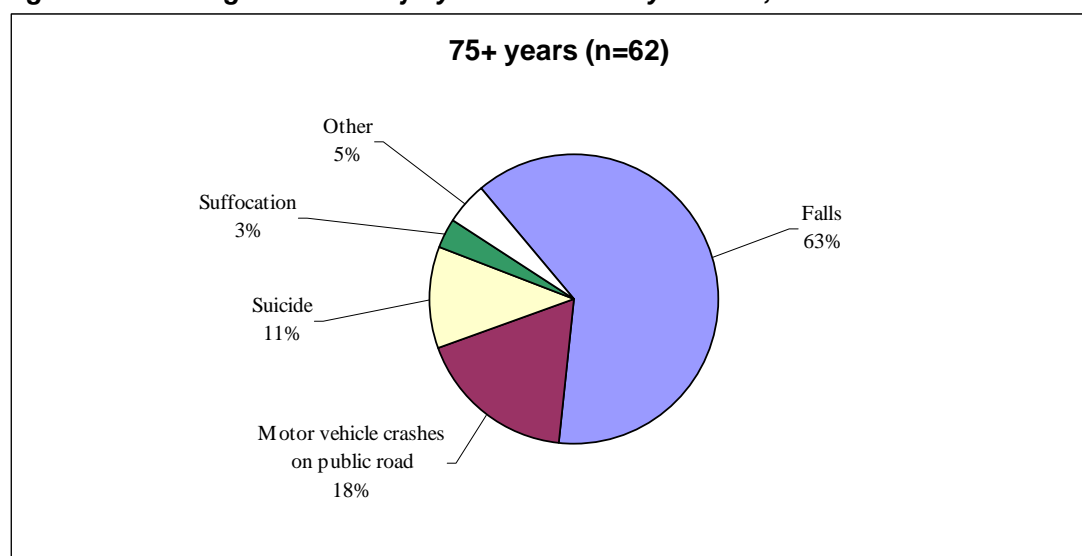
Figure nine shows that for people aged between 60-74 years of age, 34% of the deaths were the result of suicide. Motor vehicle crashes on a public road (22%) were the second leading causes of injury deaths; followed by falls (12%); incidents involving machinery (12%); and suffocation (8%).

Figure 9: Leading causes of injury deaths for 60-74 year olds, 1993-1999



For older people aged 75+, approximately two-thirds (63%) of the deaths were the result of falls (figure 10). The other leading causes of injury death were motor vehicle crashes on a public road (18%); suicide (11%); and suffocation (3%).

Figure 10: Leading causes of injury deaths for 75+ year olds, 1993-1999



3.2.1.2 Ethnic comparison

For the period 1996-1999, Maori had the highest age-standardised rate (65 deaths per 100,000 person years) of injury deaths, followed by New Zealand European/Other (56 deaths per 100,000 person years), and Pacific peoples (18 deaths per 100,000 person years). Of the 164 people who died from injury, New Zealand European/Other accounted for the majority (79%), Maori accounted for 20%, and Pacific peoples accounted for 1%.

Figure 11 gives a breakdown of injury death rates by ethnicity and age group. The New Zealand European/Other ethnic groups had the highest injury death rates (548 deaths per 100,000 person years) in the older age groups (75+). Maori had the highest rate (94 deaths per 100,000 person years) of injury death for age group 25-39 years. Only one death for Pacific peoples occurred during the period of 1996-1999.

Figure 11: Injury death rates by ethnicity and age group for Tauranga District, 1996-1999

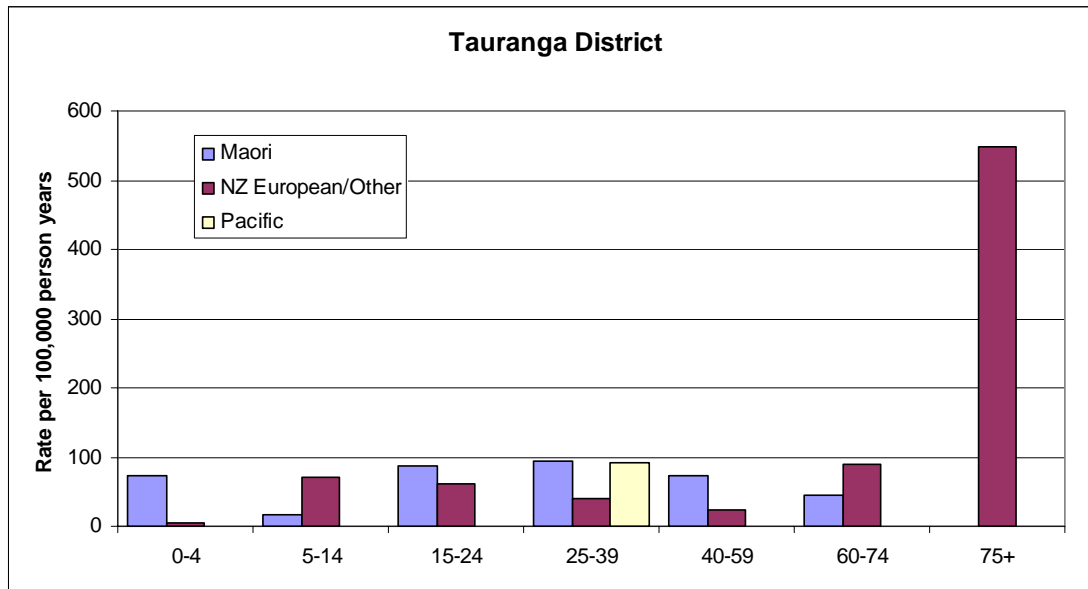


Table four shows that the leading cause of injury deaths for New Zealand European/Other was suicide (38%) and motor vehicle crashes on a public road for Maori (30%). The only death for Pacific peoples was caused by a motor vehicle crash on a public road.

Table 4: Ethnic comparison of leading causes of injury deaths, 1996-1999

Maori (n=33)		NZ European/Other (n=130)		Pacific peoples (n=1)	
Cause	%	Cause	%	Cause	%
Motor vehicle crashes on public road	30	Suicide	38	Motor vehicle crashes on public road	100
Suicide	30	Falls	25		
Unintentional poisoning	9	Motor vehicle crashes on public road	20		

3.2.1.3 Comparison by Ward

The Ward comparison in figure 12 shows that Welcome Bay Ward had the highest rate of injury death, while Otumoetai-Bethlehem Ward had the lowest rate.

Figure 12: Age-standardised injury death rates by Ward for Tauranga District, 1993-1999

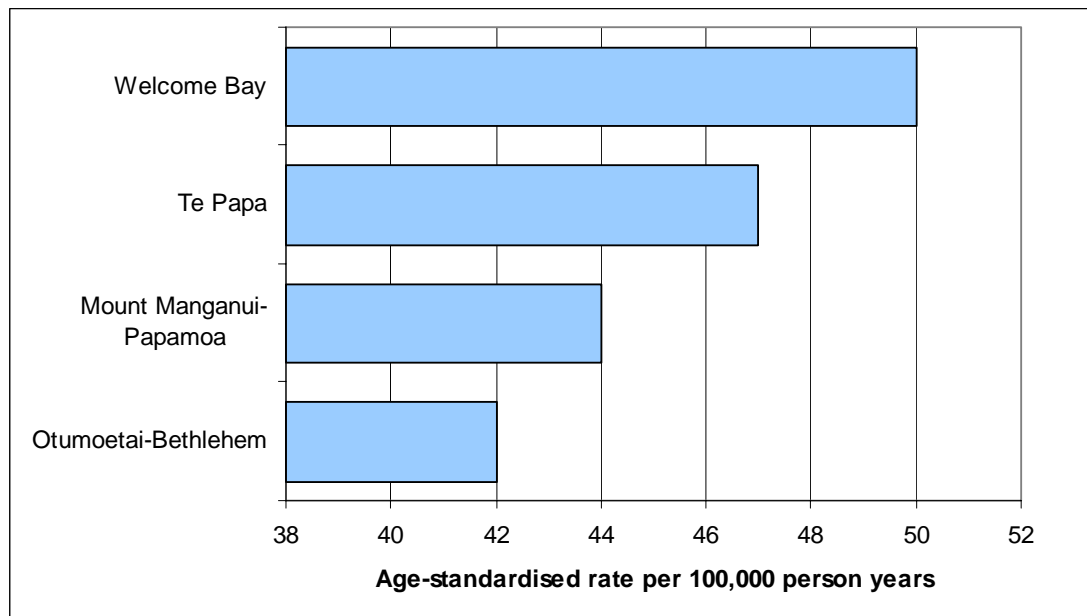
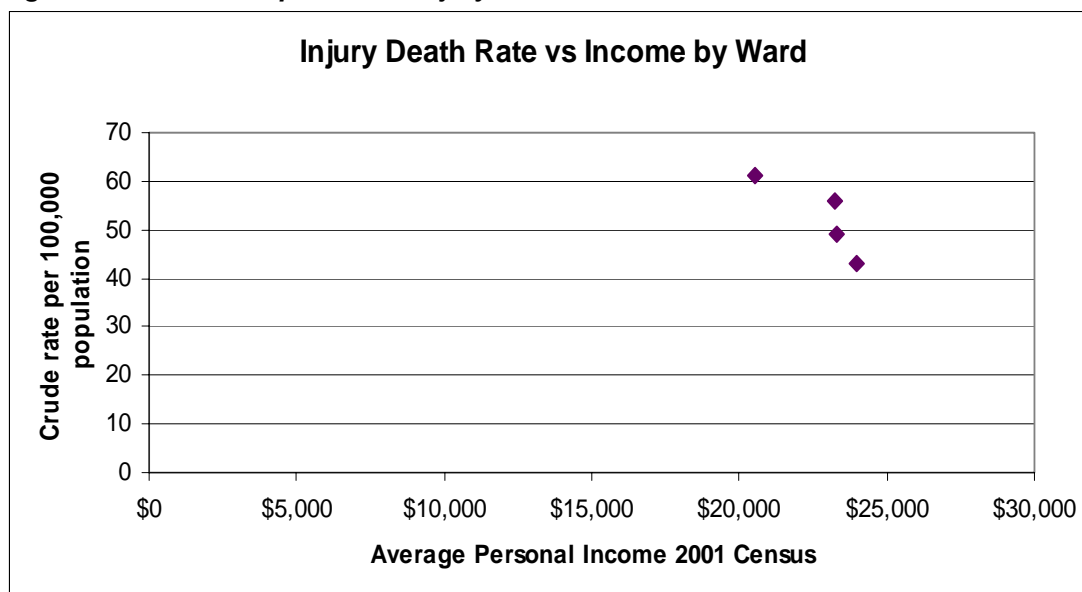


Figure 13 shows a plot of the crude injury deaths rate for each Ward, graphed against the average personal income for each Ward. The graph shows that the crude injury death rate decreased as the average personal income increased. However the plot should be interpreted with caution, as there are only four points in the graph.

Figure 13: Relationship between injury death rate and income on a Ward Basis

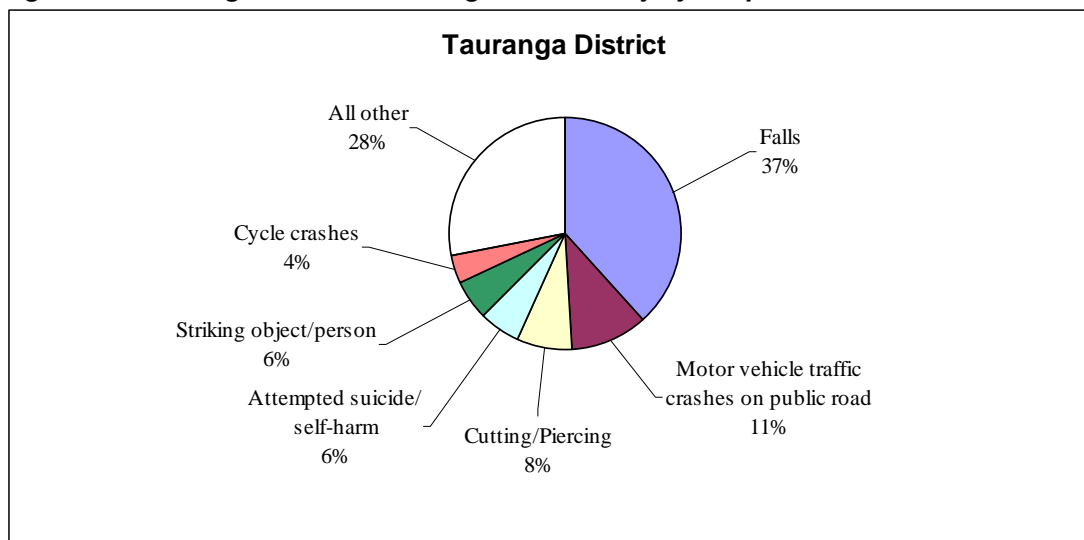


3.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 11,780 residents of Tauranga District were hospitalised for injury. The crude injury hospitalisation rate during this period was 1,293 injury hospitalisations per 100,000 person years. Males accounted for over half (57%) of the injury hospitalisations.

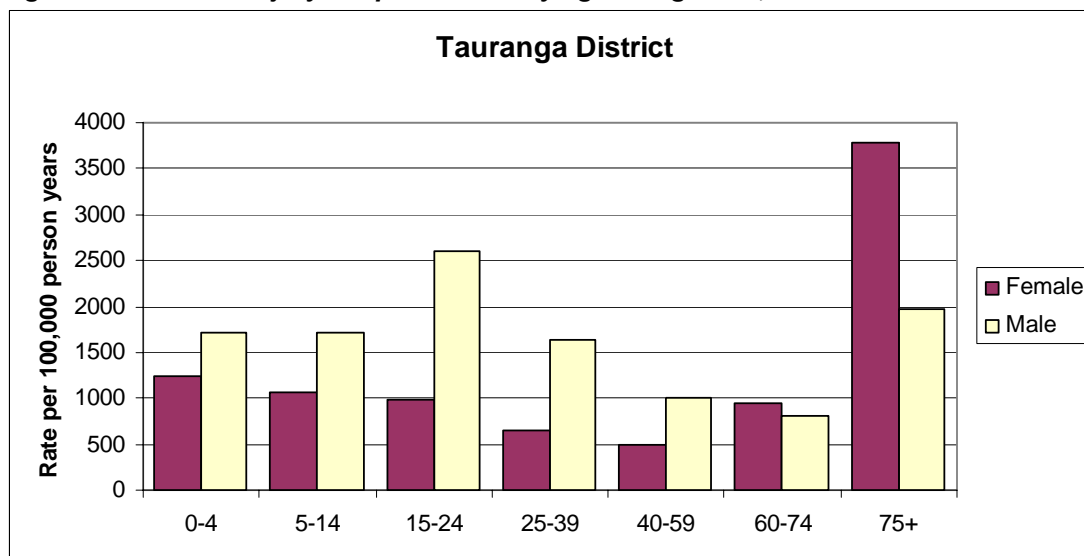
Figure 14 shows that the leading cause of injury hospitalisation was falls (37%). The other leading causes of injury were motor vehicle traffic crashes on a public road (11%); cutting and piercing (8%); attempted suicide/deliberate self-harm (6%); striking an object or person (6%); and cycle crashes (4%).

Figure 14: Tauranga District - Leading causes of injury hospitalisations 1993-2003



As shown by Figure 15, for females, the 75+ age group had the highest rates (3,788 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 0-4 years (1,251 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rates (2,596 hospitalisations per 100,000 person years) of injury hospitalisation, followed by adults aged 75+ years (1,964 hospitalisations per 100,000 person years). Males had higher rates of injury across all age groups below the age of 60.

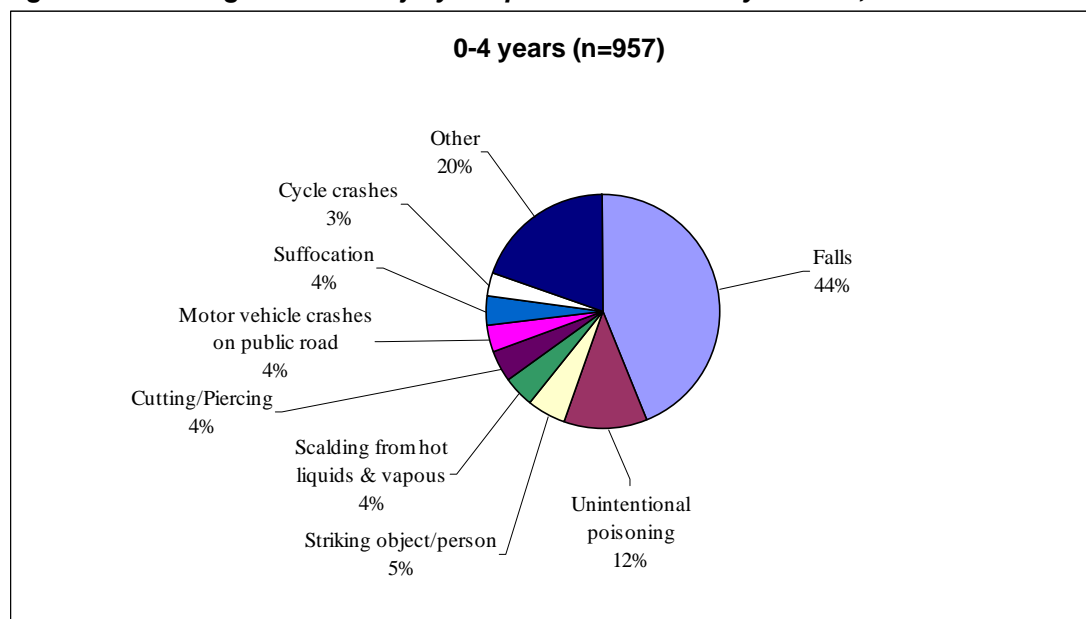
Figure 15: Rates of injury hospitalisation by age and gender, 1993-2003



3.2.2.1 Leading causes of injury hospitalisation by age group

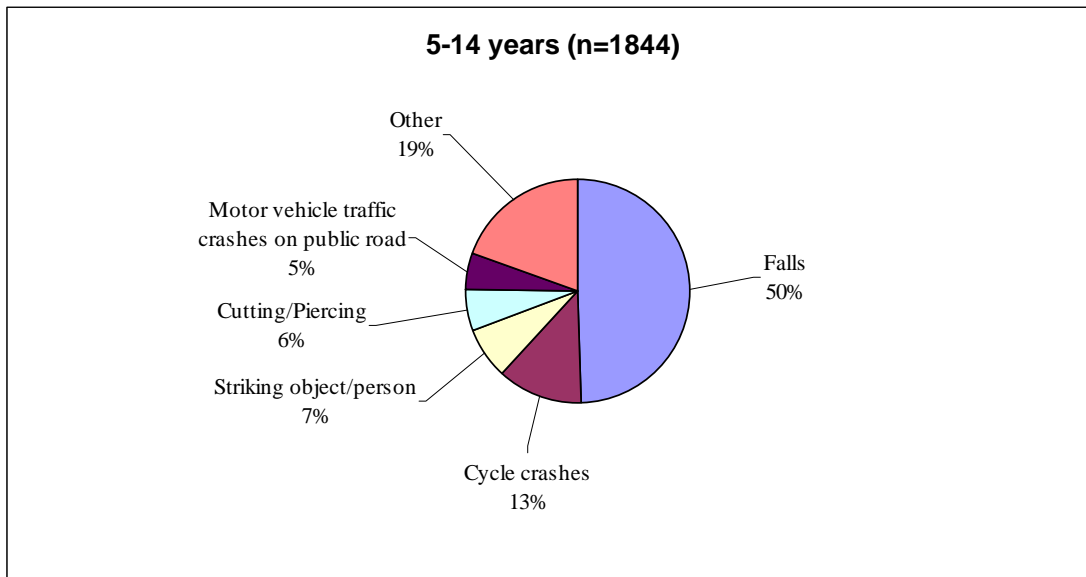
Figure 16 shows that for 0-4 year olds, falls were the leading cause of injury hospitalisation, accounting for 44%. The other leading causes of injury were unintentional poisoning (12%); striking an object or person (5%); scalding from hot liquids and vapours (4%); cutting and piercing (4%); motor vehicle crashes on a public road (4%); suffocation (4%); and cycle crashes (3%).

Figure 16: Leading causes of injury hospitalisation for 0-4 year olds, 1993-2003



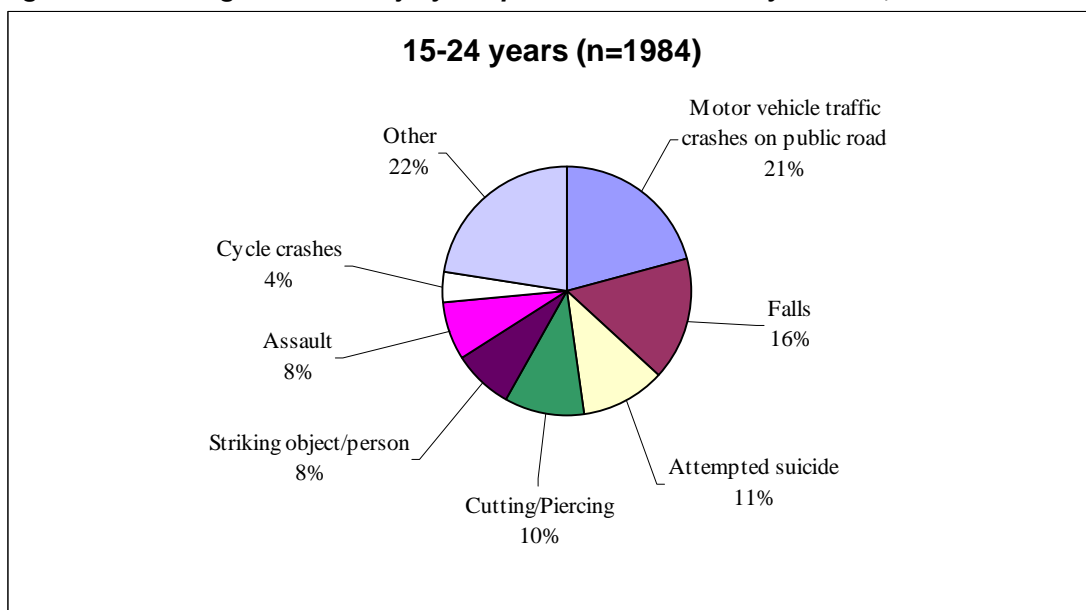
For 5-14 year olds, falls accounted for half (50%) of the injury hospitalisations (figure 17). The other leading causes were cycle crashes (13%); striking an object or person (7%); cutting and piercing (6%); and motor vehicle crashes on a public road (5%).

Figure 17: Leading causes of injury hospitalisation for 5-14 year olds, 1993-2003



For 15-24 year olds, motor vehicle crashes on a public road were the leading cause of injury hospitalisation (21%), followed by falls (16%; figure 18). The other leading causes were attempted suicide (11%); cutting and piercing (10%); striking a person or object (8%); assault (8%); and cycle crashes (4%).

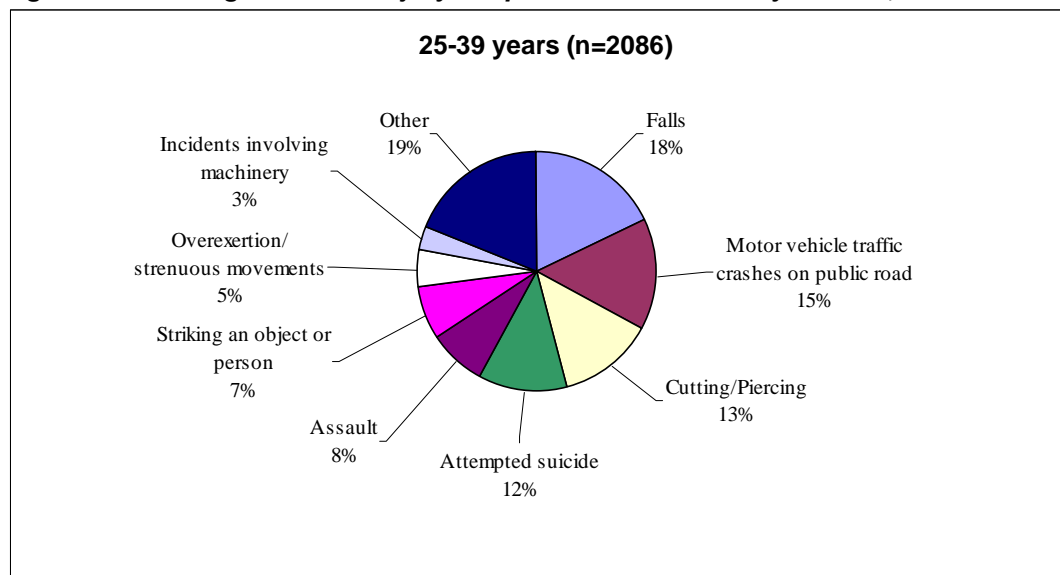
Figure 18: Leading causes of injury hospitalisation for 15-24 year olds, 1993-2003



For 25-39 year olds, falls (18%) were the leading cause of injury hospitalisation (Figure 19). The other leading causes were motor vehicle crashes on a public road (15%); cutting and piercing (13%); attempted suicide (12%); assault (8%); striking a

person or object (7%); overexertion or strenuous movements (5%); and incidents involving machinery (3%).

Figure 19: Leading causes of injury hospitalisation for 25-39 year olds, 1993-2003



For 40-59 year olds, falls (27%) were the leading cause of injury hospitalisation (figure 20). The other leading causes were motor vehicle crashes on a public road (13%); cutting and piercing (11%); attempted suicide (7%); striking an object or person (6%); and overexertion and strenuous movements (6%).

Figure 20: Leading causes of injury hospitalisation for 40-59 year olds, 1993-2003

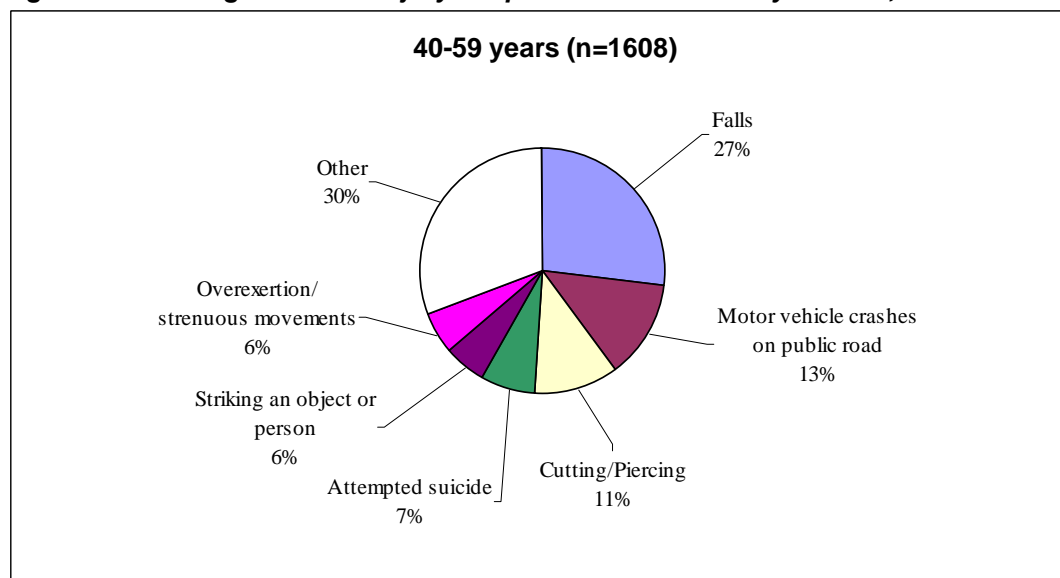
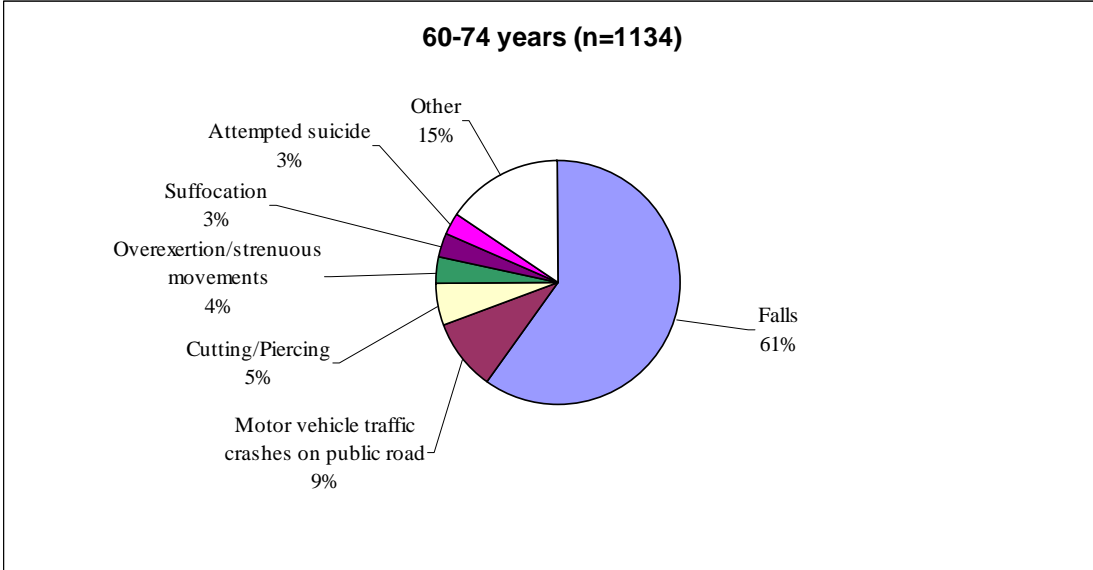


Figure 21 shows that for 60-74 year olds, falls were the leading cause of injury hospitalisation, accounting for 54% of the injuries. The other leading causes were cutting and piercing (9%); motor vehicle crashes on a public road (9%); overexertion

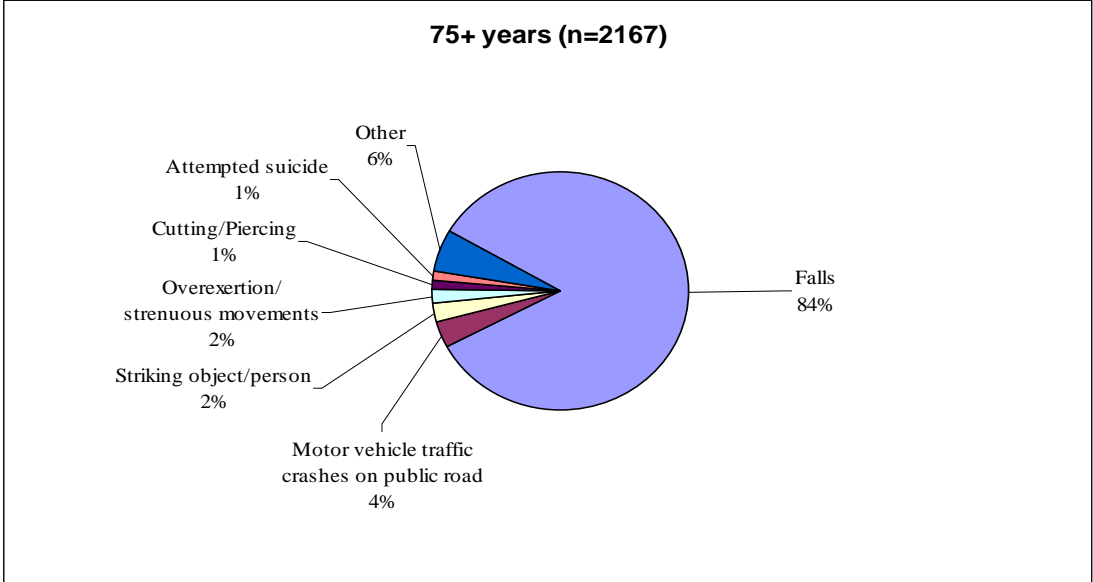
and strenuous movements (4%); incidents involving machinery (3%); and striking an object or person (3%).

Figure 21: Leading causes of injury hospitalisation for 60-74 year olds, 1993-2003



For 75+ year olds, falls (84%) were the leading cause of injury hospitalisation (figure 22). The other leading causes were motor vehicle crashes on a public road (4%); striking an object or person (2%); overexertion and strenuous movement (2%); cutting and piercing (1%); and attempted suicide (1%).

Figure 22: Leading causes of injury hospitalisation for 75+ year olds, 1993-2003



3.2.2.2 Ethnic comparison

For the period 2001-2003, Maori had the highest age-standardised rate of hospitalised injuries (1,273 per 100,000 person years), followed by New Zealand European/Other (1,062 per 100,000 person years), and Pacific peoples (691 per 100,000 person years). New Zealand European/Other accounted for the majority (82%) of the injury hospitalisations, Maori accounted for 17%, and Pacific peoples accounted for 1%.

Figure 23 gives a breakdown of injury hospitalisation rates by ethnicity and age group. The New Zealand European/Other ethnic group had the highest injury rate (3,093 hospitalisations per 100,000 person years) in the older age group (75+). For Maori, those aged 75+ years also had the highest rate (1,796 hospitalisations per 100,000 person years) of injury. Pacific peoples aged 25-39 years had the highest rate (1,100 hospitalisations per 100,000 person years) of injury hospitalisation.

Figure 23: Injury hospitalisation rates by ethnicity and age group for Tauranga District, 2001-2003

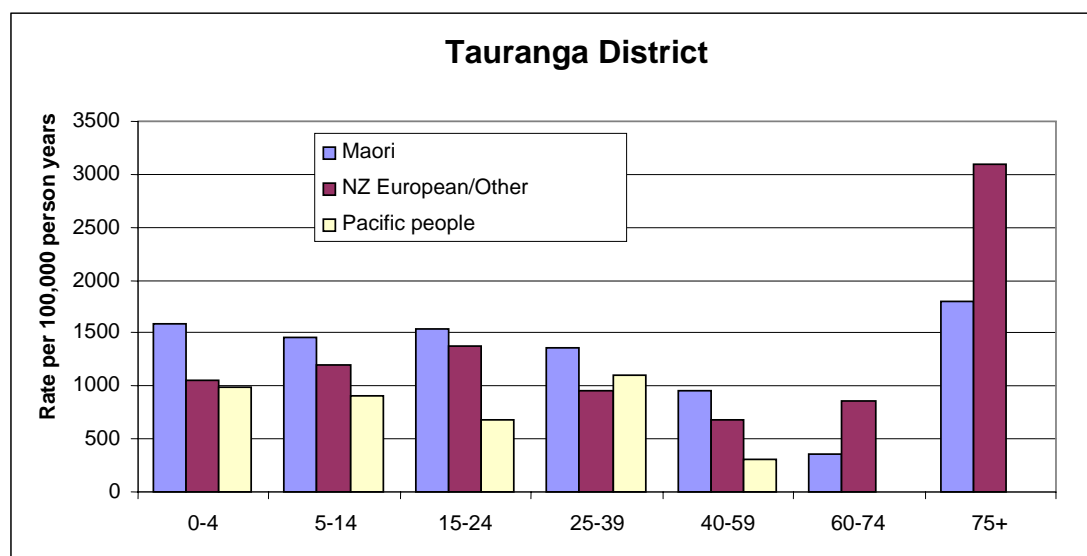


Table five shows that the leading causes of injury hospitalisation during the period 2001-2003 were similar across all ethnic groups. However, a higher percentage of New Zealand European/Other were injured by falls (45%) compared to the other ethnic groups. Pacific peoples had a higher proportion of injuries caused by motor vehicle crashes on a public road (15%), and attempted suicide (15%). Injuries caused by assault only featured as a leading cause of injury for Maori (8%).

Table 5: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=572)		NZ European/Other (n=2782)		Pacific peoples (n=34)	
Cause	%	Cause	%	Cause	%
Falls	28	Falls	45	Falls	21
Motor vehicle crashes on public road	10	Motor vehicle crashes on public road	8	Motor vehicle crashes on public road	15
Cutting/Piercing	10	Cutting/Piercing	8	Attempted suicide	15
Assault	8	Attempted suicide/self-harm	6	Cutting/Piercing	9
Striking an object or person	7	Striking an object or person	5	Striking an object or person	9

3.2.2.3 Comparison by Ward

The comparison of Ward rates in figure 24 shows that Welcome Bay Ward had the highest rate of injury hospitalisation, while Otumoetai-Bethlehem Ward had the lowest.

Figure 24: Age-standardised injury hospitalisation rates by Ward for Tauranga District, 1993-2003

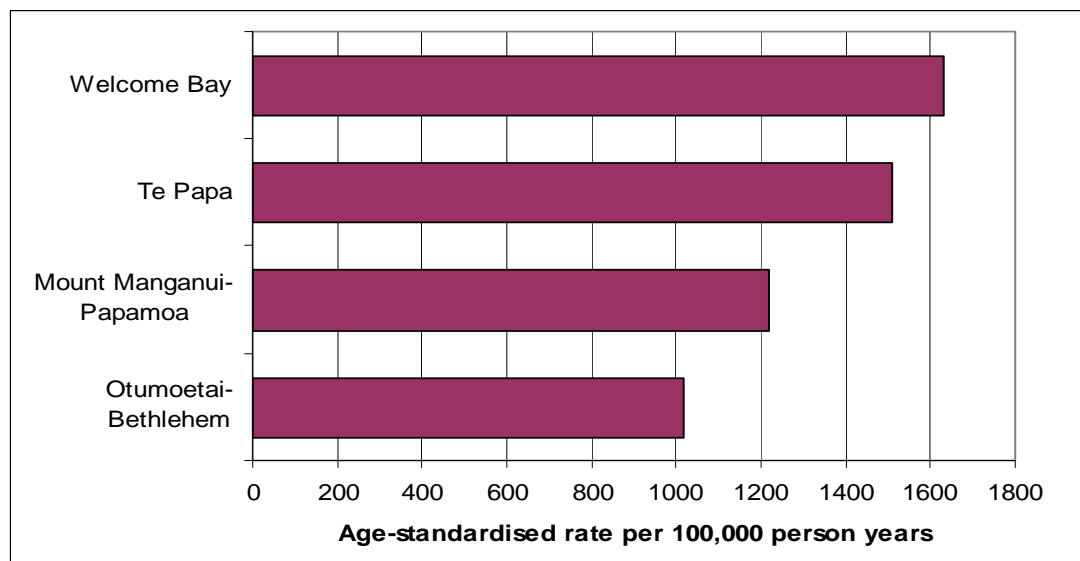
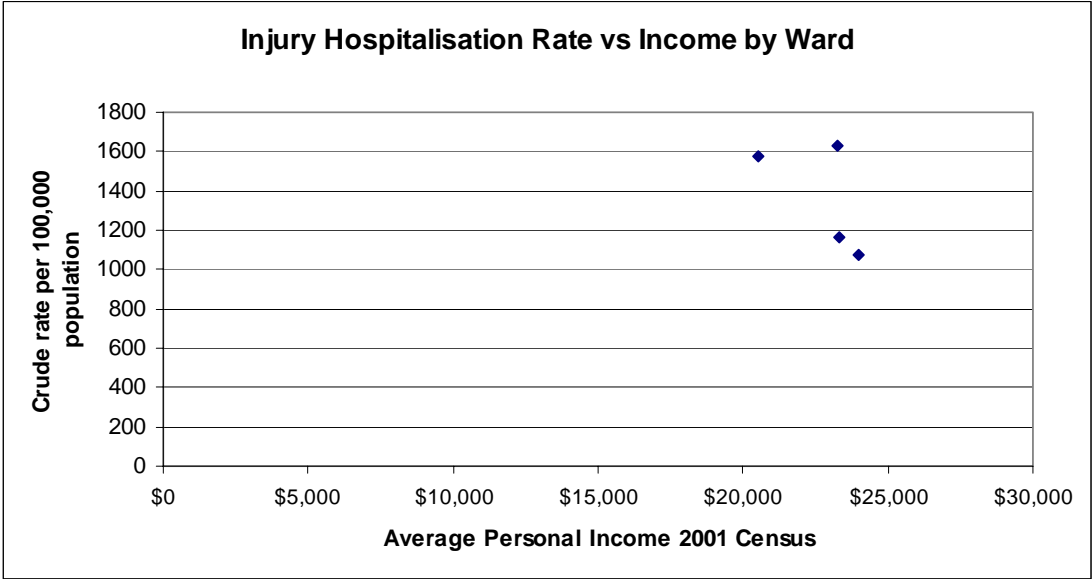


Figure 25 shows a plot of the crude injury hospitalisation rate for each Ward, graphed against the average personal income for each Ward. The graph shows that there was no obvious trend in the relationship between the crude injury hospitalisation rate and the average personal income. Note that the plot should be interpreted with caution, as there are only four points in the graph.

Figure 25: Relationship between injury hospitalisation rate and income on a Ward basis



4.0 Mount Maunganui-Papamoa Ward

4.1 Demographics

This section provides information relating to population, age, ethnicity and income for Mount Maunganui-Papamoa Ward.

Table 6: Mount Maunganui-Papamoa Ward- Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	5499	18	4572	18	3159	16
NZ European/Other	26721	86	21750	87	16740	87
Pacific peoples	555	2	447	2	216	1
Total Persons [~]	30987	106	25011	107	19302	104

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

[~] Total percentage may not add up to 100% as people may belong to more than one ethnic group.

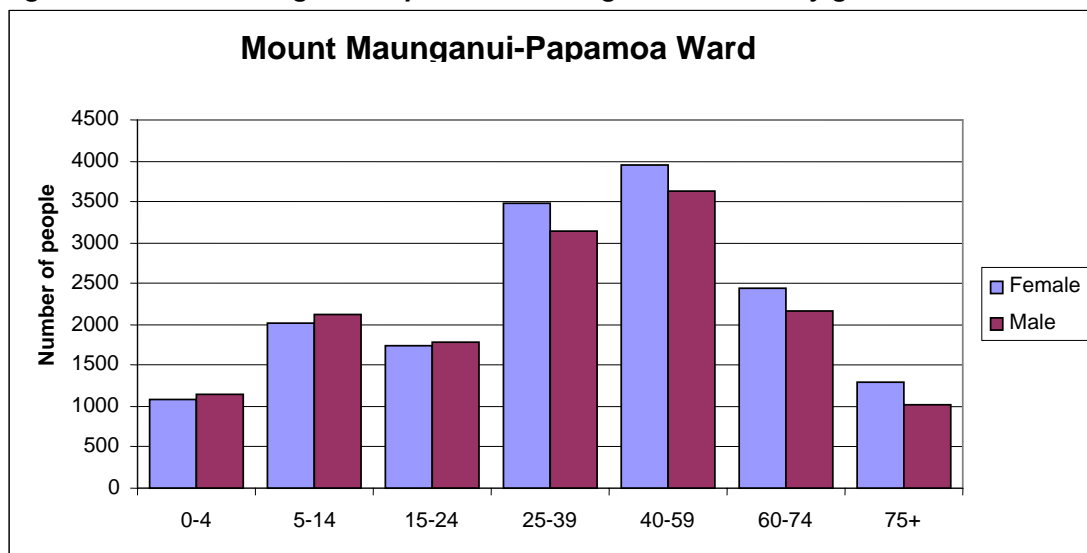
Table 7: Mount Maunganui-Papamoa Ward - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	7	7	8
5-14	13	14	13
15-24	11	13	14
25-39	21	24	23
40-59	24	23	21
60-74	15	15	15
75+	8	5	5

Table 8: Mount Maunganui-Papamoa Ward- Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > \$30,000	4392	51
Personal incomes > \$30,000	5889	24
Average per capita personal income	\$23,295	

Figure 26: Mount Maunganui-Papamoa Ward- Age distribution by gender in 2001 Census



4.2 Injury statistics

4.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 86 residents of the Mount Maunganui-Papamoa Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 49 injury deaths per 100,000 person years. Males accounted for 69% of the fatalities.

As can be seen in figure 27, suicide was the leading cause of injury death (34%). The other leading causes of injury death were motor vehicle crashes on a public road (30%); falls (16%); drowning (4%); non-road transport crashes (4%); and suffocation (4%).

Figure 27: Mount Maunganui-Papamoa Ward- Leading causes of injury mortality 1993-1999

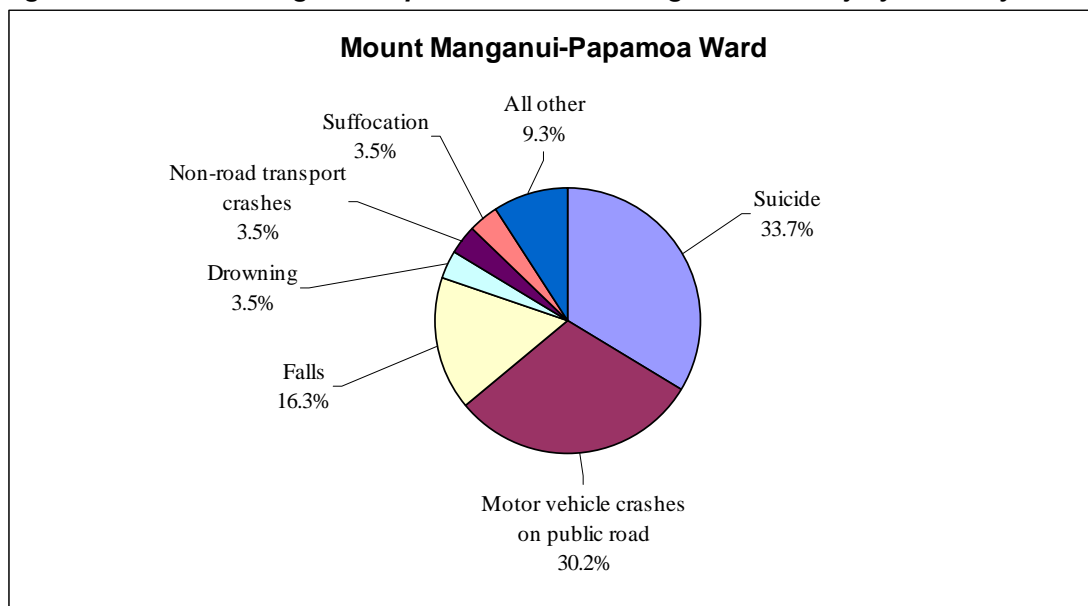
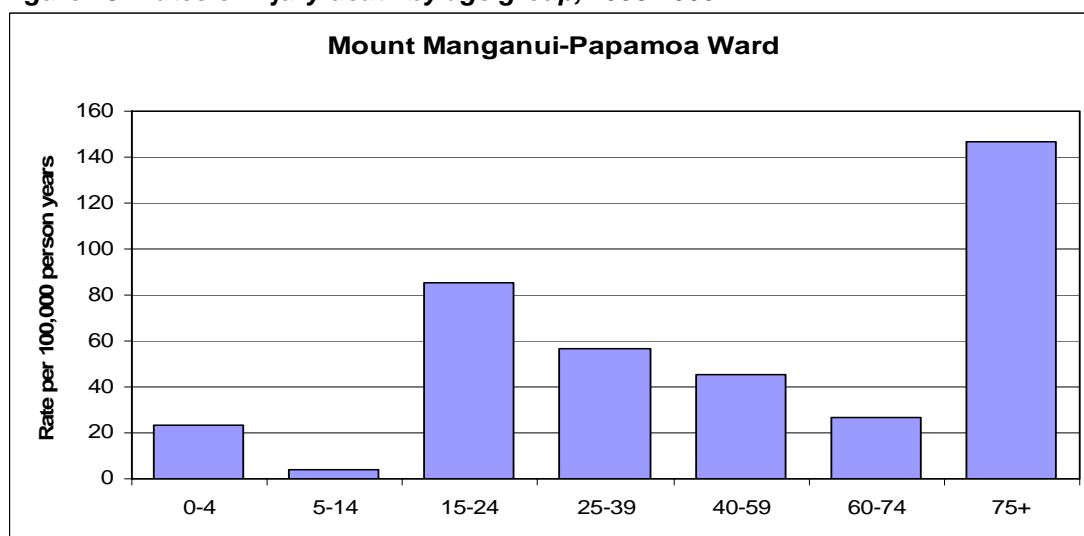


Figure 28 shows that the 75+ age group had the highest rate (147 deaths per 100,000 person years) of injury death, followed by young people aged 15-24 years (86 deaths per 100,000 person years).

Figure 28: Rates of injury death by age group, 1993-1999



Of the 46 people who died from injury between 1996 and 1999, 34 (74%) were of New Zealand European/Other ethnicity, 11 (24%) were Maori, and one (2%) was Pacific peoples.

4.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 3488 residents of the Mount Maunganui-Papamoa Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1166 injury hospitalisations per 100,000 person years. Males accounted for 61% of the hospitalisations.

Figure 29 shows that falls accounted for the greatest number of injury hospitalisations (38%). The other leading causes of injury were motor vehicle traffic crashes on a public road (12%); cutting and piercing (8%); striking an object or person (6%); attempted suicide/deliberate self-harm (6%); and assault (4%).

Figure 29: Mount Maunganui-Papamoa Ward- Leading causes of injury hospitalisations 1993-2003

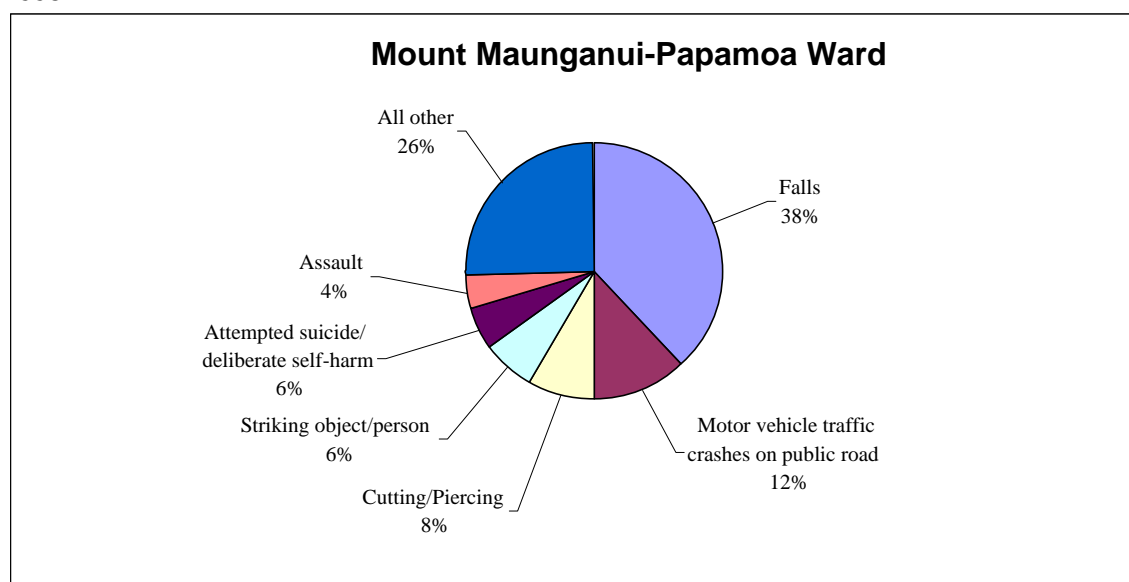


Figure 30 shows that for females, those aged 75+ had the highest rate (2,976 hospitalisations per 100,000 person years) of injury hospitalisation, followed by pre-school children aged 0-4 years (1,051 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rate (2,820 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (2,356 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 60.

Figure 30: Rates of injury hospitalisation by age and gender, 1993-2003

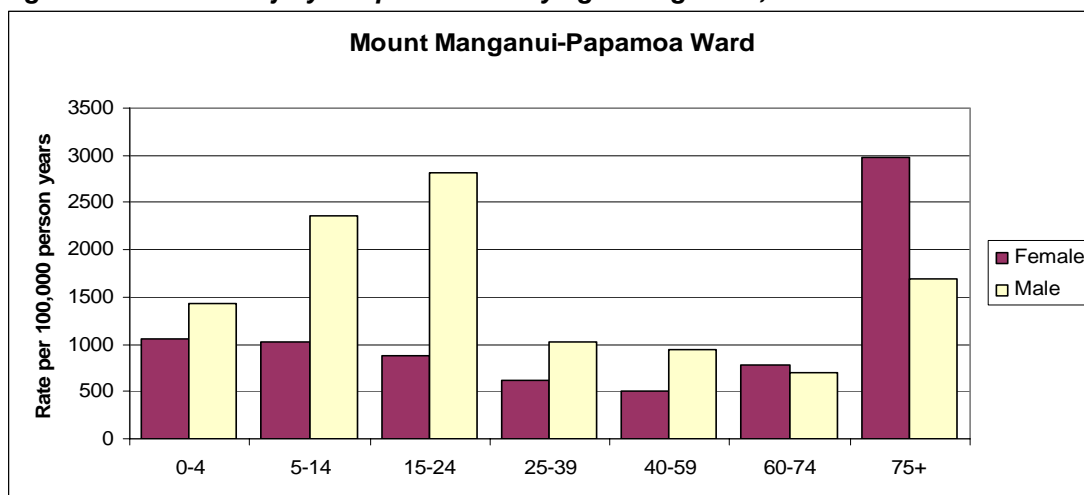


Figure 31 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (1,023 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (943 injury hospitalisations per 100,000 person years) and Pacific peoples (837 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (80%) of the injuries.

Figure 31: Injury hospitalisation rates by ethnicity for Mount Manganui-Papamoa Ward, 2001-2003

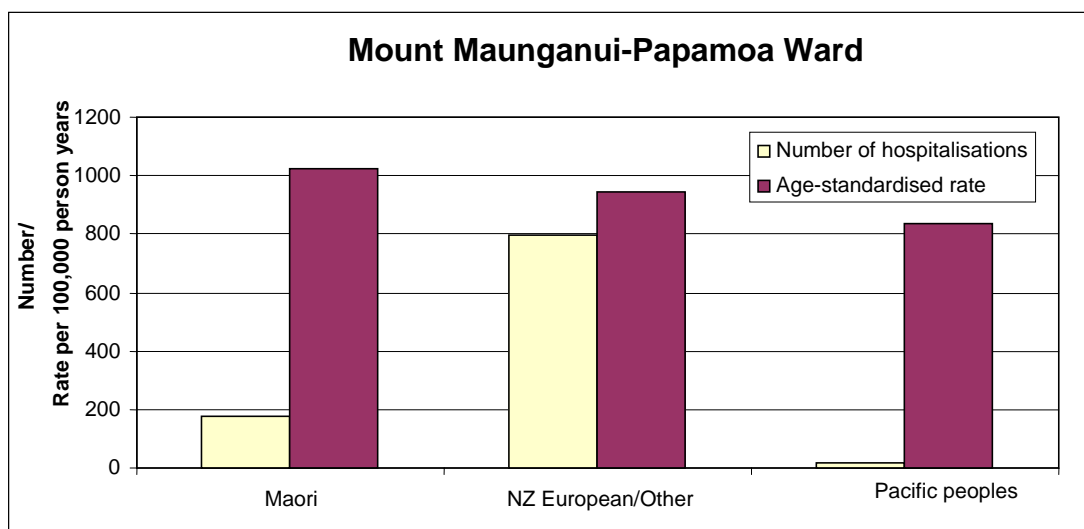


Table nine shows that for the period of 2001-2003, falls were the leading cause of injury hospitalisation for all ethnic groups, however New Zealand European/Other had the highest percentage (43%) of hospitalised falls. A higher proportion of Pacific peoples were hospitalised as a result of attempted suicide (25%). Maori had a higher percentage of injuries caused by assault (11%).

Table 9: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=177)		NZ European/Other (n=796)		Pacific peoples (n=16)	
Cause	%	Cause	%	Cause	%
Falls	29	Falls	43	Falls	50
Cutting/Piercing	12	Cutting/Piercing	10	Attempted suicide	25
Assault	11	Motor vehicle crashes on public road	8	Cutting/Piercing	13
Motor vehicle crashes on public road	11	Striking an object or person	6	Motor vehicle crashes on public road	13
Vehicle crashes off public road	5	Attempted suicide	5	Drowning	6

5.0 Otumoetai-Bethlehem Ward

5.1 Demographics

This section provides information relating to population, age, ethnicity and income for Otumoetai-Bethlehem Ward.

Table 10: Otumoetai-Bethlehem Ward - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	3087	11	2607	11	1971	9
NZ European/Other	25017	91	22743	93	20829	93
Pacific peoples	303	1	309	1	147	1
Total Persons [≈]	27519	103	24534	105	22380	103

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

[≈] Total percentage may not add up to 100% as people may belong to more than one ethnic group.

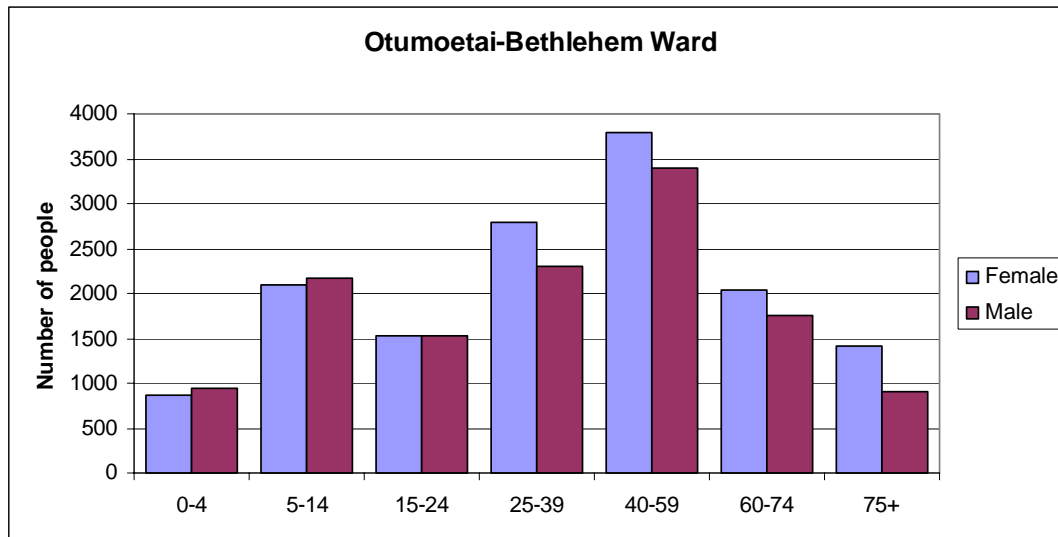
Table 11: Otumoetai-Bethlehem Ward - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	7	6	6
5-14	15	15	14
15-24	11	12	13
25-39	18	19	19
40-59	26	25	24
60-74	14	15	16
75+	8	8	7

Table 12: Otumoetai-Bethlehem Ward - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > \$30,000	4308	56
Personal incomes > \$30,000	5397	25
Average per capita personal income	\$23,970	

Figure 32: Otumoetai-Bethlehem Ward - Age distribution by gender in 2001 Census



5.2 Injury statistics

5.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 74 residents of the Otumoetai-Bethlehem Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 43 injury deaths per 100,000 person years. Males accounted for 64% of the fatalities.

As can be seen in figure 33, suicide was the leading cause of injury death (35%). The other leading causes of injury death were motor vehicle crashes on a public road (26%); falls (18%); and drowning (5%).

Figure 33: Otumoetai-Bethlehem Ward - Leading causes of injury mortality 1993-1999

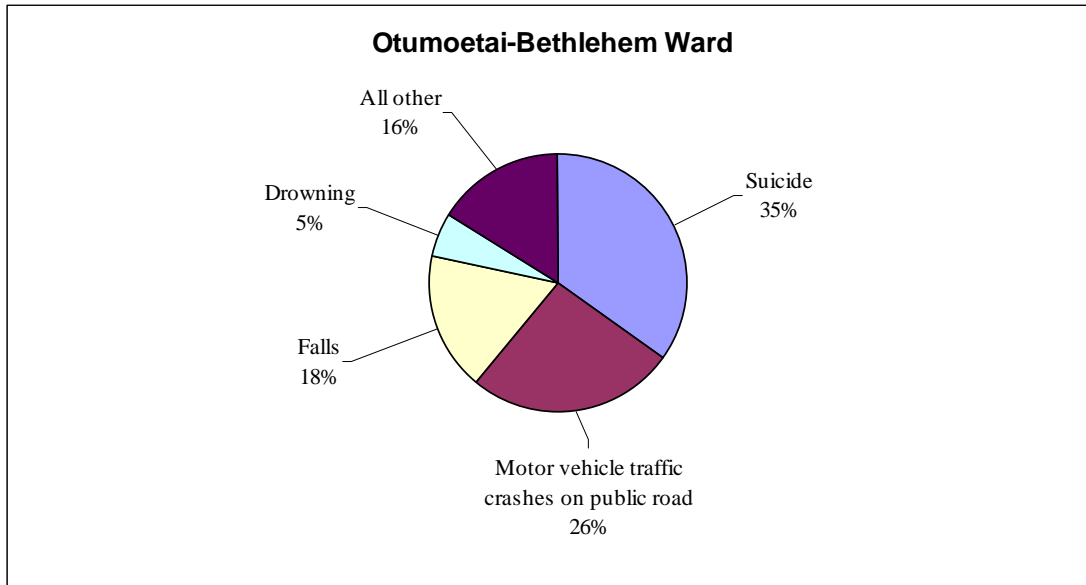
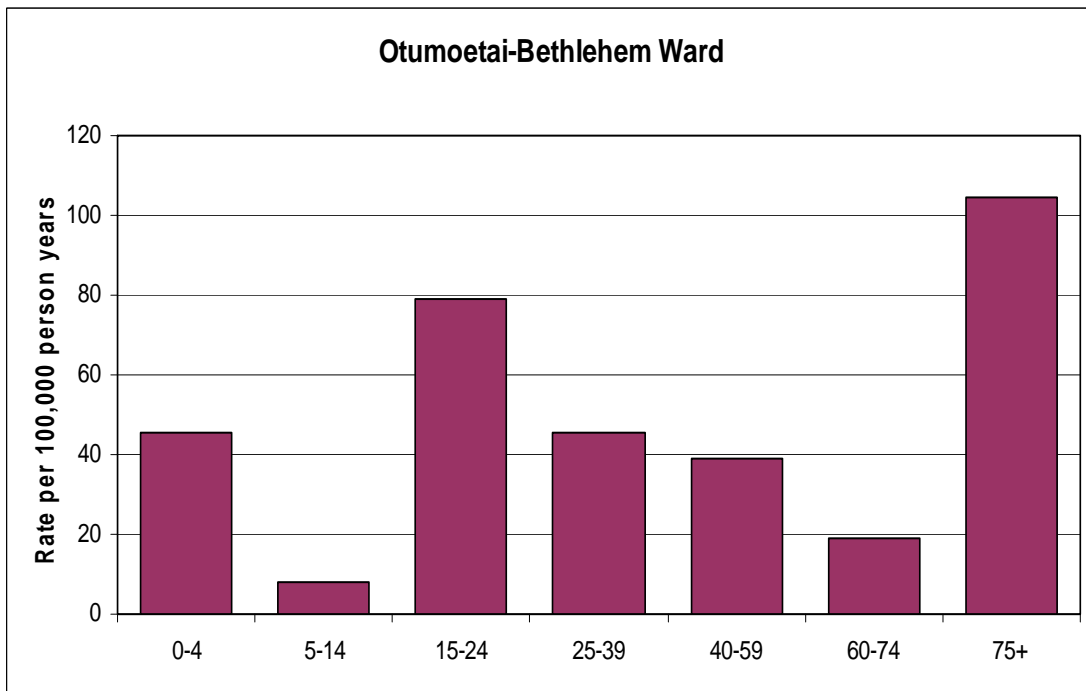


Figure 34 shows that the 75+ age group had the highest rate (105 deaths per 100,000 person years) of injury death, followed by age group of 15-24 years (79 deaths per 100,000 person years).

Figure 34: Rates of injury death by age group, 1993-1999



Of the 43 people who died from injury between 1996 and 1999, 36 (84%) were of New Zealand European/Other, and seven were Maori (16%).

5.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 3032 residents of the Otumoetai-Bethlehem Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1,072 injury hospitalisations per 100,000 person years. Males accounted for 53% of the hospitalisations.

Figure 35 shows that falls accounted for the greatest number of injury hospitalisations (48%). The other leading causes of injury were motor vehicle traffic crashes on a public road (9%); cutting and piercing (7%); attempted suicide/deliberate self-harm (6%); striking an object or person (5%); and cycle crashes (4%).

Figure 35: Otumoetai-Bethlehem Ward - Leading causes of injury hospitalisations 1993-2003

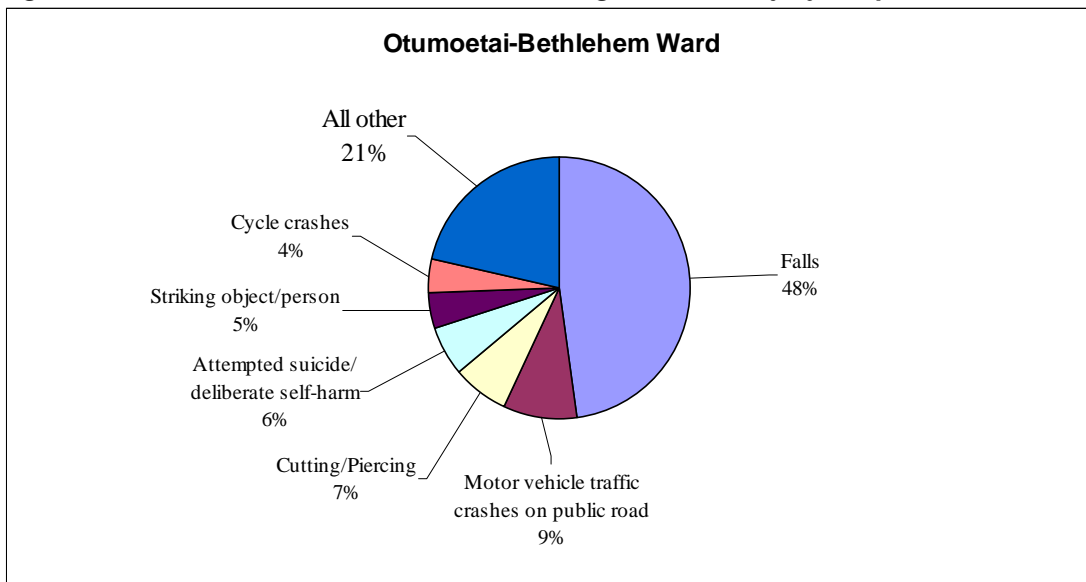


Figure 36 shows that for females, those aged 75+ had the highest rate (3,688 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 0-4 years (960 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rate (1,979 hospitalisations per 100,000 person years) of injury hospitalisation, followed by adults aged 75+ years (1,968 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 60.

Figure 36: Rates of injury hospitalisation by age and gender, 1993-2003

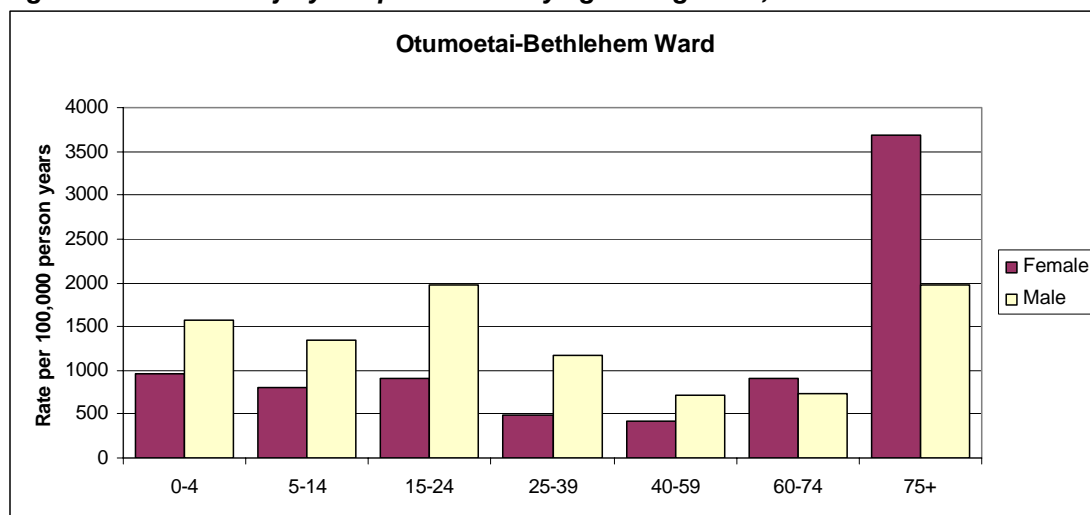


Figure 37 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (899 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (833 injury hospitalisations per 100,000 person years) and Pacific peoples (168 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (89%) of the injuries.

Figure 37: Injury hospitalisation rates by ethnicity for Otumoetai-Bethlehem Ward, 2001-2003

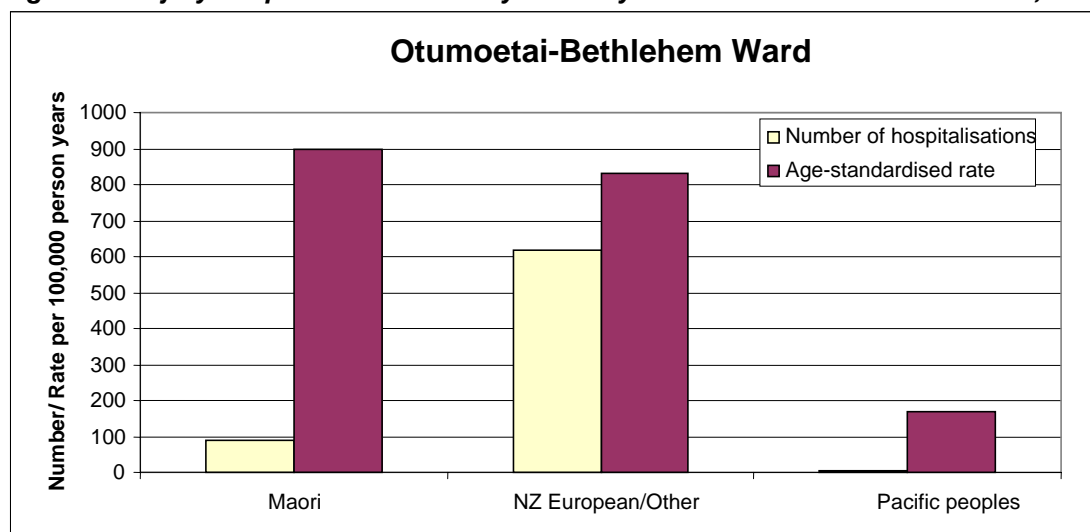


Table 13 shows that for the period of 2001-2003, falls were the leading cause of injury hospitalisations for all ethnic groups. A higher proportion of New Zealand European/Other were injured as a result of motor vehicle crashes on a public road (8%). Seven percent of injury hospitalisations for Maori were due to striking an object or person.

Table 13: Ethnic comparison of leading causes of injury hospitalisations, 2001-2003

Maori (n=87)		NZ European/Other (n=723)		Pacific peoples (n=2)	
Cause	%	Cause	%	Cause	%
Falls	36	Falls	50	Falls	50
Cutting/Piercing	8	Motor vehicle crashes on public road	8	Others/unspecified	50
Striking an object or person	7	Cutting/Piercing	7		
Cycle crashes	6	Attempted suicide	7		
Attempted suicide	6	Cycle crashes	5		

6.0 Te Papa Ward

6.1 Demographics

This section provides information relating to population, age, ethnicity and income for Te Papa Ward.

Table 14: Te Papa Ward - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	2895	15	2751	16	2145	14
NZ European/Other	15903	84	15087	88	13944	89
Pacific peoples	366	2	279	2	138	1
Total Persons [≈]	18861	101	17145	106	15699	104

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

[≈] Total percentage may not add up to 100% as people may belong to more than one ethnic group.

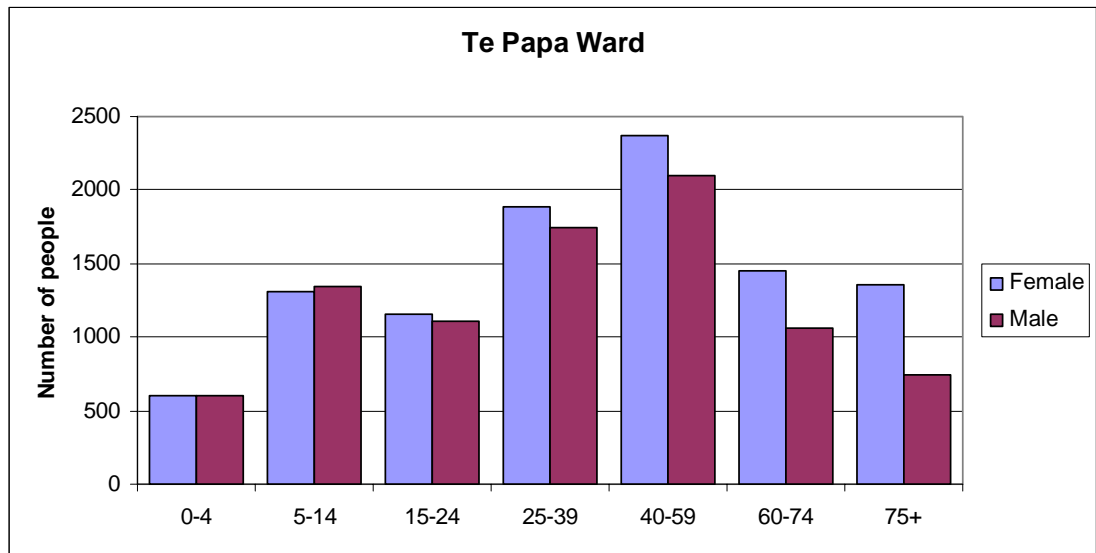
Table 15: Te Papa Ward - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	6	7	7
5-14	14	13	13
15-24	12	13	15
25-39	19	20	19
40-59	24	21	21
60-74	13	15	17
75+	11	11	10

Table 16: Te Papa Ward - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > \$30,000	1878	44
Personal incomes > \$30,000	2340	17
Average per capita personal income	\$20,537	

Figure 38: Te Papa Ward - Age distribution by gender in 2001 Census



6.2 Injury statistics

6.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 73 residents of the Te Papa Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 61 injury deaths per 100,000 person years. Males accounted for 66% of the fatalities.

As can be seen in figure 39, suicide was the leading cause of injury death (36%). The other leading causes of injury death were falls (19%); motor vehicle crashes on a public road (18%); drowning (7%); and homicide (5%).

Figure 39: Te Papa Ward - Leading causes of injury mortality 1993-1999

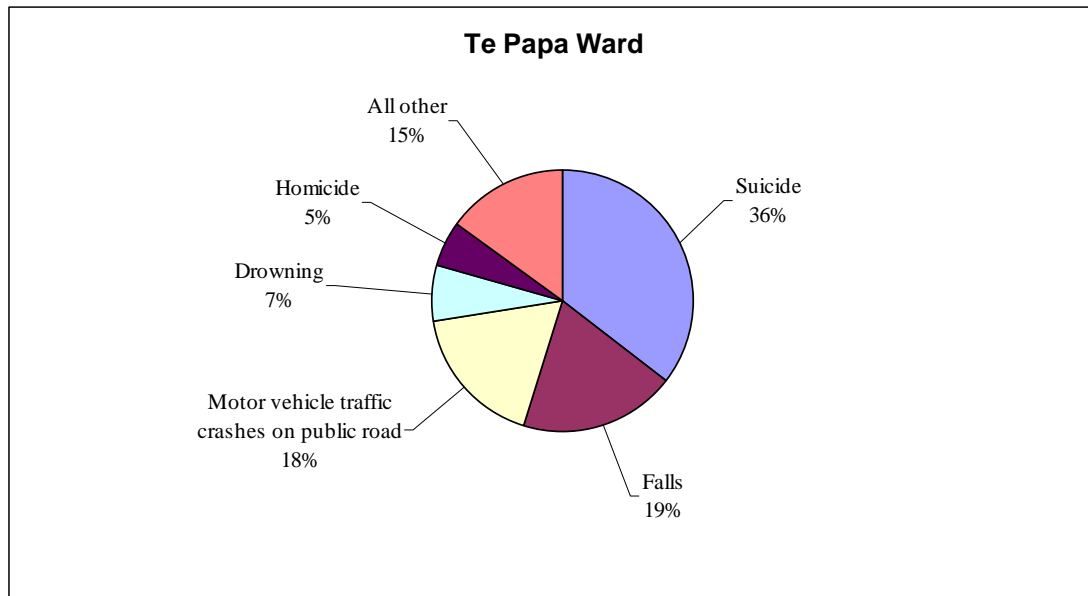
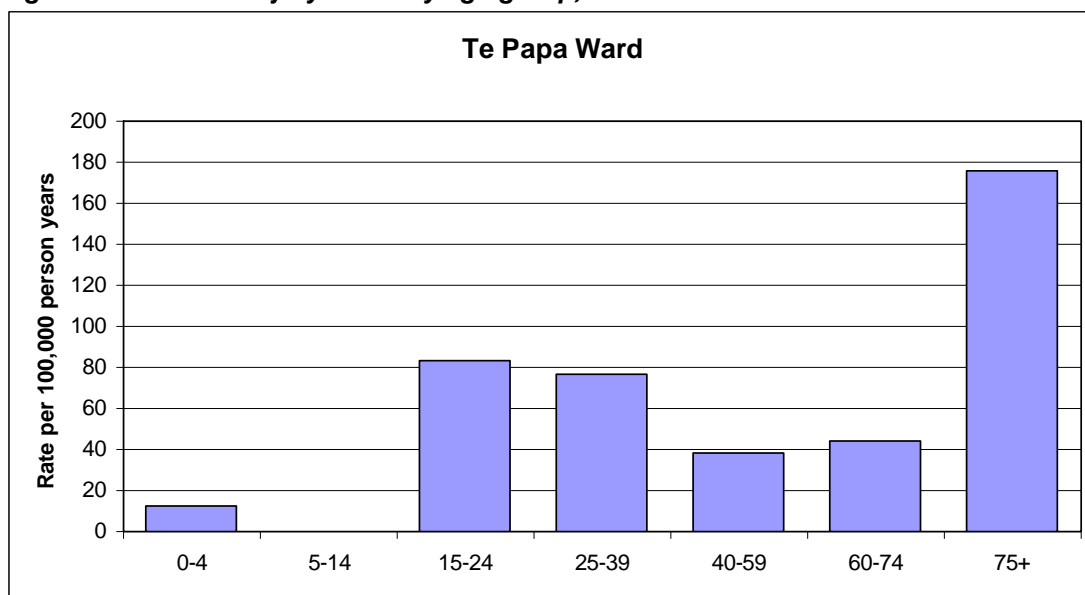


Figure 40 shows that the 75+ age group had the highest rate (176 deaths per 100,000 person years) of injury death, followed by young adults aged 15-24 years (83 deaths per 100,000 person years).

Figure 40: Rates of injury death by age group, 1993-1999



Of the 45 people who died from injury between 1996 and 1999, 35 (78%) were of New Zealand European/Other, and 10 (22%) were Maori.

6.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 3093 residents of the Te Papa Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1,580 injury hospitalisations per 100,000 person years. Males accounted for 53% of the hospitalisations.

Figure 41 shows that falls accounted for 45% of injury hospitalisations. The other leading causes of injury were motor vehicle traffic crashes on a public road (10%); cutting and piercing (6%); attempted suicide (6%); striking an object or person (5%); assault (5%); and cycle crashes (4%).

Figure 41: Te Papa Ward - Leading causes of injury hospitalisations 1993-2003

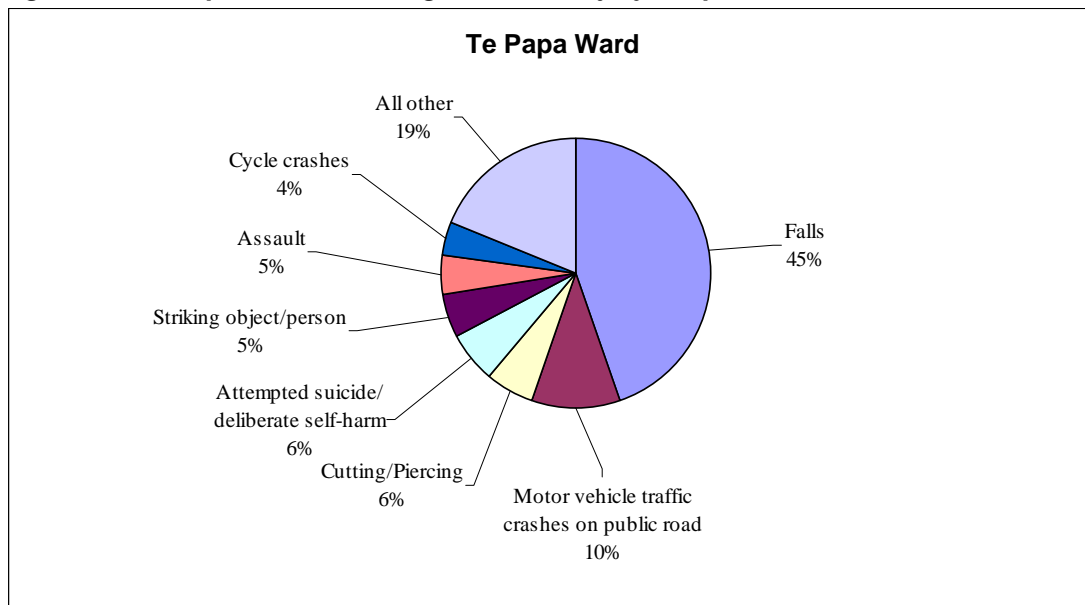


Figure 42 shows that for females, those aged 75+ had the highest rate (4,043 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 0-4 years (1,793 hospitalisations per 100,000 person years). For males, the age group of 15-24 years had the highest rate of injury hospitalisation (2,862 hospitalisations per 100,000 person years), followed by young people aged 5-14 years (2,198 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 60.

Figure 42: Rates of injury hospitalisation by age and gender, 1993-2001

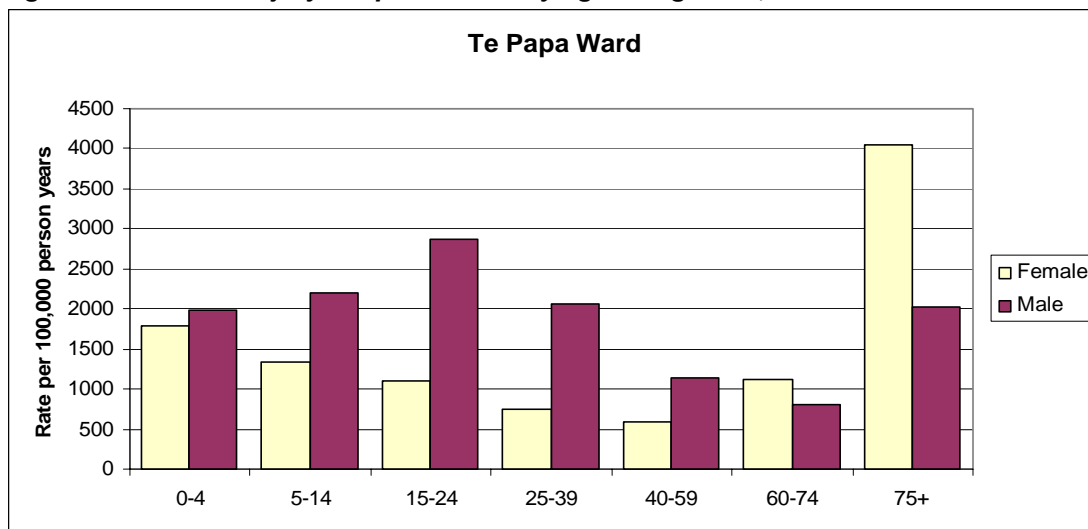


Figure 43 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (1,599 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (1,153 injury hospitalisations per 100,000 person years) and Pacific peoples (924 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (79%) of the injuries.

Figure 43: Injury hospitalisation rates by ethnicity for Te Papa Ward, 2001-2003

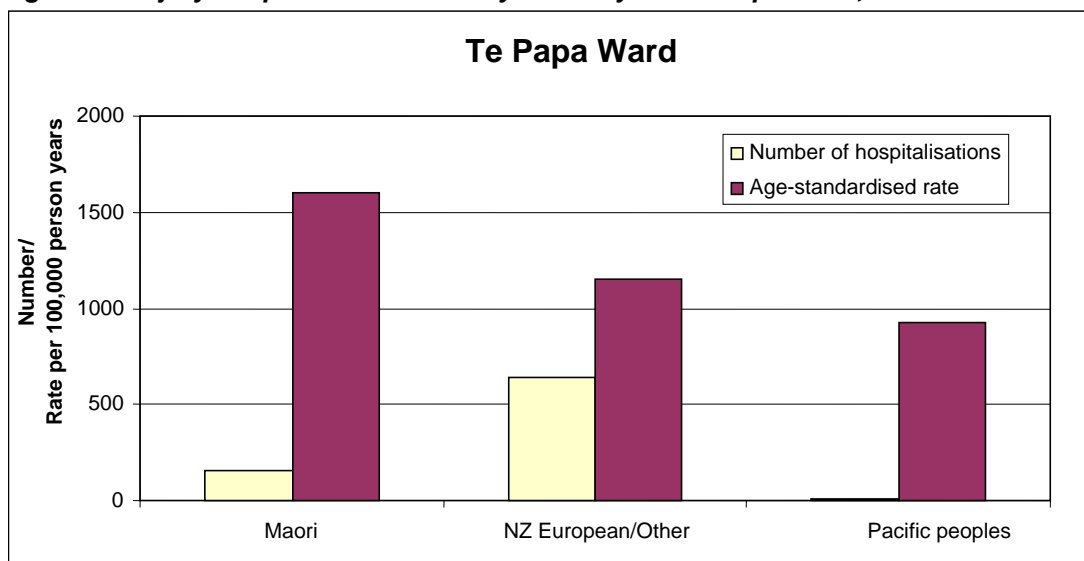


Table 17 shows that New Zealand European/Other had the highest proportion of hospitalised falls (48%) among ethnic groups during the period 2001-2003. Maori had a much higher proportion of motor vehicle crashes on a public road (12%) compared to the other ethnic groups.

Table 17: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=153)		NZ European/Other (n=637)		Pacific peoples (n=12)	
Cause	%	Cause	%	Cause	%
Falls	29	Falls	48	Vehicle crashes off public road	17
Motor vehicle crashes on public road	12	Motor vehicle crashes on public road	9	Cutting/Piercing	8
Assault	8	Attempted suicide	6	Dog Bite	8
Attempted suicide	7	Cutting/Piercing	5	Falls	8
Cutting/Piercing	7	Cycle crashes	5	Assault	8
Striking an object or person	7	Striking an object or person	4	Motor vehicle traffic crashes on public road	8

7.0 Welcome Bay Ward

7.1 Demographics

This section provides information relating to population, age, ethnicity and income for Welcome Bay Ward.

Table 18: Welcome Bay Ward - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	2631	19	2307	21	1638	18
NZ European/Other	11499	85	9525	86	7962	85
Pacific peoples	177	1	144	1	75	1
Total Persons [~]	13542	105	11091	108	9357	104

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

[~] Total percentage may not add up to 100% as people may belong to more than one ethnic group.

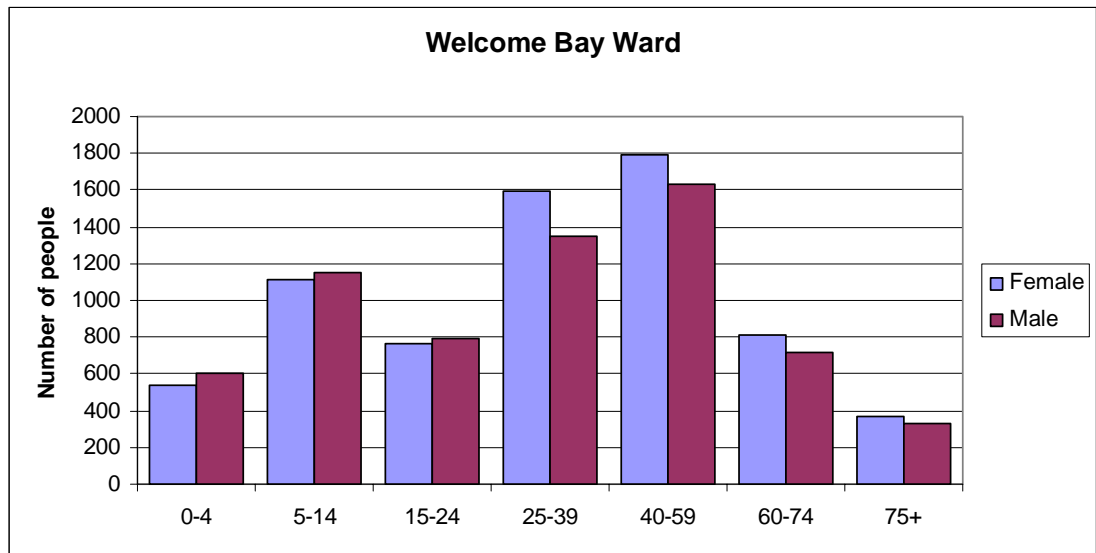
Table 19: Welcome Bay Ward - Age Composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	8	9	10
5-14	17	17	17
15-24	11	12	13
25-39	22	23	25
40-59	25	24	18
60-74	11	12	12
75+	5	4	4

Table 20: Welcome Bay Ward - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > \$30,000	2460	56
Personal incomes > \$30,000	3000	26
Average per capita personal income	\$23,239	

Figure 44: Welcome Bay Ward - Age distribution by gender in 2001 Census



7.2 Injury statistics

7.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 44 residents of the Welcome Bay Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 48 injury deaths per 100,000 person years. Males accounted for 76% of the fatalities.

As can be seen in figure 45, motor vehicle crashes on a public road were the leading cause of injury death (38%). The other leading causes of injury death were suicide (32%); falls (14%); and incidents involving machinery (5%).

Figure 45: Welcome Bay Ward - Leading causes of injury mortality 1993-1999

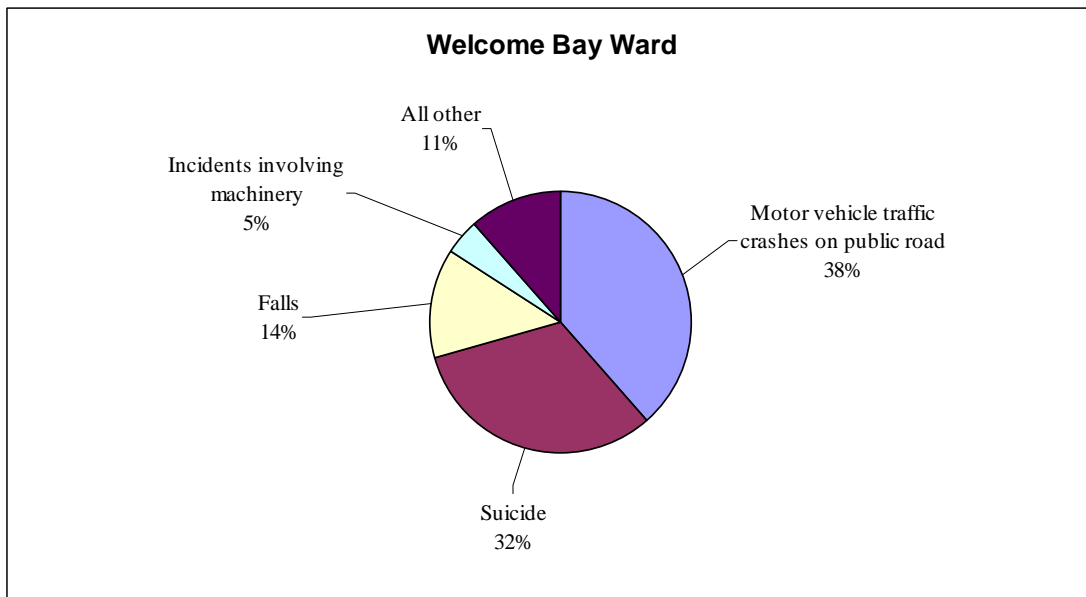
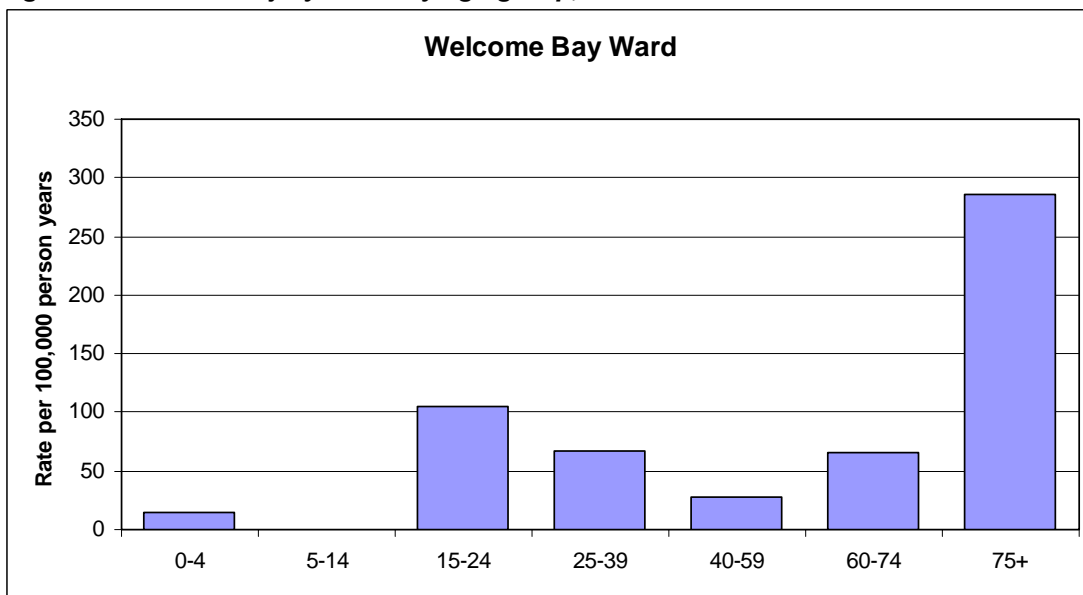


Figure 46 shows that the 75+ age group had the highest rate (286 deaths per 100,000 person years) of injury death, followed by young adults aged 15-24 years (105 deaths per 100,000 person years).

Figure 46: Rates of injury death by age group, 1993-1999



Of the 30 people who died from injury between 1996 and 1999, 25 (83%) were of New Zealand European/Other ethnicity, and five (17%) were Maori.

7.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 2167 residents of the Welcome Bay Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1,631 injury hospitalisations per 100,000 person years. Males accounted for 61% of the hospitalisations.

Figure 47 shows that falls accounted for approximately one-third of injury hospitalisations (37%). The other leading causes of injury were motor vehicle traffic crashes on a public road (11%); cutting and piercing (9%); striking an object or person (6%); attempted suicide/deliberate self-harm (6%); cycle crashes (4%); and overexertion and strenuous movements (3%).

Figure 47: Welcome Bay Ward - Leading causes of injury hospitalisations 1993-2003

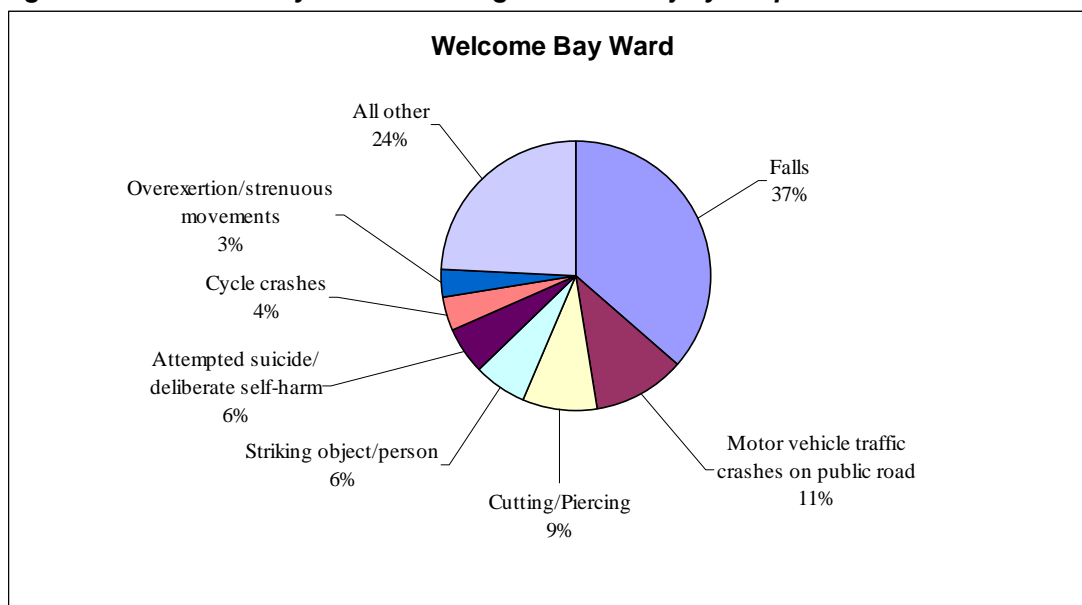


Figure 48 shows that for females, those aged 75+ had the highest rate (5,789 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 0-4 years (1,472 hospitalisations per 100,000 person years). For males, the age group of 15-24 years had the highest rate of injury hospitalisation (3,322 hospitalisations per 100,000 person years), followed by adults aged 75+ years (2,583 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 75.

Figure 48: Rates of injury hospitalisation by age and gender, 1993-2001

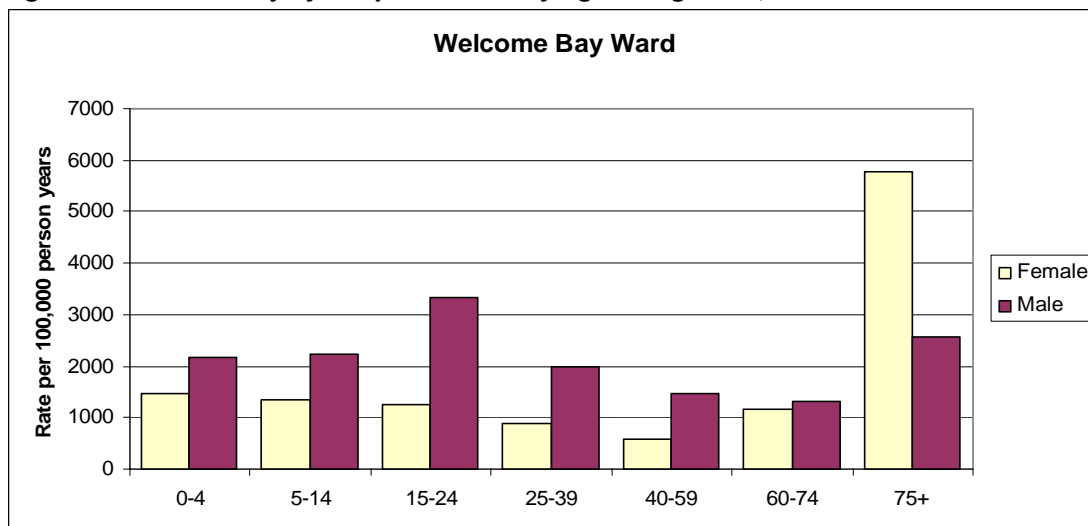


Figure 49 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (1,894 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (1,696 injury hospitalisations per 100,000 person years) and Pacific peoples (878 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (80%) of the injuries.

Figure 49: Injury hospitalisation rates by ethnicity for Welcome Bay Ward, 2001-2003

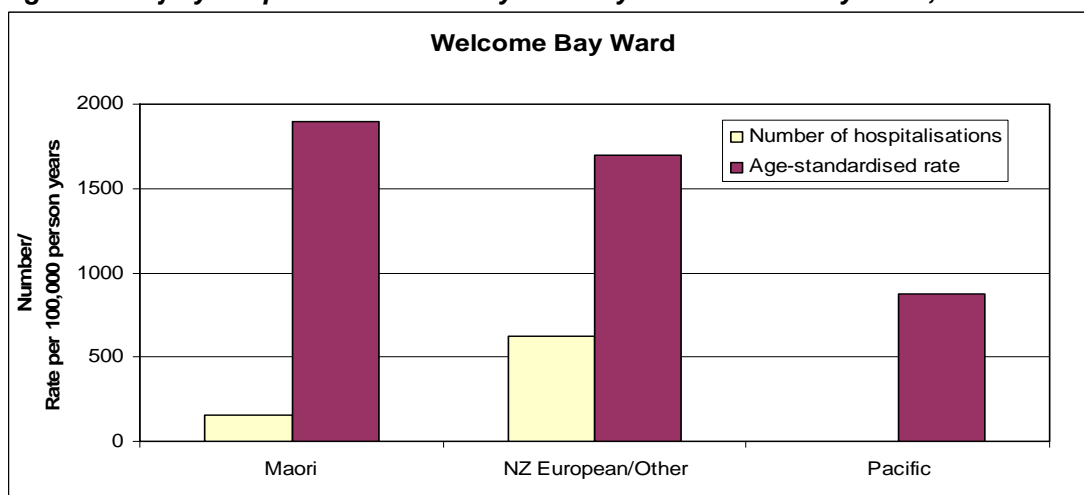


Table 21 shows that New Zealand European/Other had the highest proportion of hospitalised falls (41%) among all ethnic groups during the period 2001-2003. Maori had a higher proportion of cutting and piercing (14%) compared to the other ethnic groups. Half (50%) of the injury hospitalisations for Pacific peoples were due to motor vehicle crashes on a public road.

Table 21: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=155)		NZ European/Other (n=626)		Pacific peoples (n=4)	
Cause	%	Cause	%	Cause	%
Falls	21	Falls	41	Motor vehicle crashes on public road	50
Cutting/Piercing	14	Cutting/Piercing	10	Striking an object or person	25
Motor vehicle crashes on public road	12	Motor vehicle crashes on public road	9	Others/unspecified	25
Striking an object or person	10	Striking an object or person	6		
Assault	8	Attempted suicide	5		

8.0 Key Findings

The data detailed in this report indicates that injury is a significant cause of death and hospitalisation for people in Tauranga District. The injury hospitalisation data discussed in sections three to seven clearly indicates that falls; motor vehicle crashes on a public road; cutting and piercing injuries; suicidal behaviours; striking an object or person; and cycle crashes are leading injury concerns for the Tauranga District. Suicide or deliberate self-harm; motor vehicle traffic crashes; and falls were the leading causes of injury deaths for the Tauranga District.

Analysis of injury data by Ward shows that Welcome Bay Ward had the highest injury hospitalisation rate and injury death rate. Otumoetai-Bethlehem Ward consistently had the lowest injury death and injury hospitalisation rates.

In addition to those aged 75+ years, who had the highest rates of injury hospitalisations, other age groups at high risk of injury hospitalisations were children and adults aged under 40 years (particularly males). During 2001-2003 period, New Zealand European/Other and Maori of all ages were more likely to be hospitalised following an injury than Pacific peoples. Falls were the leading cause of injury hospitalisation for all ethnic groups. Overall, New Zealand European/Other accounted for more the majority (82%) of injury hospitalisations; Maori accounted for 17%; and Pacific people accounted for 1%.

For injury deaths, other than those aged 75+ years who had the highest rates of injury deaths, young people 15-24 years had the second highest injury death rates, followed by adults aged between 25-39 years. In general, Maori were more likely to have higher injury death rates compared to New Zealand European/Other for all age groups except those aged 5-14 years and 60+ years. Only one Pacific person died as a result of injury during the period of 1996-1999. It is of concern that Maori and New Zealand European/Other had a high proportion of injury death as a result of suicide and motor vehicle crashes on a public road. Overall, New Zealand European/Other accounted for the majority of injury deaths (79%), Maori accounted for one-fifth (20%), and Pacific peoples accounted for 1%.

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