Trend and behaviour changes in young people using the 1737-Need to Talk Helpline

Yingyue Kang[1] and Mahsa Mohaghegh[2]

[1]School of Engineering, Computer & Mathematical Sciences,
Auckland University of Technology
ddf3074@autuni.ac.nz
[2]School of Engineering, Computer & Mathematical Sciences,
Auckland University of Technology
mahsa.mohaghegh@aut.ac.nz

Abstract. Many countries offer crisis helplines to help people deal with mental problems. The 1737-Need to Talk Helpline has been operating in New Zealand for many years, this service supports anyone feeling stressed, worried, down, or needing support. Trained counsellors respond to texts and calls 24/7 and develop care plans to provide the best possible service user outcomes. This study was undertaken to examine the use and trends of the 1737-Need to Talk helpline among young people between 2018 and 2022.

Keywords: Mental Health, Helpline, Young People.

1 Background and Related Works

Mental illness can be distressing and can cause problems in everyday life. However, in most cases, symptoms can be effectively managed through a combination of medication and talking therapies known as psychotherapy. In addition, many countries offer crisis helplines to help people deal with mental illness by talking on the phone or sending text messages. Crisis helplines have been available since the 1950s to support community members who are experiencing personal crises, including suicide risk and violence [2]. Highly trained operators provide prompt and professional assistance to callers, and a growing body of research has consistently shown that helplines are effective tools in reducing distress and suicidality for help-seekers.

Data show that young people are increasingly using mental health helplines to seek help for mental health problems and that their age group, behavioural trends and reasons for seeking advice are changing yearly. According to a survey of youth support hotlines in Los Angeles, the number of people using the helpline has increased each year significantly [7]. The most contacted group among young people when it comes teenage females, with most contacts made by teenage females aged 15 and 16, while contact from children aged 13 and under has also increased significantly year on year [5]. In many cases, there is evidence

that the reason for contact is anxiety and stress, with young people contacting the helpline describing their distress as stemming from suicide-related thoughts or behaviours [3, 9]. For example, the Danish helpline reported that 6.3% of the 9,685 consultations via SMS communication in a year were on the topic of suicide. In addition, 5.5% of Danish young people aged 13 to 18 reported attempting suicide at least once, and 67.8% of these were young women [10].

Some evidence suggests that helplines can improve the short-term psychological state of callers, including reducing suicidal ideation and intent [4, 6]. In addition, early psychological interventions can reduce mental health burden and health disparities in underserved communities [1] and have been shown to effectively address unmet mental health needs (Farkas Boevink, 2018).

This research will focus on Whakarongorau Aotearoa//New Zealand Telehealth Services and will work in collaboration with the organisation. Whakarongorau Aotearoa, previously known as Homecare Medical, is a social enterprise that operates many of 'Aotearoa's national telehealth services. The organisation provides free 24/7 virtual health, mental health and social services to the public. The aim of this organisation is to provide consistent, clinically supported access to services for those in need or when people are unable to access other options due to time of day, location, or financial or cultural barriers. Whakarongorau Aotearoa offers a variety of mental health services to the public, such as the Alcohol Drug Helpline, Need to Talk Helpline and the Gambling Helpline. While Whakarongorau Aotearoa provides a variety of health and mental health services, this project will focus on the 1737-Need to Talk helpline. This service supports anyone feeling stressed, worried, down, or needing support. Trained counsellors respond to texts and calls 24/7 and develop care plans to provide the best possible service user outcomes.

Finding trends of young people using mental health helplines can help mental health services better understand the reasons, behavioural patterns and changes in the characteristics of young people contacting helplines. This will help professionals provide efficient, early and comprehensive interventions for young people with mental health problems and other health-compromising behaviours. The aim of this paper is to look for the trends of young people using mental health helplines. In the article, young callers aged 13-24 years will be tracked in 6-month blocks to explore whether there is a changing trend in the use of mental health helplines by young callers.

2 Methodology

2.1 Helpline

1737-Need to Talk helpline is the National Mental Health and Addictions Helpline number in New Zealand and as part of the services provided by Whakarongorau Aotearoa 1737 Helpline provides help for anyone who is feeling anxious and depressed or who needs someone to talk to. Any landline or mobile phone in New Zealand can call or text 1737 free of charge at any time. Trained counsellors

will talk to people who need help.

2.2 Data Collection

New Zealand telehealth service Whakarongorau Aotearoa provided sanonymised datasets of calls made or text messages sent between January 2017 and February 2022. More than 200,000 contacts were recorded, with contacts made by either phone or text message.

Data related to contacts to the helpline contained basic demographic information such as age, gender identity, District Health Board (DHB), ethnicity, type of contact, and reason for contact. Advisors collect data and record each call and text message in a systematic and standardised way. Also based on Whakarongorau Aotearoa's risk definition criteria, the advisor assesses the risk types of the contact.

The dataset contains demographic information about callers over a three-year period, including demographic information such as age, Gender, and DHB. The data also contains contact-related information such as contact method, call duration and reason for the call. If the contact is considered to have psychological risks, the number and type of risks are also recorded in the contact information. Each individual is assigned a patient ID, providing a unique identifier at the caller level.

2.3 Linear Regression

Trends in the demographic characteristics, behavioural patterns such as contact methods and risk outcomes of users exposed to 1737-Need to Talk helpline were analysed, with standard linear regression analyses performed separately for each time trend. One of the Linear Regression Models in RStudio was used to analyse whether the trends in user characteristics, behaviours and risks were statistically significant. We defined the trend model in which a p-value of less than 0.05 was considered statistically significant. The regression model is given by the following equation.

For missing data in the dataset, we consider them to be completely randomly missing and only use data that are fully documented in this study.

3 Results and Evaluation

3.1 Overall Trends Across 1737 Need to Talk and Trends for Young People

Between 1 January 2018 and 31 February 2022, 1737-Need to Talk received a total of 214,384 contacts. For the purposes of this study, data was split into six-monthly blocks. However, as the data for 2022 contained only two months we have only used data from 2018 to 2021 when calculating the growth rate and linear model. The time trend analysis shows a general upward trend in

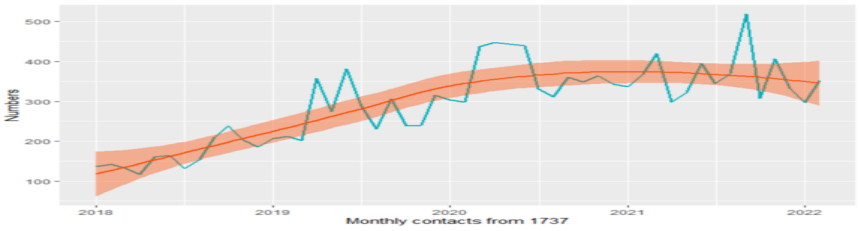

Figure 1: Monthly contacts of 1737-Need to Talk helpline

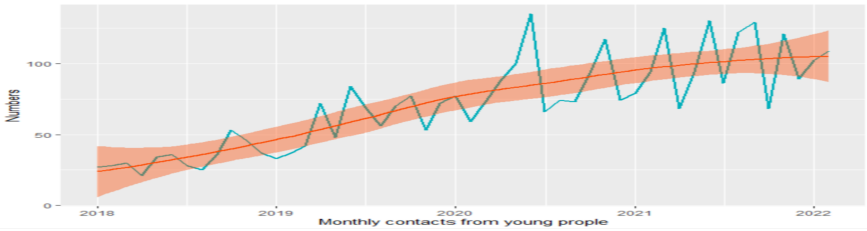

Figure 2: Monthly contacts of young people

the total number of helpline contacts, excluding three sudden increases between 2019 and the second half of 2021, the overall trend is a slow but steady increase. The number of helpline contacts increased from 28,098 in 2018 to 66,239 in 2021 (p-value <0.001, growth rate = 17%).

Similar to the overall trend, the number of contacts from young people is on an overall upward trend. A total of 51,866 contacts over the period of data recording were from young people aged 13-24 years, accounting for approximately 25% of the total contacts. Of these, 30,460 contacts were from 13–19-year-olds group and 21,406 contacts were from 20–24-year-olds group. The number of contacts from young people on the helpline has increased from 5,376 in 2018 to 18,238 in 2021. Although young people's contacts overall also show an upward trend the yearly average growth rate is much greater than the overall contacts (p-value <0.001, growth rate = 23%).

3.2 Trends in demographic characteristics of contacts to the 1737-Need to Talk helpline

3.2.1 Trends in gender at contact to the 1737-Need to Talk helpline

The gender of young people contacting the helpline is divided into four different groups: female, male, Gender diverse and undisclosed gender. Between 2018 and 2021, the majority of young people contacting the helpline will be female, accounting for approximately 67.4% of young people overall. The proportion of males was approximately 18.7% and a minority of Gender diverse young people, only 1.5% overall. 12.4% did not disclose their gender identity information. For

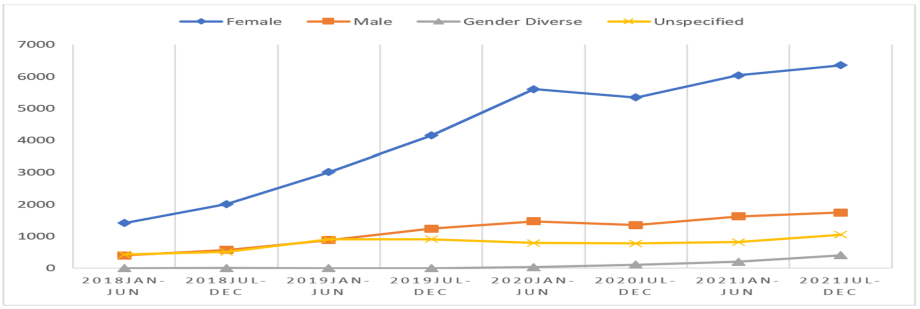

Figure 3: Number of contacts changing of four gender groups

all contacts female callers account for approximately 53.4% of all contacts, male callers account for approximately 25.3%, 20.8% did not disclose their gender identity and only 0.58% of callers were Gender diverse. By comparing the total number of contacts, it can be clearly seen the difference in the proportion of young people by gender. There is a slight decrease in the proportion of males and non-disclosed gender, but there is an increase in the proportion of females and gender diversity.

There is also a clear positive trend in the number of young females contacting the helpline (p-value$<$0.001), and the change in the proportion of young female is significant and consistently upwards (p-value=0.047). In contrast, there was only a slight change in the number of males contacting the helpline (p-value=0.001) and little change in the trend in the proportion of males (p-value=0.6543), with a p-value greater than 0.05 not showing a statistical association between the proportion of males and time. The trend in the total number of Gender diverse young people is climbing (p-value=0.0086), while the percentage of gender diversity is also increasing (p-value=0.0056). The number of young people who did not disclose information about their gender identity increased (p-value=0.029) and the percentage increased significantly (p-value=0.0045).

3.2.2 Trends in District health boards at contact to the 1737-Need to Talk helpline

According to the New Zealand Ministry of Health's DHB classification policy, all 1737-Need to Talk helpline users are recorded as 20 different DHBs and grouped into four main DHBs by region, Central, Midland, Southern and Northern. The contacts from the Central region were the highest, accounting for 30.7% of the total number of contacts. The total number of contacts from the Northern region was similar to that of the Central region, accounting for 30.2% of the total contacts. The total number of contacts from the Southern and Midlands regions is relatively low, at 21.8% and 17.3% respectively.

In a similar trend of total contacts for young people, contacts from all four Health Authority regions showed an upward trend over the four-year period. The highest growth rate was seen in the Southern region, where the growth rate

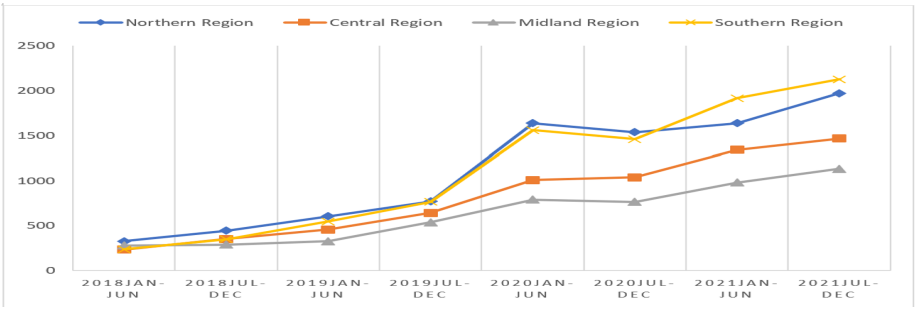

Figure 4: Number of contacts changing of four DHBs

was 37%. The increasing trend in the number of contacts was evident in the Southern region (p-value<0.001), as well as the proportional increase in this region (p-value=0.0051). The Central and Northern regions show very similar growth rates of 29% and 30% respectively, with the number of contacts from the Central region showing a clear upward trend (p-value<0.001) and the proportional change, although not as significant as the number of contacts, still showing a gentle upward trend (p-value=0.041). The total number of contacts in the Northern region was not as significant as in the Central region but still showed a consistent upward trend (p-value=0.002) and the proportional change also showed a gentle upward trend (p-value=0.027). Surprisingly, although the trend from the Midlands region increased slightly (p-value<0.001), the percentages from this region showed essentially no change (p-value=0.49).

3.2.3 Trends in ethnicity at contact to the 1737-Need to Talk helpline

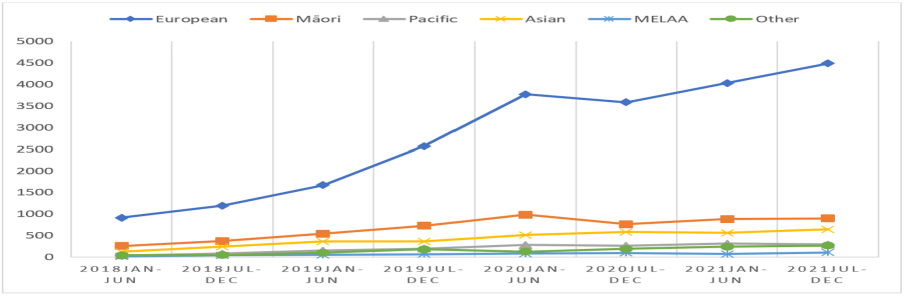

Figure 5: Number of contacts changing of six ethnic groups

According to the New Zealand 2018 Census report on ethnic groups, New Zealand citizens and residents are divided into six different ethnic groups. Service users may choose to provide an ethnicity, these will then be grouped into European, Māori, Pacific Peoples, Asian, MELAA (Middle Eastern/Latin American/African) and Other ethnicity. The distribution of the six ethnic groups

from which young people are exposed is similar to the census results. The largest contact comes from the European ethnic group, accounting for 64.8% of the overall number of young people's contacts.

Between 2018 and 2021, the number of contacts from the European ethnic group continues to increase (p-value$<$0.001), while the proportion of contacts from the European ethnic group is increasing but not as significantly as the number (p-value=0.024).

Contacts from the Māori ethnic group accounted for 15.7% of total youth contacts, making it the second largest ethnic group in total contacts. There was a positive change in the number of contacts from the Māori group (p-value=0.036) and a consistent but insignificant positive change in the proportion (p-value=0.033). The Pacific group accounts for approximately 4.7% of the total number of youth contacts. There is a significant positive trend in the number of contacts for the Pacific group (p-value=0.0038) but not a significant upward trend in the proportion (p-value=0.043). The proportion of contacts from Asian ethnic groups was approximately 9.8%. There was a significant increase in the number of contacts from Asian groups over the four years (p-value$<$0.001), however there was no significant change in the proportion of contacts from Asian groups which did not fit a linear trend (p-value=0.78). Similar to the Asian group, the MELAA group, which accounted for 1.5% of total contacts, also showed an increase in the number of contacts (p-value=0.0083) but no significant change in proportion (p-value=0.87). Contacts from other ethnic groups also showed a positive trend in number (p-value=0.0019) but again no significant change in proportion (p-value=0.055).

3.3 Trends in behaviour at contact to the 1737-Need to Talk helpline

In this study, we also analyse the behaviour of young users of the helpline to help us understand more deeply the changing behavioural patterns of young people. We will focus on the analysis of users' interaction type. By looking at the total number of contacts over four years, text messaging was the preferred method of contact for young people aged 13-24, with the number of contacts made via SMS accounting for 81% of total contacts, in contrast to just 19% of contacts made using telephone. Similar to the increasing trend in the overall number of contacts, there is a clear upward trend in the number of both text messages and phone calls. The linear trend p-value for SMS contacts was less than 0.001 and for telephone contacts the linear trend p-value was 0.0014.

The number of telephone contacts rose from 1,047 contacts in 2018 to 3,362 contacts in 2021, an increase in volume of 2.84. The number of contacts for SMS contacts rose from 4,329 contacts in 2018 to 14,876 contacts in 2021. However, the proportion of SMS contacts did not show a significant change over the four-year period (p-value=0.75) and the change in the percentage of SMS contacts did not fit well with the linear trend. The proportion of telephone contacts also did not follow a linear trend (p-value=0.75) and even showed a negative trend in the proportion of contacts.

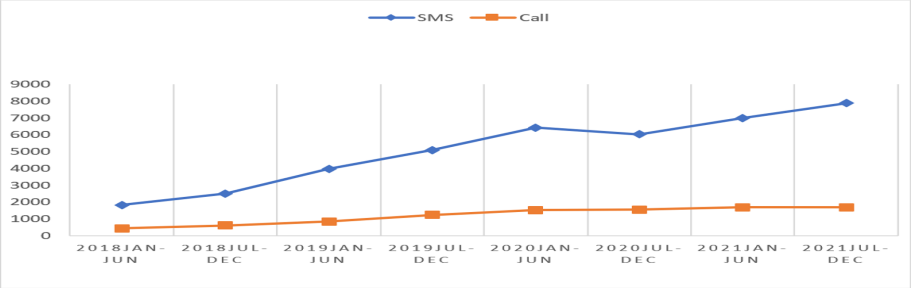

Figure 6: Trends in interaction type of young users who contacted the 1737-Need to Talk helpline

3.4 Trends in risk at contact to the 1737-Need to Talk helpline

An advisor supporting a service user on the 1737-Need to Talk helpline will record a risk during the contact if a risk situation arises. Risk data will be categorised into five risk groups: risk of suicide, self-harm, harm to others, abuse and breaking glass.

Breaking glass is the internal term for necessary disclosure. Under the Health Information Privacy Act, 1994 (HIPC) and the Privacy Act 2003, information collected from a service user must be kept confidential and not disclosed to a third party without that person's consent unless that third party provides health services to them. However, if necessary, health authorities may disclose information to prevent or mitigate a serious threat to public health, public safety, and the healthy life of the concerned individual or other individuals. In addition, disclosures may be made, where necessary, to persons who can take action against the threat.

3.4.1 Risk Contacts Overview

Over the four-year period 2018 to 2021, a total of 31,657 contacts were identified as at risk (4%) with the highest number of contacts at risk of suicide. However, the number of contacts from young people aged 13-24 that were at risk over this four-year period was 11,042 (7%), which is slightly higher than the proportion of total contacts that were at risk.

The number of contacts identified as at-risk showed an upward trend and was statistically significant (p-value=0.019). The highest number of calls were related to suicide and suicidal ideation, accounting for approximately 57.7% of the total number of contacts at risk. In 2018, there were 1148 suicide-related contacts and in 2021, there were 2051 contacts regarding suicide. Similar to the change in trend in the total number of contacts at risk, the trend in contacts at risk of suicide showed a similar upward trend and was statistically significant (p-value=0.002). The trend in percentages did not show a significant trend and

did not conform to a linear trend (p-value=0.36).

The increase in the number of contacts regarding self-harm was significant (p-value=0.00352), representing approximately 25.2% of the total risk contacts. there were 148 contacts regarding self-harm in 2018 and 824 contacts regarding self-harm in 2021. There was no significant trend in proportional change (p-value=0.37).

There was no statistically significant linear trend in the number of contacts regarding harm to others (p-value=0.56), and the number of contacts defined as a risk of harm to others decreased from 53 in 2018 to 42 in 2021, representing approximately 1.9% of the total risk contacts, which is the lowest number of the four risks. There was also no significant trend in the proportion of harm to others (p-value=0.057).

There was a significant linear upward trend in the number of contacts to breaking glass (p-value=0.00074), with the number of contacts defined as a risk of breaking glass increasing from 131 in 2018 to 357 in 2021, representing approximately 9.5% of the total risk contacts. However, there was no significant trend in percentage change (p-value=0.40).

There was a significant upward trend in the number of risk contacts related to abuse (p-value=0.0020), with a total of 62 contacts defined as having a risk of abuse in 2018, increasing to 239 contacts for this risk in 2021. Also, there was a significant upward trend in the proportion (p-value=0.0020).

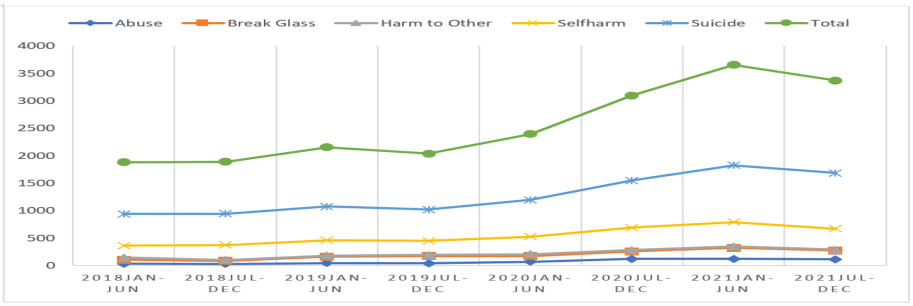

Figure 7: Number of contacts changing of five risk types

3.4.2 Testing the association between risk type and user characteristics

To further discuss whether user demographics are related to risk type, we used Chi-square tests to correlate risk type with age, gender, DHB and ethnic group. Results showed that gender (p-value=0.025) and ethnic group (p-value=0.0088) were associated with risk type, while DHB (p-value=0.92) and age (p-value=0.49) were independent variables from risk type.

In terms of gender, by calculating the proportion of risk contacts comparing the four different gender groups we found that females had the highest proportion of risk contacts, with approximately 2% of contacts from females being

considered risky. For males it was 1.7% and for undisclosed gender 1.9%. The Gender diverse group had the lowest percentage of risky contacts at 0.9%. However, by looking at the gender of each risk type of contact we can see trends in the different risk types displayed by different genders. Where women show a strong tendency to self-harm, men are more likely to be identified as being at risk of harming others.

In terms of ethnic groups, we also calculated the proportion of risk contacts for six ethnic groups. MELAA had the lowest percentage of risky contacts at approximately 1.1%. The different ethnic groups also show different trends in the types of risk. The European ethnic group had a higher tendency to self-harm, while the Māori ethnic group showed higher risk trends for hurting others, breaking glass and abuse.

4 Discussion

The main objective of this study was to understand the demographics and trends of young users (13 to 24 years old) of the 1737-Need to Talk helpline.

It has been suggested that many young people feel hesitant to disclose suicidal or self-harming thoughts to adults and are reluctant to seek help from parents, siblings and other relatives [8]. Similarly, surveys have shown that using anonymous methods such as social networks to seek help is the most widely accepted method for young people with emotional problems [11]. The helpline reduces the barriers to seeking help for emotional problems such as fear of parents and worry about friendships.

The data observed an overall increase in use by 13- to 24-year-olds group, with the data highlighting that the number of young female contacts has increased significantly each year and remains at a high level. Contacts from the South are notable for DHB, with young people in the South accounting for only 19% of young people aged 13-24 nationally according to the 2018 New Zealand Census report (Stats NZ.,2020). However, between 2018 and 2021, the 1737-Need to Talk helpline receives far more contacts than the percentage of the population, with over 30% of young people's contacts coming from the Central region. By looking at the type of interaction of contacts, we see that young people are more likely to use text messaging to communicate. At the same time, the risk trend for young people increases significantly, with the proportion of contacts identified as risky in the 13-24 age group remaining the highest of all age groups. A Chi-square test of risk type and demographics revealed a significant interaction between gender and ethnicity on risk type.

The main objective of this study was to understand the demographics and trends of young users (13 to 24 years old) of the 1737-Need to Talk helpline. It has been suggested that many young people feel hesitant to disclose suicidal or self-harming thoughts to adults and are reluctant to seek help from parents, siblings and other relatives [8]. Similarly, surveys have shown that using anonymous methods such as social networks to seek help is the most widely accepted method for young people with emotional problems [11]. The helpline reduces

the barriers to seeking help for emotional problems such as fear of parents and worries about friendships. The data observed an overall increase in use by the 13- to 24-year-olds group, with the data highlighting that the number of young female contacts has increased each year significantly and remains at a high level.

Also the risk trend for young people increases significantly, with the proportion of contacts identified as risky in the 13-24 age group remaining the highest of all age groups. In addition, a Chi-square test of risk type and demographics revealed a significant interaction between gender and ethnicity on the risk type.

5 Conclusions

Our data shows that young people aged 13-24 are increasingly using the 1737-Need to Talk helpline. Contacts from young people are increasing each year significantly, and the majority of these contacts are from service users who identify as female. Contacts from the southern DHB are increasing rapidly, with contacts from this area going from the lowest proportion of contacts to the highest in four years. The 1737-Need to Talk helpline shows an upward usage trend across all ethnic groups.

At the same time, the number of contacts defined as risk contacts is increasing yearly, with young people being considered more at risk than other age groups. Young people contact the helpline most frequently for suicide-related issues, and proper guidance and resolution of suicide-related issues are imperative, particularly in relation to young women. Māori shows strong trends in almost all risk types, and this ethnic group needs more guidance on what can be done to reduce risk.

In future work, we could consider recording and analysing more data from the non-COVID-19 period to explore how young people use the helpline changes in the absence of a public health emergency outbreak. This will ensure that the 1737-Need to Talk helpline can capture young people's behavioural patterns and trends in both regular situations and emergencies.

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