School of Medicine, Brookfield Health Sciences Complex, University College Cork

Module Code: MX5091

Title of Project: Assessing the Traveller community's experiences of mental health issues and seeking appropriate mental health care within the North Cork area

Student Name: Rachael Dunne

Student Number: 116300601

Name of Project Supervisor: Dr Alin Dumitrescu

Word Count: 5281

Date: 14th February 2025

I have read the University Policy on Academic Integrity for Examinations and Assessments, and I declare that the content of this assignment is all my own work. Where the work of others has been used to augment my assignment, it has been referenced in accordance with academic convention.

This essay complies with university requirements and guidelines on academic integrity including plagiarism:

YES X NO ☐ (Please tick ✓ **one** box)

I attest that I have not submitted this material in whole or in part for the assessment of another programme or award in this School or University or any other higher education institution.

YES X NO ☐ (Please tick ✓ **one** box)

Signed . . . .

Table of Contents

Abstract

Irish Travellers suffer some of the worst discrimination of any ethnic group in Europe, fueling a mental health crisis. This study aimed to assess mental health needs, risk and experiences of accessing mental healthcare for adult Travellers in North Cork.

35 participants were recruited through Travellers of North Cork, a human rights organisation, to anonymously complete an online survey. Those with literacy issues are underrepresented. Formulated scores estimated an individual's relative risk for suicide (MHRScore; McDonald's Omega=0.775), substance misuse (CAGE), barriers to care and attitudes towards services.

31% reported their current mental state as ''good'' or ''very good''. 86% had at least one mental disorder diagnosis. 21% of participants did not know how to deal with a crisis or had attempted suicide. Thoughts of self-harm/suicidal ideation were reported by 18% and the same had a clinically significant CAGE score. The mean MHRScore was 14.35 (95% CI: 10.08–19.17) [min 1, max 46.73]. MHRScore inversely correlated to being in a relationship/married (U=63.5, z=-2.027, p=0.042) and knowing how to manage a crisis (U=49.5, z=-2.008, p=0.044). 91% had lost a loved one to suicide.

43% said they faced barriers in accessing care, most commonly privacy, embarrassment, remembering appointments and unsuitable locations. Those with a higher MHRScore faced more barriers (rho=0.395, p=0.019).

46% of respondents had used mental health services and 88% were satisfied with their care. 74% said they would feel comfortable talking to their GP about their mental health. 89% said they trust their doctor. A positive attitude towards healthcare correlated with a higher level of education (rho=0.334, p=0.05). 27% said they experienced discrimination in a healthcare setting.

Irish Travellers are at higher risk of suicide and have numerous mental health needs complicated by bereavement, substance misuse and barriers to care. There are opportunities for mental health services to become culturally competent.

Introduction

Background

Mental health disorders pose a significant health and economic burden and are a leading cause of disability worldwide. Global DALYs (disability adjusted life years) associated with 12 mental disorders rose from 80.8 million in 1990 to 125.3 million in 2019[1]. However, new methods estimate a figure of 418 million, with an associated economic burden of US$5 trillion[2]. In Ireland, mental health cost €8.2 billion in 2023; only cardiovascular disease exceeded the overall illness burden[3]. Irish young people have higher rates of mental disorders compared to those of a similar age in other countries, yet our mental health expenditure is low relative to other countries, at just over 6%[4].

Irish youth have a higher death rate by suicide than other countries[3]. There have been increases in both suicide and self-harm rates in Ireland since 2007[5]. In 2022, 436 people died by suicide in Ireland, with a rate of 13.9 per 100,000 population in males and 3.5 in females[6]. There is a link between social deprivation, homelessness and poverty with suicidal behaviour. Alcohol and other substance use disorders are found in 25-50% of all suicides[3]. As of 2010, the alcohol consumption rate for Ireland was one of the highest in Europe. The Irish rate increased by 24% between 1980 and 2010, whereas the average alcohol consumption in Europe decreased by an average of 15%. The cause of suicide is complex and a result of cumulative risk factors increasing vulnerability differently for individuals and groups. The strongest predictive factors are attempted suicide and suicidal ideation[7].

One in four Irish will experience a lifetime mental health problem and use mental health services[3,8]. In 2019, over 1 million people in Ireland were estimated to have had a mental health disorder, accounting for 21% of the population and higher than the EU average of 16.7%. Anxiety disorders were the most prevalent at 7.6%, followed by depressive disorders at 5% and substance use disorders at 4.7%[3]. The pandemic saw a surge in demand and waiting times for both primary and secondary mental health services.

Known social determinants of poor mental health are isolation, alienation, displacement, peer rejection, social disadvantage, racial injustice and discrimination. Environmental determinants include access to substances, urbanisation and a lack of education, housing and poor nutrition. Economic determinants include poverty and unemployment. Some protective factors include empowerment, ethnic minorities integration, positive interpersonal interactions, social participation, responsibility and tolerance[9].

Irish Travellers are an ethnic minority indigenous to Ireland, officially recognised in 2017. They refer to themselves as Travellers and share a culture, language and traditions that include nomadism, albeit mostly historically as 73% of Travellers now live in houses[10,11]. There were 32,949 Irish Travellers recorded in the 2022 census; approximately 0.7% of the population[6]. They are a unique part of Ireland's cultural identity but face extraordinary disadvantage in housing, employment and social prejudice, some of the worst in Europe[12]. This has resulted in extreme health disparities, especially mental health.

The 2010 All Ireland Traveller Health Study was the largest, most comprehensive study conducted on Irish Travellers. In 2008, Traveller men had a life expectancy of 61.7 years, a 15.1 year deficit, remaining unchanged from 1987 and comparable to that of the general population in 1945-1947. For Traveller women, the expectancy was 70.1 years, a deficit of 11.5 years and only slightly improved from 65.3 years in 1987 which is comparable to that for the general population in 1960-1962. Traveller infant mortality increased from 1987 and is now 3.6 times higher than the general

population. Travellers are less likely to have private homes and face overcrowding and unsafe living conditions. 84% of Travellers were unemployed. The majority of had only primary school level education, with only 1% of Traveller children progressing to third level. Negative experiences in school and discrimination in future employment are valid reasons for leaving education early. This contributes to significant illiteracy, with 50% of Travellers reporting difficulty with reading medication instructions[10,11].

These findings explain the mental health crisis and suicide epidemic engulfing the Traveller community. Traveller men are 7 times more likely to die by suicide and women are 5 times more likely. Suicide is the cause of 11% of Traveller deaths. Travellers also comprise a disproportionate 8.2% of prisoners in Ireland[13]. Alcohol and drug misuse are major problems in Traveller communities and polydrug use tends to be more common. Travellers have poor uptake of support services despite higher rates of mental health problems, although this is debated[14]. AITHS data found that Travellers report greater use of and adequate access to services but describe a consistently poorer health care experience[15]. Cultural norms, fear of discrimination and embarrassment may hinder provision of mental health services. There is a lack of culturally appropriate engagement and existing supports are thought to be inadequate in meeting Traveller specific needs[14].

There is a lack of political will and retention of allocated funds to improve basic needs for Travellers in Ireland, according to a report by the European Commission against Racism and Intolerance in 2019 and several recommendations from this have been ignored[16]. This in combination with societal ignorance towards Traveller culture and exclusion means that mental health services are facing an uphill battle. Erasure of Traveller identity and assimilation with settled people poses a threat to overall wellbeing and are not solutions.

This study was conducted on behalf of North Cork Mental Health Services in partnership with Travellers of North Cork (TNC), a Traveller led human rights organisation.

Aims and Objectives

The objectives of this study are:

- To capture the current mental state of adult Travellers in North Cork
- To assess their mental health needs
- To assess risk of suicide completion due to mental factors and potentially identify high risk individuals
- To understand the barriers faced in accessing services
- To identify factors that complicate the provision of services
- To understand the attitudes held towards healthcare professionals and services and assess engagement and satisfaction
- To examine discrimination in healthcare settings
- To provide participants with information on seeking help locally
- To encourage a conversation around suicide and mental illness

Methods

Study Design

This cross sectional study was conducted in the community using an anonymised online survey which participants accessed on their personal devices via a link/QR code. This provided flexibility and discretion to improve response rate. Inclusion criteria required being an adult, self-identified as an Irish Traveller, living in North Cork and informed consent. Participants were required to tick a box confirming their ethnicity as an Irish Traveller and five statements of the study terms and conditions. If these could not be confirmed, the response was excluded.

Participants

Adult Irish Travellers living in the North Cork area were the population of interest. As many participants as possible were recruited through TNC who advocate for Traveller health and wellbeing and have strong ties to the community. The group has offices in Doneraile and Charleville. The Doneraile office was the point of contact throughout this study. The group advised on designing the survey using comprehensive language.

Study Measures

The study aimed to quantitatively assess four main components: mental health needs and risk, barriers to accessing mental health care, attitudes towards healthcare and substance misuse using CAGE. All scores except CAGE were formulated uniquely for these purposes.

Demographic data was collected for gender, age range, townland, relationship status and highest education level to try to characterise higher risk subgroups. No identifiable information was collected.

Mental Health Risk Score

The Mental Health Risk Score (MHRScore) was developed to estimate individual risk of suicide completion and also reflects reduced quality of life for mental health reasons. It has three components: mental state, mental disorders, and attempted suicide. Relative risk (RR) for suicide completion was extracted from literature for each component.

Mood was reported on a five point scale: very good, good, fair, bad and very bad. To translate this into RR for suicide completion, a paper that looked at risk and psychological distress levels for a UK population using the GHQ-12 scale was utilised. “Very good” and “good” were interpreted as ‘’no distress” ie. baseline risk. ‘’Fair’’ was likened to ‘’subclinical symptoms” with RR=1.13. ‘’Bad’’ was interpreted as ‘’symptomatic’’ with RR=1.83, with ‘’very bad’’ equated to ‘’highly symptomatic’’ with RR=2.43[17].

RR associated with mental disorders were derived from a 2023 umbrella review from the Lancet Public Health that examined individual level risk factors for suicide mortality in the general population across psychiatric, suicide related, sociodemographic and physical domains. It found a

history of suicide attempt/self-harm as the strongest overall risk factor, with an odds ratio (OR) of 16.3 (95% CI 7.5-35.5). Psychotic disorders (schizophrenia), mood disorders (depression, bipolar disorder), personality disorders (EUPD), substance use disorders (addiction/alcoholism) and anxiety disorders were associated with RR=13.2 (8.6-20.3), 12.3 (8.9-17.1), 8.1 (4.6-14.2), 4.4 (2.9-6.8) and 4.1 (2.4-6.9) respectively. ADHD had OR=6.7 (3.2-13.8). Suicidal ideation had RR=5.6 (3.1-10.1)[7]. These data were attached to the respective components of the MHRScore. Thoughts of self-harm and suicidal ideation, regardless of frequency, had an attributed RR of that for suicidal ideation due to limited literature data.

OR was approximated to RR for practicality as the incidence of dying by suicide is generally low (<10%) as per the rare disease assumption. It is acknowledged that this is higher in Travellers however data on suicide risk for mental disorders in this particular population were not available.

MHRScore was generated as the sum of RR for each component. ‘’Mental state’’ included mood and thoughts of self-harm/suicidal ideation. ‘Mental disorders’’ contained the sum of RR for each disorder and RR for ‘’suicide attempt’’ stood alone. There are undoubtedly complex interactions between the score’s components that are difficult to quantitatively discern. An additive model was used to avoid overestimation.

Barrier Score

Barriers to care were counted directly in the BarScore. Those commonly reported by TNC were presented in a multiple choice question in the survey with an option for free text. A higher BarScore meant a greater number of barriers for an individual in accessing any mental health service.

Attitude to Healthcare Score

Attitudes towards healthcare providers and services were measured by AttHScore. Trust in their doctor was given one point. The frequency of visiting their doctor was reported on a scale from ‘’every few months’’ which scored a maximum of four points, to ‘’never’’ which scored zero points. Participants were asked if they would feel comfortable discussing a mental health issue with their doctor and could respond with ‘’yes’’, ‘’maybe’’ or ‘’no’’, which scored two, one and zero points respectively. Lastly, participants were given one point if they had previously discussed mental health with their doctor. AttHScore had a theoretical minimum of zero and a maximum of eight; higher scores indicated greater trust and reciprocity towards healthcare providers, ie a more positive attitude.

CAGE

A modified CAGE tool was used to screen participants for substance misuse. CAGE is a well-known, standardised tool that screens for alcohol misuse disorder with a sensitivity of 71% and specificity of 90% using a cut-off score of two[18]. It is often modified to include illicit drugs.

Procedures

The questionnaire was developed from June to December 2023 with valuable input from TNC Doneraile as the use of complex medical jargon was flagged as a barrier to care during this process.

The questionnaire was created using Microsoft Forms and had three sections. The first contained information on the nature of the study, its purpose, anonymity and data handling. Participants were required to check statement boxes for informed consent before navigating forward. Participants were warned of potentially upsetting, sensitive topics discussed in the study and that responses were not saved until submitted at the end and that they could navigate freely between sections two and three so as to still access the help information before withdrawing. Section two contained the questionnaire and required a confirmation of Traveller identity. The last section contained both written and visual information on how to get help for your mental health, particularly in a crisis and how to recognise the signs of suicide. The phone numbers and details provided were pertinent to the region.

A QR code and link were generated for this form which was distributed by TNC community workers. The form was activated on 8th January 2024 and data collection ran until the end of August.

Ethical Approval

SREC approval was granted on 20th December 2023.

Data Analysis

Microsoft Forms captured data into a downloadable Excel file. One participant omitted a response to three questions – knowing how to handle a mental health crisis, thoughts of self-harm or suicidal ideation and a previous suicide attempt; the rest of their data was included in the analysis and the missing items omitted ie. pairwise deletion.

Data were analysed in SPSS V29 using nonparametric tests, namely Mann Whitney U test, Spearman's Rank Order and Kruskal Wallis due to non-normal distribution. This was determined by Shapiro Wilk test as $n<50$. Chi square or Fisher's exact test were used for nominal variables. A significance level of 0.05 was used.

Exploratory factor analysis (EFA) was conducted for MHRScore as a Kaiser-Meyer-Olkin test of 0.643 indicated adequate sampling and a significant Bartlett's Test of Sphericity ($p<0.001$) confirmed suitability. Principal Axis Factoring was used to extract a one-factor solution with an eigenvalue of 2.120, explaining 70.660% of the total variance. No rotation was applied. Communalities on extraction for suicide attempt, mental state and mental disorders were 0.878, 0.912 and 0.329 respectively. Factor loadings were 0.937, 0.955 and 0.574 respectively. With regards to the lower communality and loading of mental disorders, alternative MHRScore models with this component omitted or with disorders separated were tested. These demonstrated lower internal consistency and factor loadings and so the combined ‘’mental disorders’’ subscale was retained. The results of EFA support MHRScore as a unidimensional measure of a single factor: suicide risk. Suicide attempt and mental state have stronger associations with the factor compared to mental disorders.

In reliability analysis, MHRScore had a Cronbach's alpha of 0.71 and McDonald's omega was 0.775, indicative of acceptable internal consistency. The item-total correlations for suicide attempt, mental state and mental disorders were 0.664, 0.807 and 0.550 respectively. These results suggest that the subscales within MHRScore work together to measure a single latent construct.

To address confounding factors within MHRS, Traveller specific baseline risk of suicide was not used, rather that of the general Irish population. It is likely that the elevated risk seen in the Traveller population already accounts for mental disorders secondary to the multitude of psychosocial and socioeconomic factors outlined previously, which were not quantified in this study.

Linear regressions were performed for scaled or ordinal variables. Binomial logistic regression was performed for binomial dependents with ordinal independents. Some regression analyses were limited by quasi complete separation due to small sample size and character.

Microsoft Forms, SPSS and Excel were used to generate graphs and charts.

Results

Demographics

There were 21 women (60%) and 14 men (40%); no other genders were reported. 9 were single (26%) and 26 were married or in a relationship (74%). They came from five townlands: Mallow (9 participants, 26%), Charleville (19, 54%), Buttevant (3, 9%), Blarney (1, 3%) and Doneraile (3, 9%). Age was grouped into 18-24yrs (8 participants, 23%), 25-34yrs (7, 20%), 35-44yrs (5, 14%), 45-54yrs (6, 17%), 55-64yrs (5, 14%) and 65+yrs (4, 11%). 57% of participants were younger than 45 years.

When asked about highest level of education, 6 had no formal education (17%), 11 had primary school (31%), 4 had junior certificate (11%), 8 had leaving certificate (23%) and 6 attended higher level college or university (17%). 60% of participants did not have a leaving certificate. No trade apprenticeships were reported. There was a moderate correlation between education and gender, with women obtaining a higher level (Spearman's rho=0.451, p=0.007) (Figure 1). Education level did not significantly differ across townland or age range.

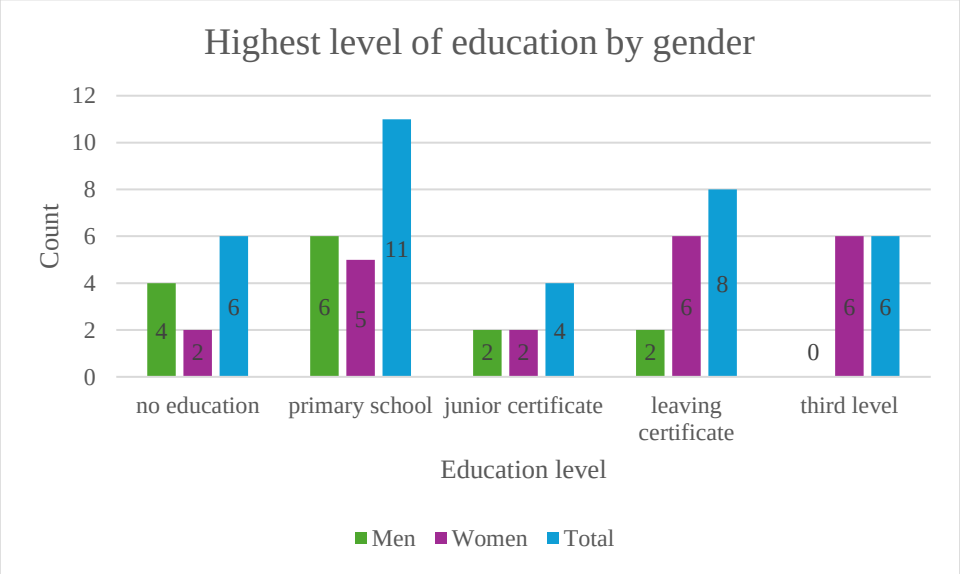


Figure 1: highest level of education by gender.

Mental Health Needs

Mood

''Fair'' was the mode and median mood and 20% reported bad or very bad mood. Only 32% reported having good mood or current mental health. Women experienced a greater range than men. Better mood was reported by those in a relationship/married (Mann Whitney U=51.5, z= -2.669, p=0.008) with small effect size (r=0.451). Worse mood was found in those that had active thoughts of self-harm or suicidal ideation (U=137, z=2.363, p=0.018, r=0.399) and those that had used mental health services (U=220, z=2.431, p=0.015, r=0.411).

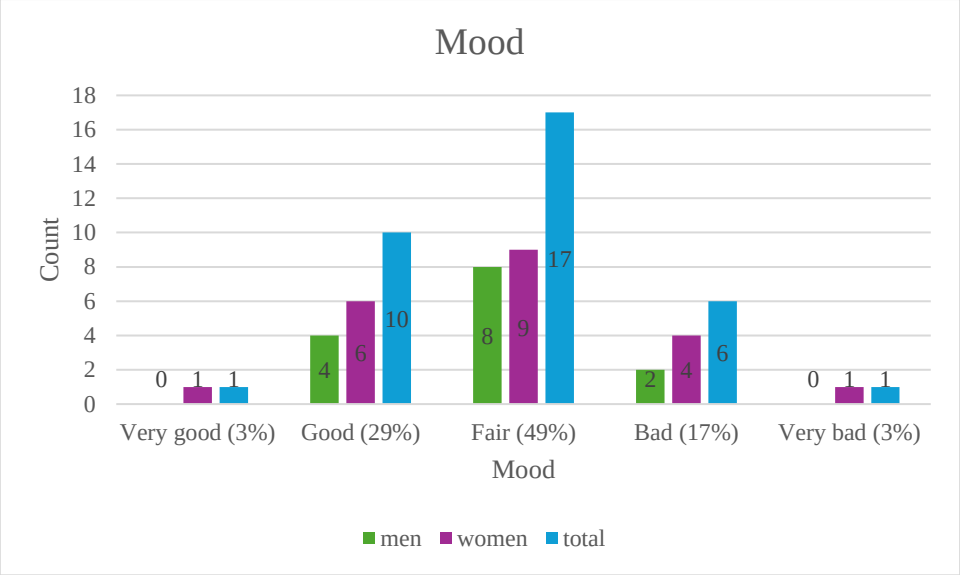


Figure 2: self-reported mood on a 5 point scale, including gender breakdown.

Mental Disorders

Anxiety and depression were the most prevalent disorders, found in over half. A third had both. The mean number of mental disorder diagnoses was 1.3, ranging from 0 to 3. 86% of participants had at least one mental disorder diagnosis and 40% had two or more. Four participants (11%) had a maximum of three disorders. ‘’Other’’ was described as EUPD and cardiovascular disease, which was omitted.

Having more disorders was associated with worse mood (Spearman’s rank order, 0.669, $p<0.001$). Linear regression found $R^2=0.38$ with adjusted $R^2=0.361$, meaning 38% of the variance in mood was explained by the number of disorders. The equation was significant with $F=20.225$ ($p<0.001$). For every mental disorder diagnosis, mood was reduced by 0.55 ($B=-0.55$, $p<0.001$). A Durbin-Watson test of 1.886 indicated no significant autocorrelation and VIF=1 inferred low multicollinearity.

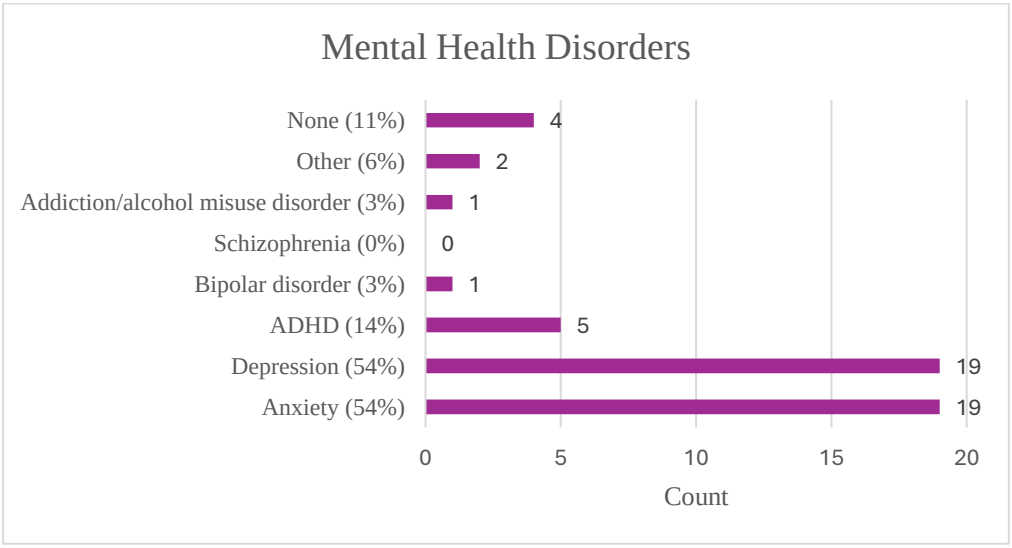


Figure 3: bar chart showing numbers and types of mental disorders with percentage prevalence.

Attempted Suicide

Attempted suicide was reported by 21% of participants. 46% had used mental health services before and 88% of these were satisfied with their care. When asked about thoughts of self-harm or suicidal ideation, 18% reported ‘’yes, sometimes’’. None reported frequent thoughts of same. 21% said that they would not know what to do if presented with a mental health crisis. 91% were bereaved by suicide.

A history of attempted suicide had medium correlation with the number of mental disorders (Spearman’s rho=0.457, p=0.006) and weaker correlation with mood (rho=-0.397, p=0.018) and BarScore (rho=0.375, p=0.026). There was a very strong association between attempted suicide and thoughts of self-harm/suicidal ideation (Chi-square 28.966, p<0.001, phi=0.91) however due to quasi complete separation, as all those who had thoughts of self-harm/suicidal ideation had attempted suicide, this may be an unreliable finding in this sample, despite making complete theoretical sense. This was confirmed by logistic regression with an extreme Exp(B). There was a moderate association found between having attempted suicide and using mental health services (Chi-square 5.641, p=0.032, Cramer’s V=0.401).

A binary logistic regression was conducted to further examine the association between the number of mental disorders and attempted suicide. The model explained 30.9% of the variance (Nagelkerke R^2=0.309) and had good fit (Hosmer Lemeshow, p=0.581). The results indicated that the number of mental disorders was a significant predictor of suicide attempts (B=1.455, p=0.019). For each additional diagnosis, the odds of attempted suicide increased by 4.28 times (OR=4.284, 95% CI:1.276–14.385).

A similar logistic regression was conducted for barriers to care (BarScore) and attempted suicide. The model explained 22.5% of the variance (Nagelkerke R^2=0.225) and had good fit (Hosmer Lemeshow, p=0.486). More barriers to care significantly predicted attempted suicide (B=0.608, p=0.03); with each additional barrier the odds of attempted suicide increased by 1.84 times (OR=1.836, 95% CI:1.061–3.177).

Mental Health Risk Score

The mean MHRScore was 14.35 (bootstrap 95% CI:10.08–19.17), ranging from baseline to 46.73. As an estimated individual RR for suicide completion, this study found that the average Traveller individual was 14.35 times more likely to die by suicide than the average Irish adult.

There were no significant correlations found between MHRScore and age, gender or education. There was a weak-medium positive correlation between MHRScore and BarScore, inferring that suicide risk increased with more barriers to care (Spearman’s rho=0.395, p=0.019). MHRScore did significant differ by townland (Kruskal-Wallis 10.157, p=0.038) [Figure 4]. Those in a relationship/married had lower scores (Mann Whitney U=63.5, z=-2.027, p=0.044), with medium effect size (r=-0.348). Those at higher risk tended not to know how to manage a mental crisis (U=49.5, z=-2.008, p=0.044, r=-0.344).

Using the 2023 Irish suicide rate of 9.2 per 100,000 person-years[6], the probability of an individual dying by suicide within a year could be calculated from MHRScore. As percentage chance, the mean was 0.132% (bootstrap 95% CI:0.0927-0.1763%) [min 0.1%-max 0.43%].

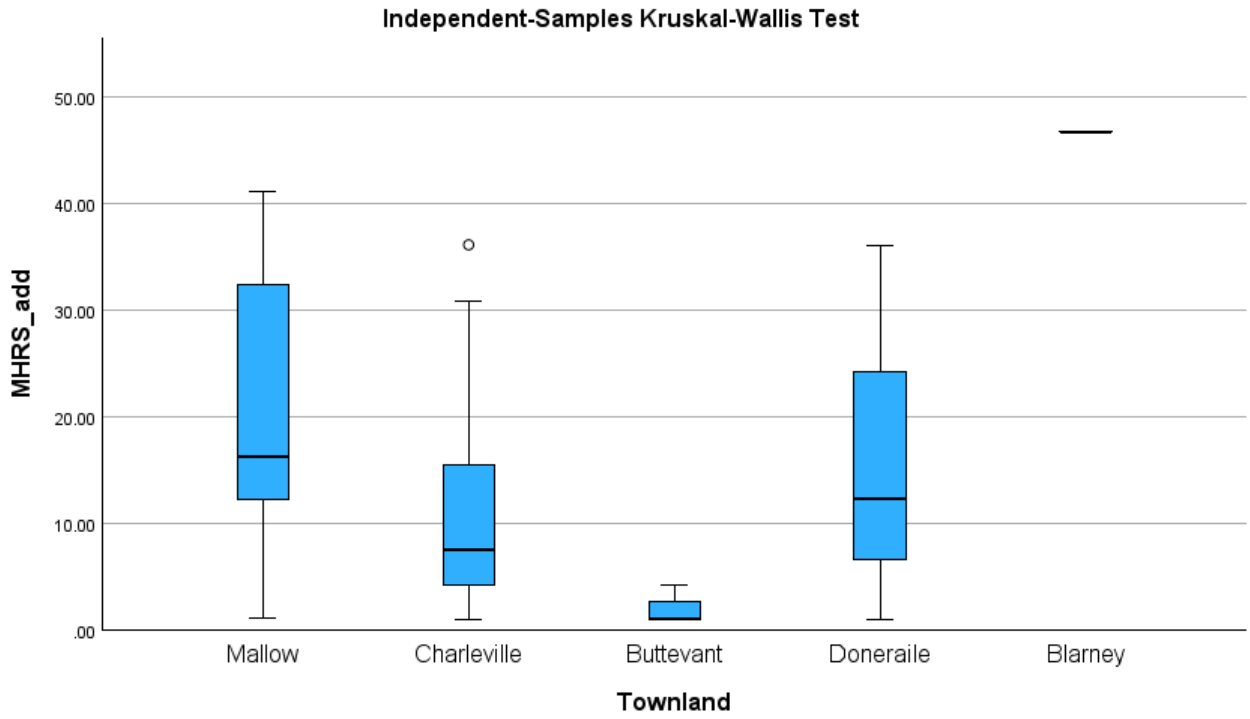


Figure 4: distribution of MHRScore across townland (p=0.038).

Barriers to Mental Healthcare

43% reported facing barriers in accessing primary or secondary mental health services. The mean BarScore was 1.29 [min 0, max 5]. Reported barriers are described in figure 5. ‘’Other” was described as ‘’literacy issues and doctors language’’. Those with a higher BarScore tended not to know how to deal with a mental health crisis (Mann Whitney U=53.5, z=-2.009, p=0.045, r=-0.345).

Barrier to mental healthcare reported	**Number of participants**
Privacy/confidentiality	7
Family embarrassment	6
Remembering future appointments	6
Unsuitable location	6
Transport	3
Services unhelpful	3
Cost	2
Other	1

Figure 5: barriers faced by participants in accessing mental healthcare.

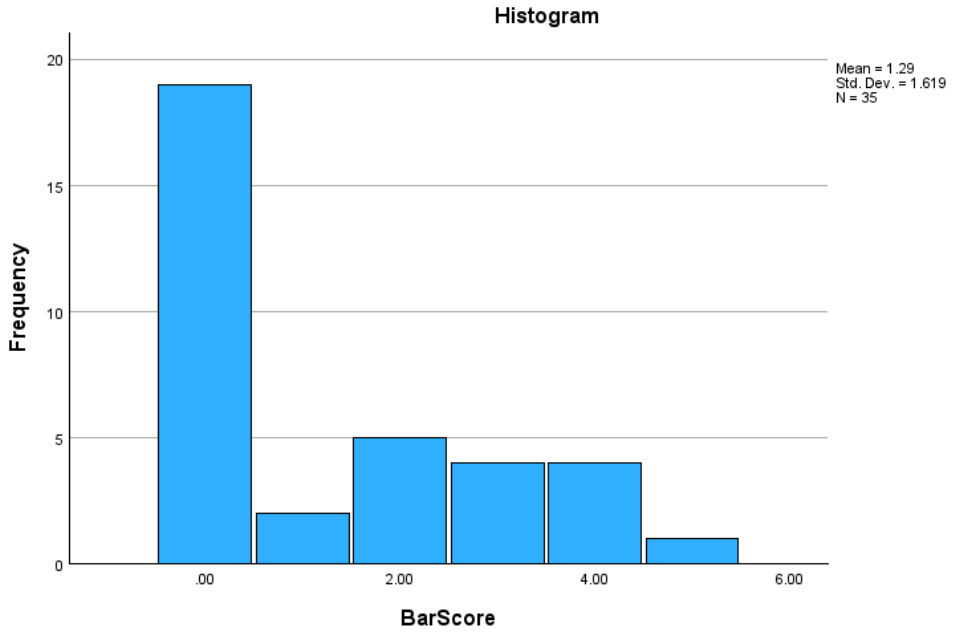


Figure 6: distribution of BarScore (total number of barriers faced in accessing mental healthcare).

Attitudes towards Healthcare Services

The vast majority (89%) said they trusted their doctor. When asked about comfort in discussing mental health with their doctor, 74% said yes, 14% said maybe and 11% said no. 77% had previously discussed mental health with their doctor. All (98%) visited their GP approximately once per year for any reason.

The mean AttHScore was 7.1 [min 4, max 8]. The mode and median was 8. Higher scores were associated with higher levels of education (Spearman's Rank Order, rho=0.334, p=0.05). The vast majority of respondents attended appointments regularly and held a positive attitude towards healthcare. Despite this, 27% experienced ethnic discrimination in a healthcare setting. Of these, 60% said it happened ''once or twice'' and 40% said it occurred ''a few times''.

Substance Misuse and CAGE

A third (34%) used drugs or alcohol more than once per week. Six participants (17%) had a clinically significant modified CAGE score. Four participants (11%) obtained a maximum CAGE score of 4. Only one said they were diagnosed with alcohol/substance misuse disorder.

Qualitative Findings

Participants reported a lack of services in rural areas for mental health, a lack of knowledge around accessing services and that services are usually not ''Traveller friendly''. They expressed a desire to know more about mental health services and to see greater uptake by young Travellers most in need [appendix 2].

Discussion

Main Findings

This study found that those with a higher MHRScore faced the most difficulty in accessing mental health services and seeking appropriate help in crisis, compounding their risk. A protective factor was being in a relationship or married. The estimated individual RR for suicide calculated in this study varied widely and did identify particularly high risk individuals. Risk could not be determined by demographics.

Substance misuse is underreported and dependency mostly evades detection by healthcare providers. The number of Travellers detected for substance/alcohol misuse using CAGE in this study (17%) is twice that of the general population for alcohol use disorder (9%)[19].

Virtually all Travellers are bereaved by suicide. The number of Travellers who reported an attempted suicide (21%) is almost double that of the general population (11%)[3].

These findings prove complexity in providing effective mental health services.

Comparison with Existing Research

A 2008 study by the Health Research Board of 2711 Irish adults found that the majority reported ‘’good’’ or ‘’very good’’ mental health in the past year, with only 15% reporting less than good mental health. 12.5% adults reported a current mental health problem[20]. In contrast, this study found that 69% of respondents reported less than good current mental state. 86% of these respondents had at least one mental disorder diagnosis. These figures are stark when compared to the general Irish population but against an Irish Traveller population they may compare similarly. Previous studies on prevalence of mental health problems in Traveller adults are scarce and research is usually qualitative. A lack of collection of ethnic identifiers by clinicians contributes to this and requires change. Some studies suggest 70% of adult Travellers in Northern Ireland having mental health problems according to Traveller Support Workers[21]. It was anecdotally cited that ‘’90% of Travellers suffer with their mental health’’ by a TNC support worker which prompted this research. A suggestion is to use ‘’Traveller’’ or ‘’Irish Traveller’’ as opposed to ‘’a member of the traveling community’’. This allows for easy file searching, consistency and better visibility. It should be noted however that Travellers may not wish to disclose their ethnicity for fear of discrimination or mistreatment[11].

Being single was associated with an increased MHRScore in this study. This agrees with the notion that family, in the absence of other attachments that shape identity, is extremely important for Travellers and a protective factor for suicide[22]. It was found that not knowing how to manage a crisis and more barriers to care are associated with higher MHRScores. This is congruent with literature reporting that poor relationships with healthcare services can be attributed to suicide in the Traveller community[23].

Bereavement is a complicating factor for the provision of mental health care due to a lack of grief counselling and the sheer frequencies of deaths within indigenous ethnic minority groups such as Travellers and Aborigines, meaning that the grieving process is never complete[22]. Older Travellers may feel a sense of loss for their traditions and culture. It is known that a family history of suicide is a risk factor for dying by suicide and in a close knit, already grieving community, that effect is amplified. A knowledge of suicide and identity crisis are also contributors to suicide in Travellers[13];

this is in keeping with 21% of respondents reporting a previous suicide attempt. Since the traditions of travelling and keeping horses are difficult to maintain in modern society, those who are unemployed, particularly single young men, may resort to alcohol or substance misuse, joyriding and other types of antisocial behaviour to alleviate boredom[22]. We know that Traveller suicides are most common in men aged 15-25[13]. A report examining the suicide deaths of Cork city and county from 2007-2012 said that alcohol and/or drugs were detected in 79.5% of postmortems[24]. Life without purpose is easily influenced to end.

According to a database that collected ethnic identifiers for 99.4% of users, Travellers comprised 1.6% of those seeking addiction treatment between 2007-2010 despite their population representing half of this. 77.5% of these Travellers seeking help were men. 42.3% of Travellers said alcohol was their main problem, compared to 52.7% of the general population. Polysubstance is higher in Travellers, at 53.2% vs 42.1%. In Traveller women, opiates were the most commonly reported problem substance, in contrast to alcohol for the wider population. This database also showed rates of Travellers seeking treatment increase by 163% in the same period[15]. This study discovered a discrepancy in diagnosing substance/alcohol use disorder and significant CAGE scores. Considering a sensitivity of 71%, 3.55 participants from this study alone suffer with alcohol/substance misuse disorder but are undiagnosed. Missing these issues may not be specific to Travellers but could be affected by perceived shame, lack of confidentiality or fear of discrimination by support services. There is a lack of awareness of available supports amongst Travellers and existing interventions are not based on their beliefs and values[15].

AITHS found that Travellers had half of the complete trust in health professionals than that of non-Travellers, at 41% vs 82% respectively. It said that over 50% of Travellers had concerns of the quality of care they received from services[11]. Interestingly, this study found the opposite. This could be partially related to the rates of discrimination when accessing health services between both studies; at 40% and 29%. Note that the rate for Black Americans is 17% and 14% for Latino Americans, two groups that are more commonly associated with racism[22]. Other barriers to services commonly cited include social and cultural stigma attached to engaging with mental health services. These were confirmed by this study.

Strengths and Limitations

Census data showed there were 1131 Travellers in Cork county in 2022, excluding Cork City[6]. Counts are only available as age groups however 50.5% were 20 or over, or approximately 571 adults. Cork County Council report that 276 Traveller households reside in North Cork, 151 in the South and 153 in the West[25]. Utilising these to represent countywide distribution, 47.6% reside in North Cork meaning approximately 272 adults were eligible for this study. The sample size accounts for 12.9% of this. For populations less than one thousand, 30% is ideally needed to be representative[26]. This is a limitation that also impacts potential predictive validity testing of risk models, which will require suicide outcome data to be collected in follow up studies.

Selection bias may be present in the recruitment process as those involved with TNC or close family or friends to community workers are possibly more likely to seek help and have greater awareness of available supports. A QR code was displayed at a primary care centre and so those attending were likely to engage more with services. True random sampling would require calling to households and this was not feasible for a small scale project with no funding.

It also excluded those who do not have internet access, cannot use technology, or have problems with literacy. The AITHS estimated literacy issues to be as high as 30% for Irish Travellers and this was frequently encountered during recruitment[11]. For these reasons, the true mental suffering is likely underrepresented, which is very concerning. Nevertheless, this study was facilitated by trust between TNC and the community.

The sample was reasonably balanced between men and women given the anecdotal reluctance of Traveller men to discuss mental health.

Implications for Practice

Several suggestions that arose from this study have already been cited however they include:

- Cultural competency training for mental health services.
- Collection of ethnic identifiers with patient consent using correct terms ‘’Traveller’’ or “Irish Traveller”.
- Consideration of literacy aids such as pictures/visual clues in patient information leaflets.
- Using plain, clear language that is culturally sensitive and checking understanding at each visit.
- Consideration of providing discrete text or phone call reminders for distant appointments for those in need who may rely on others to read.
- Greater awareness of literacy problems, Traveller language and culture in conducting future research.
- Improved screening and recognition of substance misuse by healthcare professionals.
- A focus on collecting accurate prevalence statistics for suicide attempts, suicidal ideation, and self-harm in Travellers.
- Follow up studies that collect suicide outcome data to strengthen predictive validity and refine individual suicide risk models, which could be implemented in future clinical practice to identify high risk individuals requiring suitable intervention.

Conclusions

Irish Travellers are a unique ethnic minority who endure extraordinary challenges to survive in a western society that evolves without them. The mental health epidemic they face is a culmination of longstanding socioeconomic deprivation, threats to culture and traditions, and erasure of identity. Mental health services should strive to meet their specific needs as the risk and impact of suicide in Travellers cannot be understated. Travellers need more than just tolerance; they deserve celebration of their heritage.

References

1. GBD 2019 Mental Disorders Collaborators. *Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019.* The Lancet Psychiatry, Volume 9, Issue 2, 137 – 150. Elsevier (2022).
2. Arias, Daniel et al. *Quantifying the global burden of mental disorders and their economic value.* eClinicalMedicine, part of the Lancet Discovery Science, Volume 54. Boston. Elsevier (2022).
3. OECD/European Observatory on Health Systems and Policies (2023), *Ireland: Country Health Profile 2023*, State of Health in the EU. Paris. OECD Publishing (2023).
4. O'Shea, Eamon, Kennelly, Brendan. Irish Centre for Social Gerontology and Department of Economics, NUI Galway. *The Economics of Mental Health Care in Ireland.* Ireland. Mental Health Commission (2008).
5. Griffin, Eve et al. *National Registry of Deliberate Self Harm Ireland Annual Report 2013*. Cork. National Suicide Research Foundation, University College Cork (2013).
6. Central Statistics Office, Ireland. CSO (2022).
7. Favril, Louis et al. *Individual-level risk factors for suicide mortality in the general population: an umbrella review.* The Lancet Public Health, Volume 8, Issue 11. Belgium, UK. Elsevier (2023).
8. Department of Health and the National Office for Suicide. *Prevention Connecting for Life: Ireland's National Strategy to Reduce Suicide 2015-2020*. Ireland. Oireachtas na hÉireann (2020).
9. Public Mental Health Special Interest Group, *Public Mental Health Briefing*. Ireland. HSE (2015).
10. Department of Justice and Equality. *National Traveller and Roma Inclusion Strategy 2021.* Ireland. Oireachtas na hÉireann (2021).
11. All Ireland Traveller Health Study Research Team, School of Public Health, Physiotherapy and Population Science, University College Dublin. *All Ireland Traveller Health Study: Our Geels.* Dublin. UCD (2010).
12. European Union Agency for Fundamental Human Rights. *Travellers in Ireland: Key Results from the Roma and Travellers Survey 2019*. Ireland. FRA (2019).
13. Pavee Point website. *Evidence & Recommendations on Mental Health, Suicide and Travellers*. Ireland. Pavee Point [Accessed 7th January 2025].
14. National Suicide Research Foundation. *Evidence Brief: Mental Health and Suicide in the Traveller Community*. Cork. NSRF, University College Cork (2021).
15. McGorrian C, Frazer K, et al. *The health care experiences of Travellers compared to the general population: The All-Ireland Traveller Health Study.* University College Dublin, Ireland. Journal of Health Services Research & Policy (2012).
16. European Commission against Racism and Intolerance. *ECRI Report on Ireland (fifth monitoring cycle).* Strasbourg. Council of Europe (2019).
17. Bell S, Russ TC, Kivimäki M, Stamatakis E, Batty GD. *Dose-Response Association Between Psychological Distress and Risk of Completed Suicide in the General Population.* JAMA Psychiatry. London. JAMA Network (2015).
18. Dhalla S, Kopec JA. *The CAGE questionnaire for alcohol misuse: a review of reliability and validity studies.* Clin Invest Med. Vancouver. University of Toronto Press (2007).
19. Hyland P, Vallières F, Shevlin M, Bentall RP, Butter S, Hartman TK, Karatzias T, Martinez AP, McBride O, Murphy J, Fox R. *State of Ireland's mental health: findings from a nationally*

representative survey. Epidemiological Psychiatric Science. Ireland, UK. Cambridge University Press (2022).
20. Tedstone Doherty, Moran and Kartalova-O'Doherty, *'The National Psychological Wellbeing & Distress Survey' (NPWDS) Psychological distress, mental health problems and use of health services in Ireland.* HRB Research Series 5. Dublin. University College Dublin (2008).
21. Health Intelligence Briefing. *Mental Health of Travellers.* HSC, Public Health Agency North Ireland. Ireland, UK. NHS (2012).
22. Walker, M. R. *Suicide among the Irish Traveller Community 2000-2006.* Wicklow. Wicklow County Council (2008).
23. O'Shea, G. *Suicide amongst members of the travelling community*. Critical Social Thinking: Policy and Practice 3. Cork, Ireland. School of Applied Social Studies, University College Cork (2011).
24. Arensman E, Bennardi M, Larkin C, Wall A, McAuliffe C, McCarthy J, Williamson E, Perry IJ. *Suicide among Young People and Adults in Ireland: Method Characteristics, Toxicological Analysis and Substance Abuse Histories Compared.* Cork, Ireland. PLoS One. (2016).
25. Cork County Council. *Traveller Accommodation Programme 2025-2029.* Cork, Ireland. Cork County Council (published 15th Nov 2024).
26. Neuman, W. L. *Basics of social research: Qualitative and quantitative approaches (2nd ed*.). Boston. Allyn and Bacon (2007).

Contributions

• Study designed by Rachael Dunne and Dr Alin Dumitrescu

• Data collected by TNC Doneraile and Rachael Dunne

• Data analysed by Rachael Dunne

• Report written by Rachael Dunne

Acknowledgements

TNC Doneraile for the amazing work they do for their community in North Cork. Margarita O'Driscoll, Bridget O'Brien, Margarita McCarthy, Juliet Prenderville, Beth Fahy.

To all of the Travellers who took part in this survey.

Dr Dumitrescu and the team at North Cork Mental Health Services and St Stephen's Hospital Glanmire for their support throughout the project.

Appendices

Appendix 1: Data Collection Tool

North Cork Traveller Mental Health Study

This study is being conducted by Rachael Dunne, 3rd year Graduate Medicine student at University College Cork under the supervision of Dr Alin Dumitrescu, Consultant Psychiatrist and Clinical Director of the North Cork Mental Health Services.

* Required

Study Information

This survey aims to capture the experiences of the Traveller community with their own mental health and accessing services for mental health problems. This study is anonymous - we will not ask for your name or be able to identify you if you choose to take part. We ask for your age range, approximate area of where you live and your gender so we can better understand where the needs are greatest and who is most at risk. You must be over 18 to participate in this study.

By ticking the consent box below and submitting the form, you consent to your responses to the questions being used in the research study. You do not have to answer any questions you don't want to. Once you have submitted your responses at the end you cannot withdraw them. Your responses will only be seen by Rachael Dunne, the researcher and Dr Alin Dumitrescu. The data will be securely stored on UCC OneDrive, to which the researcher only has access, for a maximum of 3 years.

We understand that this topic is sensitive and could be upsetting. Research shows that Travellers are more affected by mental health issues and have an increased suicide rate. In this survey, we ask about your experience with mental health problems, alcohol or drug use, discrimination and barriers you may have faced in accessing services. We will provide you with information on what to do if you or a loved one are experiencing mental health difficulties and provide the best contact numbers that are specific to North Cork.

We would greatly appreciate your participation as it will help us to understand the mental health needs of the Traveller community which aren't talked about enough. We want to provide culturally competent and inclusive mental health services in the future.

1

Please read and tick the box beside each of the statements below before moving onto the study questions to show your informed consent. *

- [ ] The nature of the study has been explained to me.
- [ ] I understand that my responses will be anonymous.
- [ ] I understand that my responses cannot be withdrawn when I submit them at the end of the form.
- [ ] I understand that I can withdraw from the study before I submit my responses at the end.
- [ ] Information on how to get help is available after the questions and I can access this without submitting my responses.

Survey Questions

This survey should less than 10 minutes to complete but you can take as long as you need. You must be an adult and identify as a member of the Traveller community to take part.

Your responses are anonymous and you do not have to answer any of the questions if you do not want to. If you want to leave the study, close your tab or browser before clicking "Submit" at the very end. By submitting this form, you agree to your responses being used in the research study. There is information on how to get help for mental health in the next section.

2

Tick the box to confirm you identify as a member of the Traveller community: *

- ◯ I identify as a member of the Traveller community

3

What is your age?

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65+

4

Which is your nearest town or townland?

- ◯ Mallow
- ◯ Charleville
- ◯ Kanturk
- ◯ Fermoy
- ◯ Buttevant
- ◯ Blarney
- ◯ Doneraile
- ◯ Mitchelstown

5

What is your gender?

- ◯ Man
- ◯ Woman
- ◯ Non-binary
- ◯ Prefer not to say
- ◯ Other

6

Are you in a relationship or married?

- ◯ Yes
- ◯ No

7

What is your level of education?

- ◯ None
- ◯ Primary school
- ◯ Junior certificate
- ◯ Leaving certificate
- ◯ College
- ◯ Trade apprenticeship

8

How would you describe your mental health currently?

- ◯ Very good
- ◯ Good
- ◯ Fair
- ◯ Bad
- ◯ Very bad

9

Do you suffer from any of the following? Tick all that apply.

- [ ] Anxiety
- [ ] Depression
- [ ] ADHD
- [ ] Bipolar disorder
- [ ] Schizophrenia
- [ ] Addiction or alcoholism
- [ ] I suffer from none of these
- [ ] Other

10

How often do you see your doctor or GP? If you don't have a doctor at the moment, how often did you used to go before?

- ◯ Every few month
- ◯ Every year or two
- ◯ Every few years
- ◯ Rarely
- ◯ Never
- ◯ I don't have a doctor

11

Do you trust your doctor? If you don't have a doctor at the moment, did you trust the one you had before?

- ◯ Yes
- ◯ No
- ◯ I have never seen a doctor

12

Would you be comfortable speaking to your doctor about a mental health problem?

- ◯ Yes
- ◯ No
- ◯ Maybe

13

Have you ever spoken to your doctor about a mental health problem?

- ◯ Yes
- ◯ No

14

Have you ever faced any barriers in getting help from your doctor for your mental health or using mental health services?

- ◯ Yes
- ◯ No

15

If **yes**, what barriers have you faced? You can tick as many boxes as you need or type your answer in "other".

- ☐ Transport
- ☐ Cost or money
- ☐ Privacy or confidentiality issues
- ☐ Family embarrassment
- ☐ Remembering future appointment times
- ☐ Location of appointment not suitable
- ☐ Cannot get time off work to go
- ☐ Cannot get childcare to go
- ☐ The services were not useful for me
- ☐ Other

16

Have you ever attended mental health services, such as seeing a psychiatrist or a psychologist?

- ◯ Yes
- ◯ No

17

If **yes,** were you satisfied with the level of care you received?

- ◯ Yes
- ◯ No

18

If **no**, why not?

19

Have you ever experienced discrimination in a healthcare setting, such as by a nurse, doctor or therapist?

- ◯ Yes
- ◯ No

20

If **yes**, how often has this happened?

- ◯ Frequently or all the time
- ◯ A few times
- ◯ Once or twice

21

Do you regularly drink alcohol or use drugs? (once or more in the week)

- ◯ Yes
- ◯ No

22

If **yes**, have you ever felt like you should cut down on drinking or using drugs?

- ◯ Yes
- ◯ No

23

If **yes,** have you ever felt guilty about drinking or using drugs?

- ◯ Yes
- ◯ No

24

If **yes**, have you ever felt annoyed by people complaining about your drinking or using drugs?

- ◯ Yes
- ◯ No

25

If **yes,** have you ever needed a drink or to use drugs first thing in the morning to steady your nerves?

- ◯ Yes
- ◯ No

26

If you were to have a mental health crisis, do you know where to get help? (This includes feeling like you cannot cope, you do not want to keep living or want to harm yourself or someone else).

- ◯ Yes
- ◯ No

27

Do you have any thoughts about harming yourself or about ending your life?

- ◯ Yes, often
- ◯ Yes, sometimes
- ◯ No

28

Have you ever tried to take your own life?

- ◯ Yes
- ◯ No

29

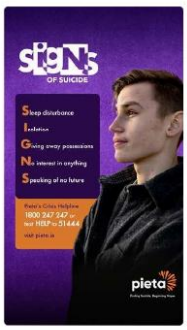
Has anyone close to you taken their own life?

- ◯ Yes
- ◯ No

30

Would you like to say anything else on the topic of mental health?

How to get help for mental health



If you need help with your mental health, please contact your **doctor or GP**. If you do not have a doctor/GP, you can contact **SouthDoc** on **0818 355 999**. They may be able to help you directly, and if not they can refer you to another doctor that can. It is helpful to tell someone you trust that you are suffering.

Travellers of North Cork has an office in Doneraile by the bridge and can help you find low cost counselling or mental health workshops. Their number is **022 71035**. They are a non-judgemental Travellers rights advocate group run by both settled and Traveller community workers who are happy to have a chat with you over a cup of tea.

Pieta House is an excellent **free** mental health charity. Call or text a therapist or get advice at www.pieta.ie
Pieta House: 1800 247 247 (free of charge, any time Monday to Friday). Or **text HELP to 51444.**

If you or a loved one are experiencing a mental health crisis, contact your doctor/GP, SouthDoc (out of hours doctor in your area) or the nearest emergency department (CUH, the Mercy, Tralee or Limerick). If you cannot get to an emergency department or if you are not sure what to do, call **112 or 999** or call Samaritans on **116 123** (free of charge, any time).

Appendix 2: Qualitative Data

Responses to Q30 - 'Would you like to say anything else on the topic of mental health?'

‘’I don't regret seeing a psychiatrist it’s the best thing you could do to save yourself from making a permanent decision if you're having a mental breakdown. It’s nice to go to your doctor and have them sit down with you and take the time and decide if you need to go to a psychiatrist. This is better than counselling or group therapy for me, it’s all about trust, privacy and confidentiality.’’

‘’I'm an alcoholic and take each day as it comes in 24 hours. I gave up alcohol 10 years ago for the sake of myself and my children plus family as it affected all my family including myself especially but my mental health is not as bad as I was when I did drink. I drank to take away pain but refused to give it up at the time and my life was unmanageable. Now I won't say it is manageable now but it is a lot better without alcohol. My mental state can be very much bad sometimes but now I'm aware that drink does NOT solve anything.’’

‘’There is a lack of information and access to MH services for Travellers in rural areas’’

‘’More services and more info on the services I’d like to no more about and smaller waiting lists’’

‘’Better health services’’

‘’Helping yourself is a better way than consulting a doctor for your mental health in my opinion’’

‘’More travellers need to engage in mental health services’’

‘’It is a big issue with Travellers’’

‘’I would like to see more done for young Travellers especially around accessing MH services’’

‘’I would like to take part in mental health training’’

‘’More services made friendly for travellers’’

‘’More services readily available in local area’’

‘’I would like to see more areas with mental health services for young people as a lot of Young Travellers are taking their own lives due to lack of services for different age groups.’’

‘’[Referring to Q26: ‘Do you know how to get help in a mental health crisis?’] I would turn to my sister who work with the Travellers of north Cork for help; my sister knows where to go for me.’’

‘’[Referring to Q26: ‘Do you know how to get help in a mental health crisis?’] My mother is a community health worker, I would turn to her for help. My mother works with Travellers of north cork; she knows where to get me help.’’

‘’For young people between 16 and 18 their needs to be something in place as I was stuck between those ages for MHS.’’

Appendix 3: Summary of Estimations of Individual Relative Risk of Suicide in the Mental Health Risk Score

Score Component/Item	Associated Relative Risk	Literature Source
Current mental state		
Very good	1	Bell et al. (2015)
Good	1	Bell et al. (2015)
Fair	1.13	Bell et al. (2015)
Bad	1.83	Bell et al. (2015)
Very bad	2.43	Bell et al. (2015)
Mental disorder diagnoses		
Anxiety	4.1	Favril et al. (2023)
Depression	12.3	Favril et al. (2023)
ADHD	6.7	Favril et al. (2023)
Bipolar disorder	12.3	Favril et al. (2023)
Addiction/alcoholism	4.4	Favril et al. (2023)
EUPD (reported as ‘’other’’)	8.1	Favril et al. (2023)
Schizophrenia (not reported in this study)	13.2	Favril et al. (2023)
Suicide related factors		
Thoughts of deliberate self-harm or suicidal ideation (any frequency)	5.6	Favril et al. (2023)
Previous suicide attempt	16.3	Favril et al. (2023)

MHRScore = (RR current mental state) + (RR mental disorder diagnoses) + (RR attempted suicide)

Appendix 4: STROBE Checklist for Cross-Sectional Studies

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	4
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	7
Methods			
Study design	4	Present key elements of study design early in the paper	8
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	8-10
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8-10
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	8-10
Bias	9	Describe any efforts to address potential sources of bias	8, 19, 20
Study size	10	Explain how the study size was arrived at	8, 19, 20
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	8-11
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	10, 11
		(*b*) Describe any methods used to examine subgroups and interactions	10, 11
		(*c*) Explain how missing data were addressed	10
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	
		(*e*) Describe any sensitivity analyses	
Results			

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	12
		(b) Give reasons for non-participation at each stage	
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	12-17
		(b) Indicate number of participants with missing data for each variable of interest	10
Outcome data	15*	Report numbers of outcome events or summary measures	12-17
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	12-17
		(*b*) Report category boundaries when continuous variables were categorized	12-17
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	15
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	10-17
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	19
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	18-20
Generalisability	21	Discuss the generalisability (external validity) of the study results	20
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	20

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.