

Suicidal Behaviours in LGBT Populations

Final Report

Funded by



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Main Messages

- Younger LGBT suicides were characterised principally by non-acceptance of sexuality/gender (by family but also by self).
- LGBT suicides were more likely than living controls to feel (very) bad about their identity and internalised trans/homophobia and internalised shame were also elevated.
- Dissatisfaction with appearance was greater in LGBT suicides vs. living controls.
- LGBT individuals who died by suicide went through 'coming out' milestones some 2 years earlier, on average, than living LGBT controls.
- There was high incidence of relationship conflict in the lives of LGBT people who died by suicide and older suicides were chiefly characterised by this.
- LGBT suicide cases were more likely than living LGBT people to have experienced a serious physical assault as well as a sexual assault.
- LGBT suicides had 23 times higher odds of a current major depressive episode than living LGBT people. Anxiety disorders were also more prevalent in LGBT suicides.
- Odds of a previous attempt were 9 times higher in LGBT suicides than living controls.
- The prevalence of substance use disorders was lower in LGBT than in the non-LGBT suicide cases but elevated in suicides compared to LGBT living controls.
- LGBT suicide cases were more likely to have been under the care of psychiatrist and to be on medication and been a resident of a correctional or mental health facility.
- There was a higher prevalence of HIV/AIDS in LGBT suicides than non-LGBT suicides but not between suicides and living controls.
- LGBT people may require targeted approaches in mental health services, school-based programs, and public health and stigma reduction campaigns.
- The need for services to be inclusive of sexuality and gender diversity is highlighted.

Executive Summary

This study aimed to identify factors that are specific to LGBT suicide cases in Australia when compared to non-LGBT suicides and to living LGBT controls. To the best of our knowledge, this is the first study of its kind ever in the Australian context and one of very few internationally to investigate these factors. Data were gathered from two main sources. Firstly, all cases in the Queensland Suicide Register (QSR; a comprehensive database of all suicides in Queensland since 1990) from 2000 to 2009 were rechecked for potential indicators of sexual orientation and gender identification. Three comparison cases of non-LGBT suicides for each LGBT suicide, matched by age and gender, were also allocated. We identified 35 LGBT cases and allocated, thus, 105 non-LGBT comparison cases. Secondly, psychological autopsy (PA) interviews were carried out with people who knew well an LGBT person that had died by suicide. The PA is designed to reconstruct the events leading up to the suicide and how these impacted the lifecycle of the deceased. For comparison, 3 matched living LGBT control participants for each suicide case were interviewed with a self-report version of the PA schedule. In total, 27 PA and 81 control interviews were conducted.

The results paint a picture of a great deal of emotion, conflict, and distress in the lives of those LGBT individuals that died by suicide. Younger suicides were characterised principally by non-acceptance (by family but also by self) and this figured prominently in older suicides as well. LGBT suicides were several times *less* likely to have an accepting father or mother. Lack of *self*-acceptance similarly emerged, with those who died by suicide being more likely to feel (very) bad about their LGBT identity and internalised trans/homophobia—in particular, *personal feelings* about being LGBT as well as *moral* and *religious* attitudes about gender and sexuality—and internalised shame also being significantly more common among LGBT suicides. Lower self-esteem was also reflected in

greater dissatisfaction with appearance in LGBT suicides vs. living controls. LGBT individuals who died by suicide were also found to go through 'coming out' milestones some 2 years earlier, on average, than living LGBT controls.

The high incidence of interpersonal conflict in the lives of LGBT people who died by suicide in the review of the QSR is remarkable, with 65.7% having experienced some form of relationship problem prior to death. This was also reflected in the PA interviews, where older suicides were chiefly characterised by romantic relationship difficulties and romantic relationship problems were also a defining feature of early suicides.

The finding that LGBT suicide cases were more likely than living LGBT people to have experienced a serious physical assault as well as a sexual assault provides further important information about pathways to suicide. This was in the context of a higher prevalence of aggressive behaviours and domestic violence orders in suicide cases vs. living controls.

In terms of mental health, it is clear that the prevalence of depression in LGBT people who died by suicide was elevated when compared to non-LGBT suicides, and extremely so when compared to living LGBT people, the odds of a current major depressive episode being 23 times higher on death than in a living LGBT individual. Anxiety disorders were also significantly more prevalent in LGBT suicides compared to living controls. Other disorders that emerged as significantly more prevalent in LGBT suicide vs. living LGBT individuals were antisocial personality disorder and psychotic disorder, although psychotic disorder was more common in non-LGBT suicide cases. Odds of a previous suicide attempt were almost 10 times higher among LGBT suicide deaths than living controls.

The prevalence of substance use disorders was significantly lower in LGBT than in the non-LGBT suicide cases. Nevertheless, a higher incidence of alcohol and substance use disorders emerged in the comparison between LGBT suicides and living LGBT controls.

Substance dependence and alcohol dependence and abuse were all significantly elevated in suicides compared to living controls.

Odds were 8 times higher in LGBT people that died by suicide to be unable to work because of their mental health than in living controls. In terms of other psychological variables, those who died by suicide were significantly higher neuroticism in particular, but also lower agreeableness, compared to controls.

In terms of help-seeking, LGBT suicide cases were significantly more likely than living controls to have been under the care of psychiatrist and to be on medication. They were also more likely to have ever been a resident of a correctional or mental health facility.

There was a significantly higher prevalence of HIV/AIDS in LGBT suicides than non-LGBT suicides but not between suicides and living controls.

In summary, the key factors found to relate to suicide in LGBT people from the study are a lack of acceptance by family and self, a high incidence of romantic relationship conflict and aggressive behaviours, and a greater prevalence of depression and anxiety and alcohol and substance use disorders. The findings suggest that LGBT people may require targeted approaches in mental health services, including relationship and family counselling, school-based programs, and public health and stigma reduction campaigns, particularly around supporting full and healthy development of an LGBT identity and the provision of culturally appropriate and accessible services. The need for services to be inclusive of sexuality and gender diversity is highlighted by the apparent missed opportunities for engagement and intervention with LGBT individuals who died suicide (more frequent treatment with medication and by a psychiatrist).

Context

Suicide is preventable yet every 40 seconds a person dies by suicide somewhere in the world(1). In Australia, every year, more than 2,000 lives are lost to suicide(2) and suicide constitutes a major cause of injury-related mortality. Estimates show that there are 10-40 times as many suicide attempts and many more have suicidal ideation(1). Furthermore, suicidal behaviours place a remarkable economic and social burden on society(3).

Lesbian, gay, bisexual, transgender, and intersex (LGBTI) people were recognised as being specific high risk groups for suicide in a 2010 Australian Senate Committee report(4). Transgender individuals were singled out as being at particularly high risk. The Committee recommended that these groups be recognised as being more vulnerable to suicidal behaviours (both fatal and non-fatal, that is, behaviours such as death by suicide, suicide attempts, and intentional self-harm, but also suicidal ideation and suicide plans) and that a 'targeted approach' to prevention and awareness be put in place. In its response to this report, the Commonwealth Government(5) also acknowledged that LGBTI groups are at high risk and supported the recommendations that more carefully targeted approaches be implemented for LGBTI individuals. The Department of Health and Ageing(6); now the Department of Health) LIFE framework for the prevention of suicide in Australia acknowledges that gay and lesbian people are among the 'highest risk' groups. The Department recently launched a national suicide prevention project, the first of its kind in the world, specifically targeting LGBTI individuals(7).

There is, however, a scarcity of recent international studies on LGBTI people who have died by suicide, and findings from earlier research may not be reliable. Shaffer and colleagues(8) found no evidence for an increased risk of suicide among individuals who had been openly gay in their psychological autopsy study in New York City. In a study of suicides

in San Diego, Rich, Fowler, Young, and Blenkus(9) found similar risk factors associated with suicides among (known) gay and straight men, and no greater incidence of previous suicide attempt, psychiatric treatment, or likelihood of living alone among gay men. However, the fact that these studies were carried out approximately 20 years ago (or more) raises doubt as to whether or not identification of same-sex attracted individuals was very accurate.

One noteworthy exception in more recent research is a 2011 Danish study(10). In that study, Mathy and colleagues took advantage of the introduction of same-sex domestic registered partnerships in 2001 in Denmark to cross-reference marriage and partnership data with suicide data from the Danish National Board of Health for the period 1990-2001. Significant differences emerged in the data for men only. The age-adjusted suicide mortality risk was nearly eight times greater for men in same-sex registered domestic partnerships than men who had ever been married and nearly twice as high as men never married.

In Australia, the majority of available research is represented by “grey” literature and there is very little in terms of population-based studies. The Australian Bureau of Statistics (ABS; 11) holds nationally representative data on non-fatal suicidal behaviours (e.g., suicidal ideation, self-harm, and suicide attempt) comparing “homosexual/bisexual” and “heterosexual/sexuality not stated” males and females aged 16-85 years. Sexual minorities report higher incidence of suicidal thoughts, suicide plans, and suicide attempt. A review of the evidence base for a heightened vulnerability to suicidal behaviours among LGBTI populations in Australia by our study team(12) found that sexual minorities are indeed at a higher risk for non-fatal suicidality.

In terms of suicide mortality, however, De Leo and colleagues(13) noted that sexual orientation is seldom recorded at death in Australia. As such, suicide in LGBT populations is probably underreported in Australia and one of the reasons for this is the lack of information

gathered on sexual orientation or identification. Skerrett and colleagues(14) reported that there were no existing studies on the relationship between those that have died by suicide and sexuality in Australia at the time of writing.

Given the significant amount of research carried out on non-fatal suicidal behaviours among LGBTI populations and the almost complete non-existence of studies into fatal behaviours, there is the need to investigate the characteristics of those LGBTI suicides that are able to be identified. The specific aims of the present study were the following:

- To identify the predictive factors (demographic, medical, and lifestyle) related to suicide in LGBT communities
- To analyse pathways to suicide in LGBT individuals and the role of depression and anxiety in the process
- To establish recommendations for suicide prevention in LGBT communities, including early detection of suicide risk in LGBT persons, enhancement of resilience and help-seeking behaviours, and provision of adequate health- and community services addressing their needs.

Implications

We were able to identify factors that seem to be specific to LGBT suicide cases in Australia when compared to non-LGBT suicides and to living LGBT controls. To the best of our knowledge, the present study is the first of its kind ever in the Australian context and one of very few internationally to investigate these factors.

The results paint a picture of a great deal of emotion, conflict, and distress in the lives of those that have died by suicide. The life charts analysis of the psychological autopsy (PA) component (component 2) revealed that early (younger) suicides are characterised

principally by non-acceptance (by family but also by self) and this figured prominently in late (older) suicides as well. According to quantitative analysis of the PA data, furthermore, LGBT suicides were several times less likely to have an accepting father or mother. Lack of *self*-acceptance similarly emerged, with those who died by suicide being more likely to feel (very) bad about their LGBT identity and internalised trans/homophobia—in particular, *personal feelings* about being LGBT as well as *moral* and *religious* attitudes about gender and sexuality—and internalised shame also being significantly more common among LGBT suicides. Lower self-esteem was also reflected in greater dissatisfaction with appearance in LGBT suicides vs. living controls.

It is likely that the pattern of LGBT individuals who die by suicide of going through ‘coming out’ milestones some 2 years earlier, on average, than living LGBT controls plays into lack of acceptance by self and others. Coming out in adolescence and early adulthood has previously been reported as a predictive factor for non-fatal suicidal behaviours specific to LGBT individuals(15, 16). Congruent with the so-called ‘Homosexual Identity Formation’ process, the development of minority sexual identities begins with stages of confusion and comparison with the hegemonic heterosexual identity before (potentially) moving on to tolerance, acceptance, pride, and synthesis(17). Additionally, homophobia may lead to higher prevalence of suicidal behaviours, especially when it is internalised, resulting in shame, hostility, and self-hatred(15). Gay men who suffer from ‘minority stress’ (internalised homophobia, stigma, and actual discrimination) have previously been shown to experience elevated levels of psychological distress(18). It appears, thus, that going through coming out milestones at an early age is associated with an incomplete formation of gender- and sexuality-related identity. Given that a recent US study(19) found that coming out at an earlier age was associated with more positive psychosocial adjustment, it is likely, as also

suggested by the results of this study, that this is related to an environment that is not conducive to acceptance: unsupportive parents and trans/homophobic moral and religious attitudes.

The high incidence of interpersonal conflict in the lives of LGBT people who died by suicide in the review of the LGBT cases in the Queensland Suicide Register (QSR; component 1) is remarkable, with 65.7% having experienced some form of relationship problem prior to death. This finding was reflected in the life chart analysis, where late (older) suicides were chiefly characterised by romantic relationship difficulties and romantic relationship problems were also a defining feature of early suicides.

Furthermore, our finding that LGBT suicide cases were more likely than living LGBT people to have experienced a serious physical assault as well as a sexual assault provides further important information about pathways to suicide. Previous research has found that gay individuals are at a higher risk of sexual assault and those who have suffered physical assault are at a higher risk of suicidal behaviour(16). This is also in the context of a higher prevalence of aggressive behaviours and greater likelihood of a domestic violence order being in place in suicide cases vs. living controls.

In terms of mental health, it is clear that the prevalence of depression in LGBT people who died by suicide was elevated when compared to non-LGBT suicides, and extremely so when compared to living LGBT people, the odds of a current major depressive episode being 23 times higher on death than in a living LGBT individual. Anxiety disorders were also more prevalent in LGBT suicides compared to living controls. This reflects the findings of earlier research on the health and wellbeing of 3,835 LGBTI Australians by Leonard and colleagues (2012) which found that 55% of females and 40% of males scored in the “very high” level of psychological distress as measured by the K10 scale, compared to 11.4% and 7.1% of all

respondents, respectively, in the ABS(11) national survey using the same scale. While the K10 measures non-specific psychological distress, it is based on symptoms of depression and anxiety, and very high scores may be indicative of the presence of mood disorders. Other disorders that emerged as more prevalent in LGBT suicide vs. living LGBT individuals (but not vs. non-LGBT suicides) were antisocial personality disorder and psychotic disorder although psychotic disorder was more common in non-LGBT suicide cases in the review of the QSR. Odds of previous attempt were almost 10 times higher among LGBT suicide deaths than living controls—an important finding given that suicide attempt is often considered the single most important predictor of eventual death by suicide(20).

While LGBT people are often considered at a higher risk for substance use disorders than the broader population(21), it is noteworthy that prevalence of these was in fact lower in LGBT than in the non-LGBT suicide cases. Nevertheless, the higher likelihood of illicit drug use is an area for consideration, especially in light of the higher incidence of alcohol and substance use disorders that emerged in the comparison between LGBT suicides and living LGBT controls. Substance dependence and alcohol dependence and abuse were all significantly elevated in suicides compared to living controls.

The consequences of this greater prevalence of various mental health issues are evident, with odds of LGBT people that died by suicide of being unable to work because of their mental health than living controls being more than 8 times higher. In terms of other psychological variables, significantly higher neuroticism in particular, but also lower agreeableness, among those who died by suicide compared to controls is consistent with other research on personality and suicide death in the Australian context(22).

In terms of help-seeking, LGBT suicide cases were more likely than living controls to have been under the care of psychiatrist and to be on medication. They were also more likely to have ever been a resident of a correctional or mental health facility.

The higher prevalence of HIV/AIDS in LGBT suicides than non-LGBT suicides is not surprising but has important implications for public health. Male-to-male sex still accounts for 70% of HIV diagnoses in Australia(23). In addition to the obvious health risk of contracting HIV, somatic illnesses have themselves been found to be risk factors for suicide(24) and hence the particular importance of addressing this issue. Nevertheless, while 3 of the 35 LGBT cases from the QSR had HIV/AIDS and this figure is relatively high (and may represent a case of underreporting) given that the prevalence rate of HIV/AIDS among GB men in Queensland has been estimated at 4%(25), comparison of the prevalence of HIV/AIDS between suicides and living controls did not find a statistically significant difference. At 15.4%, however, the incidence was similarly high as in the QSR component and HIV/AIDS cases also formed a distinct subgroup of late suicides; like the majority of other late suicides, however, they were also characterised by recent romantic relationship conflict. This serves to highlight, then, the importance of ongoing government initiatives and support of non-government organizations working to prevent HIV infection among gay and bisexual men in particular. Although other physical health problems were a common feature in the life charts in the PA component, these were not significantly more prevalent than living controls and neither were they more prevalent in the LGBT suicide cases from the QSR than the non-LGBT cases.

In summary, the key factors found to relate to suicide in LGBT people from the study are a lack of acceptance by family and self, a high incidence of romantic relationship conflict and aggressive behaviours, and a greater prevalence of depression and anxiety and alcohol

and substance use disorders. The findings suggest that LGBT people may require targeted approaches in mental health services, including relationship and family counselling, school-based programs, and public health and stigma reduction campaigns, particularly around supporting full and healthy development of an LGBT identity and the provision of culturally appropriate and accessible services. The need for services to be inclusive of sexuality and gender diversity is highlighted by the apparent missed opportunities for engagement and intervention with LGBT individuals who died suicide (more frequent treatment with medication and by a psychiatrist).

Limitations

There are certain limitations to this project that should be acknowledged. In relation to component 1, the information contained in the QSR is collected chiefly by police officers through interviews with next of kin (NOK) and the accuracy of this is likely to be affected the grief experienced in the loss of a loved one to suicide. We were also unable to analyse all the social, cultural, and psychological factors that may have been associated with the suicides of the individuals studied, particularly as these may have been unknown to the NOK. What is more, in neither component can the factors we were able to identify be claimed to have a causal relationship with the suicidal acts concerned due to the nature of the research, and caution should be exercised in interpreting the results. Perhaps the most important limitation however is the possible under-identification of LGBT suicide cases in the QSR and therefore limited number of suicide cases available for analysis. Of those responding to the 2007 Survey of Mental Health and Wellbeing(11), a nationally representative survey, 1.87% of men and 1.85% of women reported being “homosexual” or “bisexual”, whereas we were only able to identify 0.58% of cases in the period studied as being LGBT. Given the evidence

for a gradually decreasing yet continued existence of stigma and discrimination related to sexuality in Australia(e.g., 26), it could be expected that the ABS data still represent underreporting of minority sexuality (i.e., reluctance to truthfully report sexuality). Furthermore, taking the higher incidence of depression and anxiety in LGBTI people found in other large-scale studies(e.g., 27) into account, it could be expected that incidence of LGBTI suicides would be higher rather than lower than that of non-LGBTI suicides. The relatively small number of identified LGBT cases also limited the statistical power of the analyses conducted.

The PA component relied on the voluntary self-selection of participants to provide information about an LGBT person they knew that had died by suicide. Thus, the cases included are only those where it was known that the person identified or behaved in a way that could classify them as gender- or sexuality-diverse. We have no information about those suicides that occur among individuals whose LGBT identity and/or behaviour are never revealed and it may well be that the characteristics of such cases are distinct. It should also be remembered that, as a retrospective informant report, the PA method is subject to recall bias and the potentially skewed understanding of the knowledgeable other of the deceased's thoughts, feelings, and behaviours. Furthermore, as living LGBT controls were also self-selected, the characteristics of these participants cannot be claimed to be representative of the wider LGBT population in Australia. The finding that level of education was higher among controls than suicides, for example, may simply be an artefact of the recruitment process.

Approach

Component 1

Details of this component are also reported in a journal article published by the study team(14). Component 1 entailed an analysis of LGBT suicide cases contained in the Queensland Suicide Register (QSR), a comprehensive suicide database maintained by AISRAP. The QSR holds records of all suicides in Queensland since 1990, and provides information on a wide range of demographic, psychosocial, psychiatric, medical, contextual, and behavioural aspects of suicide cases(28). Currently, the QSR does not systematically collect information on sexuality or transgendered status. However, all QSR cases from 2000 to 2009 ($n = 5,966$ cases) were rechecked for potential indicators of individuals' sexual orientation and gender identification. The QSR was further scrutinised in order to allocate three comparison cases of non-LGBT suicides for each LGBT suicide, matched by age (up to two years younger or older) and gender (matched to the gender of identification in the one transgender case); this was done to be able to compare the characteristics of LGBT suicide cases with non-LGBT cases and increase the statistical power of the study. Matching for age and gender also helps to reduce the confounding nature of these variables, which is particularly important in a study of this size.

LGBT suicides were compared to the non-LGBT suicides in order to identify similarities and differences. We examined psychiatric disorders (including depression and anxiety), as well as undiagnosed psychological and behavioural disturbances, substance abuse, living conditions, and life events (e.g., conflicts with parents and peers) for each suicide case. A multifactorial analysis was performed and LGBT suicides were compared to non-LGBT suicides applying conditional logistic regression, an appropriate method for nested case-control studies with multiple controls(29). Odds ratios (ORs) with 95% confidence intervals

are presented. For factors where either LGBT or non-LGBT suicides had four cases or less, Fisher's exact test was used. Where appropriate, a Chi-square test was also used to test for differences between LGBT and non-LGBT cases. The level of statistical significance was set at $p < 0.05$.

Component 2

Component 2 of the project comprised a psychological autopsy (PA) study. The PA method was applied in order to analyse the circumstances surrounding suicide and the suicidal process throughout the lives of LGBT people in the study. The PA is the 'gold standard' of investigation (notwithstanding its limitations; 30). In a PA, a knowledgeable informant is interviewed to gain information pertaining to and to reconstruct the events leading up to the suicide and how these impacted the lifecycle of the deceased. Despite wide use of PA methodology in research related to fatal suicidal behaviours, it has been applied in only a limited number of LGBT studies(8, 9). The PA instrument used in this study was based on one effectively used by AISRAP on other large-scale studies(e.g., 31) and consisted of the following sections: demographic questions, sexuality and gender profile, history of suicide attempts and exposure to suicidal behaviours in others, aggressive behaviour inventory, history of physical and mental health problems, details of bullying and victimisation experienced, Paykel Interview for Recent Life Events(32), Internalized Shame Scale(33), internalised homo/transphobia scale(34), the Australian Personality Inventory(35), the Bille-Brahe Social Support Scale(36), details of hobbies and friendships, and the Mini International Psychiatric Interview (MINI; 37). A total of 27 PA interviews were conducted with someone who knew an LGBT person that had died by suicide. In addition, 3 living LGBT control participants were interviewed with a self-report version of the PA schedule about their own

lives. Controls were matched by age (+/- 2 years) and gender (identified gender in the trans cases/controls).

Analysis was conducted using two principal methods. The first was the construction of life charts to identify critical time points and the potential role of depression and anxiety and other psychiatric disorders. A life chart template was adapted from one that had been previously successfully used by AISRAP to analyse and represent pathways to suicide. The categories in it are based on the sections of the (modified version of the) Interview for Recent Life Events(32) included in the PA. The existing life chart template was modified to reflect the modifications made to the Paykel Interview, namely to include life events related to sexuality and gender. The 14 categories in the life charts are the following: non-romantic relationships, romantic relationships, education, employment, financial difficulties, bereavement (including object loss) and family health, physical health, forensic, moves (intra- and inter-city and international), mental health and suicidality, contact with services, sexuality and gender, exposure, and other relevant information.

Two the researchers of this project independently scrutinised the life charts in order meaningfully classify them into naturally occurring groups. The researchers then met to discuss and come to an agreement on the classification.

The second method was a statistical analysis, similar that of component 1, in which a multifactorial analysis was performed and suicide cases were compared to the living controls, applying conditional logistic regression. Odds ratios (ORs) with 95% confidence intervals are presented. For factors where either suicide cases or controls had less than four cases, Fisher's exact test was used instead. For continuous variables, an independent samples *t*-test with a Welch correction was used. The level of statistical significance was set at $p < 0.05$.

Results

Component 1

General Characteristics of Cases

We identified a total of 35 lesbian ($n = 10$), gay ($n = 22$), bisexual ($n = 2$), and transgender ($n = 1$) suicide cases for the period 2000-2009. No cases of suicide by intersex people were identified. These numbers are a likely underestimation of LGBTI suicides. The average age at the time of death of the individuals identified was 36.7 ($SD = 12.9$; gay), 36.0 ($SD = 15.0$; lesbian), and 26.0 ($SD = 7.0$; bisexual) years. The transgender individual was aged 56 years.

For both LGBT and comparison cases, the majority of suicides occurred among individuals residing in metropolitan areas (57.1% and 59%, respectively), with the remainder of LGBT cases being either regional (40%) or institutionalised (2.9%) and the remainder of non-LGBT cases being regional (35.2%), remote (4.8%), or institutionalised (1.0%). A Chi-square test revealed that the differences were not significant ($\chi^2 = 2.51$, $df = 3$, $p = 0.473$).

In terms of suicide method, no statistically significant differences were detected between hanging, motor vehicle exhaust gas, and poisoning. The proportion of non-LGBT suicides that used firearms was 4.8%, while there were no cases of firearm suicides among LGBT cases. However, even this difference was not significant (Fisher's exact test = 0.331).

LGBT individuals were more likely than the comparison cases to have been found by their partner, with the difference close to statistical significance (OR = 2.61, $p = 0.065$). A slight prevalence was noted for LGBT cases to have left a suicide note (48.6%) than non-LGBT cases (30.5%; OR = 1.95, $p = 0.070$). LGBT individuals were at almost three times greater odds to have been treated by an ambulance at the scene, with the difference being

statistically significant (42.9% vs. 22.9%; OR = 2.85, $p = 0.020$). A general overview of the details of the suicide incident can be found in Table 1. All tables appear in the Appendix.

Physical Health

Average body mass index (BMI) of decedents was 25.1 ($SD = 4.0$; gay) and 20.4 ($SD = 1.9$; lesbian) and 23.6 ($SD = 4.7$; male non-LGBT) and 23.1 ($SD = 9.0$; female non-LGBT). A healthy BMI falls within the range 18.5-24.9 (State Government of Victoria, 2013). The difference between lesbian and female non-LGBT cases approached statistical significance ($p = 0.094$), with lesbian individuals having a lower BMI. The difference between gay and male comparison cases was not significant ($p = 0.762$). The average BMI for bisexuals could not be calculated as data were only available for one individual.

Table 2 presents the results related to physical health. Findings in two areas of physical illness were statistically significant or very close thereto. Firstly, the proportion of LGBT individuals with any infectious disease was 11.4% compared to 2.9% in the comparison group (Fisher's exact test = 0.066). This finding is mainly due to the fact that fully three LGBT individuals were HIV+ or had full-blown AIDS when they died by suicide, whereas there were no non-LGBT people who were HIV+ or had AIDS (Fisher's exact test = 0.015). This represents 8.6% of LGBT cases, or almost one in ten LGBT individuals.

Mental Health

Findings related to mental health are shown in Table 3. The difference in the prevalence of any psychiatric disorder between LGBT and comparison cases was irrelevant (57.1% vs. 55.2%, respectively; OR = 1.08, $p = 0.842$). Nevertheless, it was significantly more likely that depression was mentioned in the cases of LGBT suicides (70.6%) than in non-LGBTs (52.4%; OR = 2.44, $p = 0.050$) and the incidence of diagnosed depression came close to statistical significance (50.0% vs. 33.3%; OR = 2.28, $p = 0.066$). Anxiety disorders were

diagnosed in very few cases of both groups: 5.9% of LGBT and 3.8% of comparison cases (Fisher's exact test = 0.634). In terms of psychotic disorders, 12.4% of non-LGBTs had been diagnosed with such a disorder, yet there were no such diagnoses whatsoever among LGBT individuals, a finding which was statistically significant (Fisher's exact test = 0.038). No difference in prescription medication usage was found overall (45.7% in LGBT vs. 52.4% in comparison cases; OR = 0.76, $p = 0.487$).

The prevalence of illicit drug use was close to be significantly different: 17.1% of LGBT vs. 6.7% of comparison cases (OR = 3.00, $p = 0.070$).

Life Events

Table 4 presents the findings in relation to life events. In terms of relationship problems overall, LGBT individuals experienced such problems in the majority (65.7%) compared to exactly one-third in comparison cases, the difference being statistically significant (OR = 3.76; $p = 0.002$). Within the category of relationship problems, relationship conflict was significantly more common in LGBT than in non-LGBT cases (31.4% in LGBT vs. 9.5% in comparison cases; OR = 3.73, $p = 0.005$). While family conflict was less common among LGBT suicides than non-LGBT (5.7% vs. 17.1%, respectively; Fisher's exact test = 0.160), the difference was not statistically significant. Interpersonal conflict, however, was revealed to be more frequent among LGBT individuals (14.3%) than in comparison cases (4.8%), with the difference approaching statistical significance (OR = 3.00, $p = 0.082$).

Finally, "other" life events occurred somewhat more frequently in LGBT suicides (35.3%) than in non-LGBT suicides (20.0%) (OR = 2.00, $p = 0.086$). The QSR was scrutinised to unpack the content of these other events. These ranged from fear of contracting HIV to social isolation and alienation and conflict over sexuality.

Component 2

Life Charts

Given the diverse nature of the issues faced by the two trans individuals in the study, their life charts are considered separately. The lesbian ($n = 5$) and gay cases ($n = 19$) and the one bisexual case were found to cluster, in the first instance, into early and late suicides, that is, younger and older age at the time of death. The final taxonomy for the life charts is displayed in Table 11.

Individuals in the early group ($n = 11$) were aged from 19 to 30 years and are principally characterised by a lack of acceptance of sexuality from self ($n = 5$) or family ($n = 8$), and in half of these cases the father was specifically mentioned. One early suicide was atypical, as it was not characterised by lack of acceptance of sexuality and so it is considered separately. The remaining 10 individuals in that group all experienced suicidal behaviours as ongoing problems (e.g., chronic suicidality) or actual life events (e.g., a suicide attempt). Six also had ongoing mental health problems (e.g., alcohol and drug abuse). In the majority of cases ($n = 9$), there were problems around romantic relationships in the period immediately prior to death (consisting, variously, of breakups, conflict, and romantic rejection) as well as non-romantic relationship conflict (e.g., conflict with friends and family, and fathers in particular; $n = 9$) and physical health concerns (e.g., migraines, concerns over weight, and sexual health concerns; $n = 8$) at the time of death. All but one had significant problems at work ($n = 7$) and/or with their studies ($n = 3$). Just over half ($n = 6$) were experiencing financial difficulties. Over their lifetimes, 7 of the cases had exposure to a suicide attempt or suicide death in a close other. Other key distal factors (from earlier life or childhood) were bullying ($n = 5$), parental conflict ($n = 4$), and sexual abuse ($n = 3$). The one atypical case also included work and study problems, physical health concerns, and suicidality, as well as

lifetime incidence of bullying, sexual abuse, and parental conflict. An example of a typical life chart for the early group appears in Figure 1 (all figures appear in the Appendix). “Typical” life charts were created to provide a visual representation of the characteristic features of the lives of the individuals in each group. Typical rather than actual charts are provided in order to protect the identities of the individuals that died.

Individuals in the late group were aged 32-61 years ($n = 14$), although a large part were clustered in the 37-43 year age bracket ($n = 9$). The defining feature of this group is the presence of romantic relationship problems in the period immediately leading up to death. This is true for all cases except those who made up a subgroup ($n = 3$) who, like the early group, experienced a lack of acceptance (by self, parents, and partner’s parents, in 1 case each). Aged between 38 and 43 years at death, these cases fell within the general clustering of the overall late group. The subgroup was also characterised by non-romantic relationship conflict, work problems, and physical health problems at the time of death. All of these individuals had also experienced problems related to romantic relationships but the temporal association was more distal than the other late cases where it occurred at the time of death. All cases in this subgroup had life events related to sexual ($n = 2$) or physical abuse ($n = 2$) and 2 had ongoing problems related to mental health and suicidality (including, in both cases, suicide attempts and drug use) and experienced lifetime exposure to suicidal behaviours in a close other; there was also lifetime incidence of bullying and parental conflict reported in 1 case.

Of the remaining 11 cases—that is, the romantic relationship problems subgroup—4 were gay males with HIV. In the majority of cases ($n = 3$), there were life events or ongoing problems related to suicidality and non-romantic relationship problems, and all were experiencing work problems. Furthermore, in 2 of the HIV cases, the parents of the person

did not accept their sexuality; these cases are nevertheless included in the romantic relationship problems subgroup as this is the more characteristic feature of the late suicides. In terms of distal factors, there was 1 case of parental conflict and one of physical abuse. In the 7 other cases in the romantic relationship problems subgroup, all were experiencing work problems and the majority ($n = 5$) had life events or ongoing problems related to suicidal behaviours as well as financial difficulties. Just over half ($n = 4$) had physical health problems and there were a further 2 cases where the person's sexuality was not accepted (one by family and one by self; again, these differ from the non-acceptance subgroup due to presence of acute romantic relationship problems on death). The romantic relationship problems associated with these 11 cases were breakups ($n = 6$), conflict in an existing relationship ($n = 3$), and chronic loneliness ($n = 2$). There was lifetime exposure to suicidal behaviours in close others in 5 cases and lifetime incidence of sexual abuse in 2 cases and physical abuse in 1 case. There was also 1 case where bullying was reported as a life event. Typical life charts appear in the appendix as follows:

- late (romantic relationship problems) subgroup: Figure 2
- late (romantic relationship problems & HIV) subgroup: Figure 3
- late (non-acceptance) subgroup: Figure 4.

As there were just 2 trans cases, it can be seen as rather tenuous to make generalisations about them; nevertheless, certain commonalities emerged among the life charts. Both individuals were experiencing financial difficulties and there was a lack of acceptance of their gender identities by a child in 1 case and by self in the other. Both individuals had lifetime exposure to suicidal behaviours in a close other and one had bullying and parental conflict as distal life events. They were also of very similar ages (one 39 years and the other 40 years old). A typical life chart appears in Figure 5.

Diagnoses of psychiatric disorders based on informant responses to the MINI interview also appear in Table 11. It should be noted that these are distinct from the life events and ongoing problems related to mental health and/or suicidality in the life charts: the life events/problems refer to occasions or periods in the deceased's life that led to significant distress. The MINI investigates the lifetime and current incidence of a variety of psychiatric disorders, whether or not these were linked with particular periods of distress. The presence of unipolar depression (current or prior) or a bipolar disorder was a characteristic of all cases except for two individuals from the late (romantic relationship) subgroup. Specifically, there were 5 instances of unipolar depression and 6 of bipolar disorder among the 11 cases in the early group, 9 instances of unipolar depression and 3 of bipolar disorder among the 14 late cases and bipolar disorder occurred in both trans cases. The presence of an anxiety disorder (GAD, OCD, panic disorder, agoraphobia, or PTSD) was a defining feature of the early group and the two trans cases and was also present in the majority of late cases (9 of the 14). Also prevalent were alcohol/drug disorders, occurring in 10 of the 11 early cases, 11 of the 14 late cases, and in both trans cases. Current suicidality was present in 10 of 11 early cases and 8 of 14 late cases, but not in the trans cases, based on the informant reports. Psychotic disorders were relatively non-prevalent, present only in 1 of the 11 early cases, 2 of the 14 late cases, and 1 of the 2 trans cases.

Quantitative Analysis

Comprehensive statistical results from this component of the project (including reporting of 95% confidence intervals, where appropriate) are shown in Tables 5-10. In this section, "current" refers to prevalence of a disorder or condition at the time of death for suicide cases and the time of interview for controls. In terms of general characteristics, suicide cases were not significantly more likely than living controls to be living alone (33.3%

vs. 23.5%; OR = 1.67 $p = 0.305$) or be single (70.4% vs. 55.6%; OR = 1.94; $p = 0.174$). The difference in the proportion of individuals who were employed or full-time students compared to being unemployed or on a pension was also non-significant, but marginally so (66.7% vs. 84.0%; OR = 0.39; $p = 0.064$). However, suicide cases were significantly less likely to have a higher education from a TAFE or university than to have a grade 12 education or less (44.4% vs. 79.0%; OR = 0.10; $p = 0.001$).

In relation to physical health, the difference between the prevalence of current physical illness was statistically non-significant (57.7% vs. 54.3%; OR = 1.21; $p = 0.663$), as was that of prior physical illness (50.0% vs. 56.8%; OR = 0.74; $p = 0.548$). The difference in the proportion of individuals with HIV or AIDS was also not statistically significant (15.4% vs. 7.4%; Fisher's exact test = 0.252). There was a higher incidence of chronic pain in suicide cases, which approached statistical significance (40.0% vs. 21.0%; OR = 2.82; $p = 0.059$). Suicide cases were, however, more likely to be currently on medication (85.2% vs. 55.6%; OR = 6.85; $p = 0.004$). Those who died by suicide were also more likely to be unsatisfied or very unsatisfied with their weight and appearance (59.3% vs. 35.8%; OR = 3.08; $p = 0.029$).

Suicide cases differed significantly in contact with services only in whether or not they had ever seen a psychiatrist (64% vs. 32.1%; OR = 6.15; $p = 0.006$). Suicide cases were more likely to have ever been a resident of a correctional or mental health facility (50% vs. 21%; OR = 3.53; $p = 0.010$).

Many differences emerged in relation to mental health. Those who died by suicide were more likely to have a current major depressive episode (81.5% vs. 14.8%; OR = 23.41; $p < 0.001$). They were more likely to be experiencing current suicidality (81.0% vs. 32.1%; Fisher's exact test < 0.001) and were also significantly more likely to have made a previous attempt (76.9% vs. 29.6%; OR = 9.90; $p < 0.001$). In terms of anxiety disorders, there was a

significantly more elevated presence of generalised anxiety disorder (61.5% vs. 29.6%; OR= 4.21; $p = 0.004$) and PTSD (42.3% vs. 8.6%; OR = 9.19; $p = 0.001$) in suicide cases. There was also a greater incidence of antisocial personality disorder (14.8% vs. 2.5%; Fisher's exact test = 0.033) as well as a current psychotic disorder (18.5% vs. 3.7%; Fisher's exact test = 0.023). In terms of alcohol and other drugs, those who died by suicide were more likely to be substance users (66.7% vs. 22.2%; OR = 6.02; $p < 0.001$), to have a current substance dependence (30.8% vs. 3.7%; Fisher's exact test < 0.001) and to have current alcohol dependence (53.8% vs. 17.3%; OR = 4.92; $p = 0.002$) or alcohol abuse (11.5% vs. 1.2%; Fisher's exact test = 0.044). Suicide cases were significantly more likely to be unable to work due to mental health problems (48.1% vs. 8.6%; OR = 8.40; $p < 0.001$).

There were numerous differences related to sexuality and gender. Scores on the scale of internalised homo/transphobia were significantly higher among suicide cases (2.67 vs. 2.23, $t(33) = 2.05$, $p = 0.047$). Inspection of the subscales of this instrument revealed that suicide cases differed significantly on Personal Feeling about being LGBT (2.92 vs. 1.78, $t(30) = 2.94$; $p = 0.006$) and Moral and Religious Attitudes toward being LGBT (1.64 vs. 1.32, $t(38) = 2.30$; $p = 0.027$). Those who died by suicide were more likely to feel bad or very bad about their sexuality or gender (20% vs. 0%; Fisher's exact test = 0.001). Suicide cases were less likely to be accepted by their father (25.0% vs. 60.5%; OR = 0.20; $p = 0.007$) and by their mother (46.2% vs. 70.4%; OR = 0.33; $p = 0.018$). Those who died by suicide also tended to go through coming out milestones earlier. The average age of the first same-sex sexual experience was significantly younger in suicide cases (16.00 vs. 18.24 years; $t(64) = -2.41$; $p = 0.019$), as was the age of first disclosure (18.18 vs. 20.69 years; $t(73) = -2.70$; $p = 0.009$) and age of self-acceptance (where applicable; 19.88 vs. 23.72 years; $t(33) = -2.47$; $p = 0.019$).

Just as there were higher levels of internalised homo/transphobia, internalised shame was also significantly higher in suicide cases (2.79 vs. 2.07; $t(53) = 5.77$; $p < 0.001$). A distinct personality profile also emerged with suicide cases being higher in neuroticism (3.70 vs. 2.31; $t(58) = 5.60$; $p < 0.001$) and lower on agreeableness (3.18 vs. 3.97; $t(32) = -4.33$; $p < 0.001$). Aggressive behaviours were also more prevalent in those who had died by suicide (1.74 vs. 1.20; $t(30) = 3.94$; $p < 0.001$). Suicide cases were also more likely to have a domestic violence order in place (11.5% vs. 0%; Fisher's exact test = 0.013).

Although those who had died by suicide were no more likely to have been bullied at school or work (81% vs. 88.9%; Fisher's exact test = 0.461) or to have been a perpetrator of bullying (30.4% vs. 38.3%; OR = 0.68; $p = 0.501$), they were more likely to have ever been beaten so badly they had to see a doctor (52.4% vs. 29.6%; OR = 3.21; $p = 0.026$) and to have been sexually assaulted (52.4% vs. 31.3%; OR = 3.26; $p = 0.042$).

Additional Resources

To date, one journal article has been published from this study, based on the findings of component 1(14) and the researchers have also published a literature review on research on suicidal behaviours in LGBT populations in Australia(12).

Further Research

This project has found evidence for specific risk factors for LGBT suicide death in Australia and has important implications for LGBTI suicide prevention. Nevertheless, despite constituting a distinct risk group for suicide death, experiencing poorer mental health outcomes and having a higher vulnerability to nonfatal suicidal behaviours, LGBTI people in Australia are less likely to seek help than their mainstream counterparts(38). The idea that

treating everyone the same as best practice constitutes the biggest barrier to change in LGBTI mental health promotion and suicide prevention and recent Australian research demonstrates that such a policy reinforces the current situation and that this approach is not enough(39).

Studies are needed to collect data on the prevalence of suicidal behaviours in living LGBTI people, the pathways to these behaviours, and the barriers to help-seeking in these groups. The existing literature provides strong support for a heightened vulnerability to suicidal behaviours in living LGBTI people yet Australian research has either not focused specifically on suicidality or has had methodological constraints. Studies have been limited by issues such as a lack of control/comparison groups, small sample sizes and biased sampling methods, lack of standardised, reliable and valid measuring instruments, lack of follow-up and uncontrolled confounding variables. Research that includes using a control group and comprehensive investigation of the psychosocial factors related to suicidal behaviours in LGBTI people, using measurement tools shown to be valid and reliable is therefore indicated. Furthermore, while there is also compelling evidence that targeted mental health and suicide preventative initiatives would encourage help-seeking in LGBTI people(40), there is no evidence-based LGBTI inclusivity training in place in Australia nor any published evaluations of LGBTI-specific services. Research is needed that would aim to both develop and evaluate such a training program as part of an LGBTI-specific prevention initiative. Although there is research from Australia and internationally showing that helplines staffed by counsellors training in dealing with suicidal behaviours can lead to immediate decreases in suicidality(41-43) and improvements in mental state(44), studies also suggest that there are barriers to promoting subsequent help-seeking among suicidal callers, including a lack of trust in or a negative experience with mental health

professionals(44). This highlights the need for inclusive and sensitive services for LGBTI people, especially as feedback from LGBTI callers to mainstream crisis lines suggests that counsellors do not meet callers' needs as LGBTI people(45).

Research is therefore required which would further explain the interrelationships and mutually exclusive contributions of factors which can lead to suicidal behaviours in LGBT people by using a large sample of living LGBT people. These findings could directly inform, in addition to the formulation of a training program for dealing specifically with LGBTI people experiencing suicidal behaviours, the wider development of appropriate support systems which can promote help-seeking and increase protective factors for LGBT people.

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Appendix

Table 1. Comparison of the Details of the Suicide Incident between LGBT and non-LGBT Cases

Measure	LGBT		Non-LGBT		OR (95% CI)	p
	%	n	%	n		
Left a suicide note	48.6	17	30.5	32	1.95 (0.94-4.04)	0.070
Found by partner	25.7	9	12.4	13	2.61 (0.94-7.26)	0.065
Found by parent	14.3	5	11.4	12	1.40 (0.37-5.19)	0.613
Found by sibling	2.9	1	4.8	5	Fisher's exact test	1.000
Found by child	0.0	0	6.7	7	Fisher's exact test	0.192
Found by other relative	2.9	1	2.9	3	Fisher's exact test	1.000
Found by friend	14.3	5	5.7	6	2.50 (0.76-8.19)	0.130
Found by acquaintance	2.9	1	8.6	9	Fisher's exact test	0.451
Found by a stranger	17.1	6	23.8	25	0.64 (0.23-1.78)	0.402
Unknown who found the body	0.0	0	1.9	2	Fisher's exact test	1.000
Treated by ambulance at scene	42.9	15	22.9	24	2.85 (1.17-6.89)	0.020
Hanging as means	60.0	21	50.5	53	1.44 (0.67-3.08)	0.342
Motor vehicle exhaust gas as means	14.3	5	6.7	7	2.14 (0.68-6.75)	0.193
Poisoning as means	11.4	4	21.9	23	0.45 (0.14-1.42)	0.174
Firearms as means	0.0	0	4.8	5	Fisher's exact test	0.331
Other means	14.3	5	16.2	7	0.86 (0.30-2.50)	0.793

Table 2. Comparison of Physical Health between LGBT and non-LGBT Cases

Measure	LGBT		Non-LGBT		OR (95% CI)	p
	%	n	%	n		
Any physical illness	45.7	16	35.2	37	1.59 (0.70-3.58)	0.262
Infectious diseases (All)	11.4	4	2.9	3	Fisher's exact test	0.066
HIV/AIDS	8.6	3	0.0	0	Fisher's exact test	0.015
Circulatory system disorder (All)	14.3	5	6.7	7	2.26 (0.68-7.53)	0.181
Heart or artery disorder	14.3	5	4.8	5	3.00 (0.86-10.36)	0.082
Cancer	0.0	0	3.8	4	Fisher's exact test	0.572
CNS disorder	2.9	1	6.7	7	Fisher's exact test	0.679
Digestive disorder	0.0	0	3.8	4	Fisher's exact test	0.572
Sensory disorder	2.9	1	0.0	0	Fisher's exact test	0.250
Metabolism or nutritional disorder	0.0	0	5.7	6	Fisher's exact test	0.337
Musculoskeletal disorder	2.9	1	3.8	4	Fisher's exact test	1.000
Respiratory disorder	5.7	2	4.8	5	Fisher's exact test	1.000
Trauma near time of death	5.7	2	2.9	3	Fisher's exact test	0.599
General of unspecified health problems	14.3	5	16.2	17	0.86 (0.30-2.50)	0.793

Table 3. Comparison of Mental Health between LGBT and non-LGBT Cases

Measure	LGBT		Non-LGBT		OR (95% CI)	p
	%	n	%	n		
Any psychiatric diagnosis	57.1	20	55.2	58	1.08 (0.49-2.38)	0.842
Unipolar depression	50.0	17	33.3	35	2.28 (0.94-5.52)	0.066
Depression mentioned in case	70.6	24	52.4	55	2.44 (1.00-5.98)	0.050
Anxiety	5.9	2	3.8	4	Fisher's exact test	0.634
Psychotic disorder	0.0	0	12.4	13	Fisher's exact test	0.038
Substance use disorder	2.9	1	5.7	6	Fisher's exact test	1.000
Personality disorder	2.9	1	1.9	2	Fisher's exact test	0.572
Other disorder	0.0	0	4.8	5	Fisher's exact test	0.334
Taking any prescription drug	45.7	16	52.4	55	0.76 (0.35-0.76)	0.487
Taking Sertraline (Zoloft®)	11.4	4	3.8	4	3.00 (0.75-11.99)	0.120
Any psychiatric treatment	42.9	15	47.6	50	0.81 (0.36-1.81)	0.612
Psychiatric treatment from a GP	34.3	12	23.8	25	1.59 (0.72-3.48)	0.247
Current or previous outpatient psychiatric treatment	8.6	3	21.00	22	Fisher's exact test	0.128
Current outpatient psychiatric treatment	5.7	2	14.3	15	Fisher's exact test	0.240
Previous outpatient psychiatric treatment	2.9	1	3.8	4	Fisher's exact test	1.000
Current or previous inpatient psychiatric treatment	11.4	4	21.0	22	0.51 (0.17-1.55)	0.240
Current inpatient psychiatric treatment	0.0	0	4.8	5	Fisher's exact test	0.331
Previous inpatient psychiatric treatment	11.4	4	15.2	16	0.74 (0.24-2.25)	0.601
Current or previous "other" psychiatric treatment	11.4	4	16.2	17	0.66 (0.20-21.3)	0.495
Current "other" psychiatric treatment	8.6	3	9.5	10	Fisher's exact test	1.000
Previous "other" psychiatric treatment	2.9	1	2.9	3	Fisher's exact test	1.000
Illicit drug user	17.1	6	6.7	7	3.00 (0.89-10.05)	0.070

Table 4. Comparison of Life Events between LGBT and non-LGBT Cases

Measure	LGBT		Non-LGBT		OR (95% CI)	p
	%	n	%	n		
Relationship problems (All)	65.7	23	33.3	35	3.76 (1.66-8.54)	0.002
Relationship problems (Separation)	34.3	12	23.8	25	1.79 (0.73-4.39)	0.203
Relationship problems (Conflict)	31.4	11	9.5	10	3.73 (1.48-9.36)	0.005
Conflict (All)	20.6	7	21.9	23	1.00 (0.39-2.55)	1.000
Conflict (Familial)	5.7	2	17.1	18	Fisher's exact test	0.160
Conflict (Interpersonal)	14.3	5	4.8	5	3.00 (0.86-10.36)	0.082
Childhood trauma	5.9	2	1.0	1	Fisher's exact test	0.148
Child custody dispute	0.0	0	2.9	3	Fisher's exact test	1.000
Alcohol/drug dependency	14.7	5	21.9	23	0.61 (0.21-1.71)	0.350
Sexual abuse	2.9	1	1.0	1	Fisher's exact test	0.431
Pending legal matters	11.8	4	5.7	6	2.12 (0.56-8.07)	0.267
Financial problems	14.7	5	13.3	14	1.09 (0.34-3.46)	0.882
Recent or pending unemployment	8.8	3	7.6	8	Fisher's exact test	0.730
Work or school problems (not financial)	5.9	2	3.8	4	Fisher's exact test	0.634
Bereavement	5.7	2	5.7	6	Fisher's exact test	1.000
Other life event	35.3	12	20.0	21	2.00 (0.96-4.41)	0.086

Table 5. Comparison of General Characteristics between Suicide Cases and Controls

Measure	Suicide		Control		OR (95% CI)	p
	%	n	%	n		
Living alone	33.3	9	23.5	19	1.67 (0.62-4.46)	0.305
Single	70.4	19	55.6	45	1.94 (0.74-5.05)	0.174
Employed or fulltime student	66.7	18	84.0	68	0.39 (0.14-1.05)	0.064
(Very) good academic performance (if student)	50.0	3	82.8	24	Fisher's exact test	0.117
Had a higher education	44.4	12	79.0	64	0.10 (0.03-0.38)	0.001
Followed a religion	38.5	10	32.1	26	1.39 (0.55-3.50)	0.475

Table 6. Comparison of Physical Health between Suicides Cases and Controls

Measure	Suicide		Control		OR (95% CI)	p
	%	n	%	n		
Physical illness (current)	57.7	15	54.3	44	1.21 (0.50-2.88)	0.663
Physical illness (prior)	50.0	12	56.8	46	0.74 (0.29-1.92)	0.548
HIV/AIDS	15.4	4	7.4	6	Fisher's exact test	0.252
Medication (current)	85.2	23	55.6	45	6.85 (1.86-25.24)	0.004
Medication (prior)	55.6	10	60.5	49	1.00 (0.36-2.70)	1.000
(Very) unsatisfied with appearance	59.3	16	35.8	29	3.08 (1.12-8.46)	0.029
Appearance (very) important	85.2	23	79.0	64	Fisher's exact test	0.584
Concerns about physical health	88.9	24	79.0	64	Fisher's exact test	0.391
Disability	7.4	2	9.9	8	Fisher's exact test	1.000
Mobility difficulties	7.4	2	9.9	8	Fisher's exact test	1.000
Chronic pain	40.0	10	21.0	17	2.82 (0.96-8.29)	0.059

Table 7. Comparison of Contact with Services between Suicides Cases and Controls

Measure	Suicide		Control		OR (95% CI)	p
	%	n	%	n		
Any health practitioner	100.0	25	95.1	77	Fisher's exact test	0.571
GP	95.8	23	91.4	74	Fisher's exact test	0.679
Psychiatrist	64.0	16	32.1	26	6.15 (1.68-22.52)	0.006
Psychologist	60.0	12	59.3	48	1.07 (0.37-3.10)	0.893
Been a resident of a mental health or correctional facility	50.0	13	21.0	17	3.53 (1.35-9.24)	0.010

Table 8. Comparison of Mental Health and Suicidality between Suicides Cases and Controls

Measure	Suicide		Control		OR (95% CI)	p
	%	n	%	n		
Major Depressive Episode (Current)	81.5	22	14.8	12	23.41 (5.43-100.78)	< 0.001
Major Depressive Episode (Past)	81.5	22	84.0	68	0.84 (0.27-2.60)	0.768
Major Depressive Episode (Recurrent)	81.5	22	63.0	51	2.57 (0.88-7.48)	0.083
Suicidality (Current)	81.0	17	32.1	26	Fisher's exact test	< 0.001
Manic episode (Current)	11.5	3	2.5	2	Fisher's exact test	0.091
Manic episode (Past)	40.7	11	28.4	23	1.85 (0.70-4.87)	0.209
Hypomanic episode (Current)	7.7	2	0.0	0	Fisher's exact test	0.057
Hypomanic episode (Past)	15.4	4	11.1	9	Fisher's exact test	0.513
GAD	61.5	16	29.6	24	4.21 (1.58-11.18)	0.004
PTSD (Current)	42.3	11	8.6	7	9.19 (2.52-33.43)	0.001
OCD (Current)	18.5	5	13.6	11	1.38 (0.46-4.09)	0.557
Social Anxiety Disorder	11.1	3	11.1	9	1.00 (0.27-3.69)	1.000
Agoraphobia (Current)	30.8	8	28.4	23	1.19 (0.46-3.06)	0.714
Panic Disorder (Current)	23.8	5	14.8	12	1.71 (0.55-5.31)	0.348
Panic Disorder (Lifetime)	34.6	9	40.7	33	0.82 (0.34-1.98)	0.659
Antisocial Personality Disorder	14.8	4	2.5	2	Fisher's exact test	0.033
Conduct Disorder	15.4	4	13.6	11	Fisher's exact test	0.756
Anorexia Nervosa	3.7	1	0.0	0	Fisher's exact test	0.250
Bulimia Nervosa	0.0	0	2.5	2	Fisher's exact test	1.000
Psychotic Disorder (Current)	18.5	5	3.7	3	Fisher's exact test	0.023
Psychotic Disorder (Lifetime)	22.2	6	9.9	8	2.25 (0.78-6.48)	0.133
Mood disorder with psychotic features (Current)	0.0	0	0.9	1	Fisher's exact test	1.000
Mood disorder with psychotic features (Lifetime)	0.0	0	12.3	10	Fisher's exact test	0.063
Substance Use	66.7	18	22.2	18	6.02 (2.31-15.64)	< 0.001
Substance Dependence (Current)	30.8	8	3.7	3	Fisher's exact test	< 0.001
Substance Abuse (Current)	3.8	1	0.0	0	Fisher's exact test	0.243
Alcohol Dependence	53.8	14	17.3	14	4.92 (1.83-13.17)	0.002
Alcohol Abuse (Current)	11.5	3	1.2	1	Fisher's exact test	0.044
Previous suicide attempt	76.9	20	29.6	24	9.90 (2.84-34.44)	< 0.001
Suicide attempt/death of close other	73.1	19	74.1	60	1.00 (0.40-2.48)	1.000
Unable to work because of mental health	48.1	13	8.6	7	8.40 (2.71-26.08)	< 0.001

Table 9. Comparison of Violence-Related Factors and Changes at Work/School between Suicide Cases and Controls

Measure	Suicide		Control		OR (95% CI)	p
	%	n	%	n		
Change in attendance	84.0	21	65.4	53	Fisher's exact test	0.087
Change in performance	72.7	16	82.7	67	0.46 (0.14-1.51)	0.203
Change in behaviour	71.4	15	86.4	70	0.48 (0.15-.151)	0.214
Victim of bullying	81.0	17	88.9	72	Fisher's exact test	0.461
Perpetrator of bullying	30.4	7	38.3	31	0.68 (0.23-2.05)	0.501
Beaten so badly had to see a doctor	52.4	11	29.6	24	3.21 (1.14-8.99)	0.026
Sexual assault	52.4	11	31.3	25	3.26 (1.04-10.20)	0.042
Domestic violence order in place	11.5	3	0.0	0	Fisher's exact test	0.013

Table 10. Comparison of Sexuality- and Gender-Related Factors between Suicide Cases and Controls

Measure	Suicide		Control		n	OR (95% CI)	p
	%	n	%	n			
Accepting mother	46.2	12	70.4	57	57	0.33 (0.13-0.82)	0.018
Accepting father	25.0	6	60.5	49	49	0.20 (0.06-0.64)	0.007
Accepting female friend	90.9	2	87.7	71	71	1.35 (0.27-6.69)	0.706
Accepting male friend	92.3	24	79.0	64	64	2.91 (0.64-13.22)	0.166
Accepting brother	40.0	6	66.7	38	38	0.14 (0.01-1.24)	0.078
Accepting sister	72.7	16	80.0	44	44	0.47 (0.11-1.99)	0.306
Accepting doctor	76.5	13	65.4	53	53	1.78 (0.50-6.28)	0.370
Accepting teacher	41.7	5	45.7	37	37	0.78 (0.20-3.08)	0.732
Accepting psychologist	75.0	12	73.7	56	56	1.25 (0.36-4.38)	0.720
Accepting former partner from before coming out	33.3	4	50.7	34	34	0.84 (0.21-3.37)	0.816
Accepting priest	10.5	2	12.5	10	10	1.59 (0.25-9.95)	0.620
Accepting LGBTI adult	96.3	26	93.8	76	76	1.66 (0.19-14.26)	0.641
Accepting person online	81.0	17	72.5	58	58	1.67 (0.47-5.94)	0.422
Feel (very) bad about sexuality/gender	20.0	5	0.0	0	0	Fisher's exact test	0.001

Table 11. Group classification and principal features of life charts. Psychiatric diagnoses and other defining characteristics in bold are a feature of the entire (sub)group

Group	Early (11)		Late (14)		Trans (2)	
Ages	19-30 years old		32-61 years old 37-43 years old (9)		39 & 40 years old	
(Sub-)Group defining feature	Non-acceptance (10) Family (8), Self (5), Father (4)	Uncategorised (1)	Romantic relationship problems (11)		Non-acceptance (3)	n/a
			Breakups (6), conflict (3), chronic loneliness (2)		Self (1), parents (1), partner's parents (1)	
Further specifiers	None (10)	n/a	None (7)	HIV (4)	None (3)	n/a
LGBT	Gay (7) Lesbian (2) Bisexual (1)	Lesbian (1)	Gay (5), Lesbian (2)	Gay (4)	Gay (3)	Trans (2)
Other defining characteristics	Suicidality (10) Romantic relationships (9) Non-romantic relationships (9) Physical health (8) Work problems (7) Lifetime exposure (7) Financial difficulties (6) MH (6) Lifetime bullying (5) Lifetime parental conflict (4) Study problems (3) Lifetime abuse (3)	Suicidality Physical health Work problems Study problems Lifetime bullying Lifetime parental conflict Lifetime abuse	Work problems (7) Suicidality (5) Financial difficulties (5) Lifetime exposure (5) Physical health (4) MH (3) Non-acceptance (2) Lifetime abuse (3) Lifetime bullying (1)	Work problems (4) Suicidality (3) Non-romantic relationships (3) Non-acceptance (parents) (2) MH (2) Lifetime parental conflict (1) Lifetime abuse (1)	Non-romantic relationships (3) Work problems (3) Physical health (3) Lifetime abuse (3) Lifetime romantic relationship problems (3) Suicidality (2) MH (2) Lifetime exposure (2) Lifetime parental conflict (1) Lifetime bullying (1)	Non-acceptance (2) Financial difficulties (2) Lifetime exposure (2) Lifetime parental conflict (1) Lifetime bullying (1)
Psychiatric diagnoses (MINI)	Anxiety Disorder (10), Alcohol/Drug Disorder (9), Suicidality (9), Bipolar (5), Unipolar Depression (5), Psychotic Disorder (1), Conduct Disorder/ASPD (1)	Bipolar Suicidality Alcohol/Drug Disorder	Alcohol/Drug Disorder (6), Unipolar Depression (5), Anxiety Disorder (5), Suicidality (3), Bipolar (1), Psychotic Disorder (1), Eating Disorder (1), Conduct Disorder/ASPD (1)	Alcohol/Drug Disorder (3), Unipolar Depression (2), Suicidality (2), Anxiety disorder (2), Bipolar (1), Psychotic Disorder (1)	Suicidality (3), Unipolar Depression (2), Anxiety Disorder (2), Alcohol/Drug Disorder (2), Bipolar (1)	Bipolar (2), Anxiety Disorder (2), Alcohol/Drug Disorder (2), Conduct Disorder/ASPD (2), Psychotic Disorder (1)

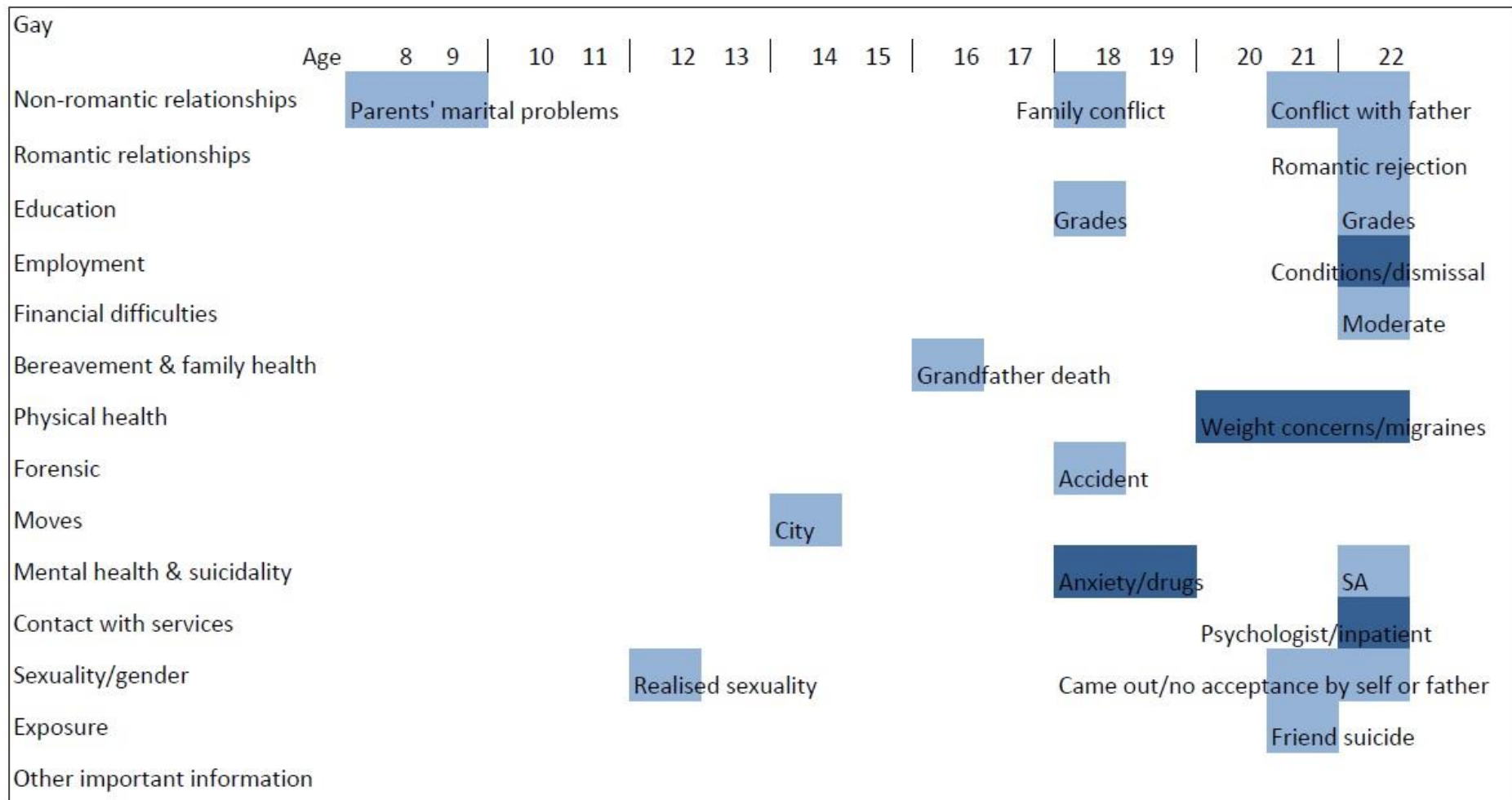


Figure 1. Typical Life Chart for the Early (Non-Acceptance) Group. Dark blue indicates multiple events at the same time. SA = suicide attempt.

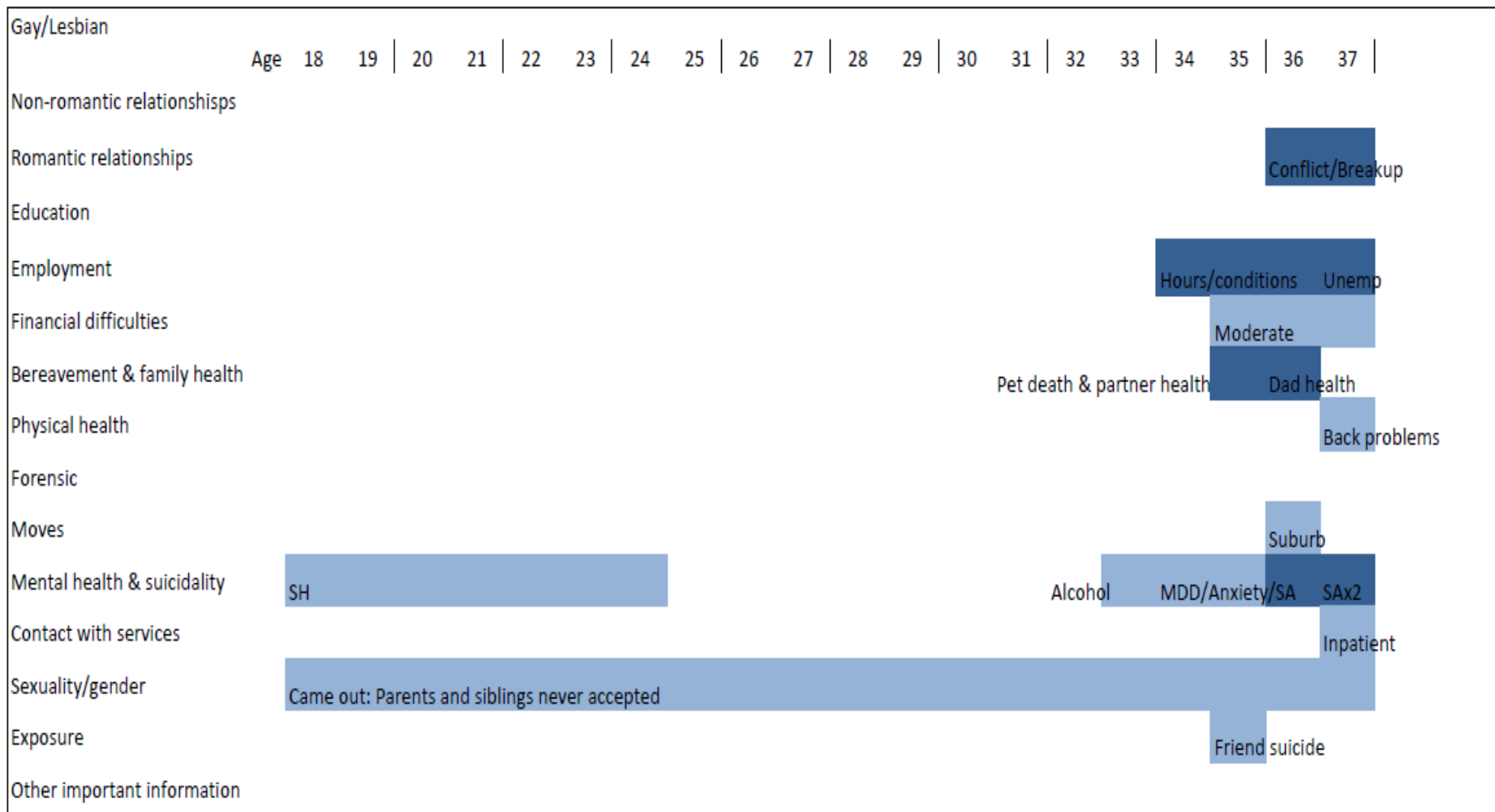


Figure 2. Typical Life Chart for the Late (Romantic Relationship Problems) Group. Dark blue indicates multiple events at the same time. Unemp = unemployed. SH = self-harm. MDD = Major Depressive Disorder. SA = suicide attempt. SSSE = same-sex sexual experience.

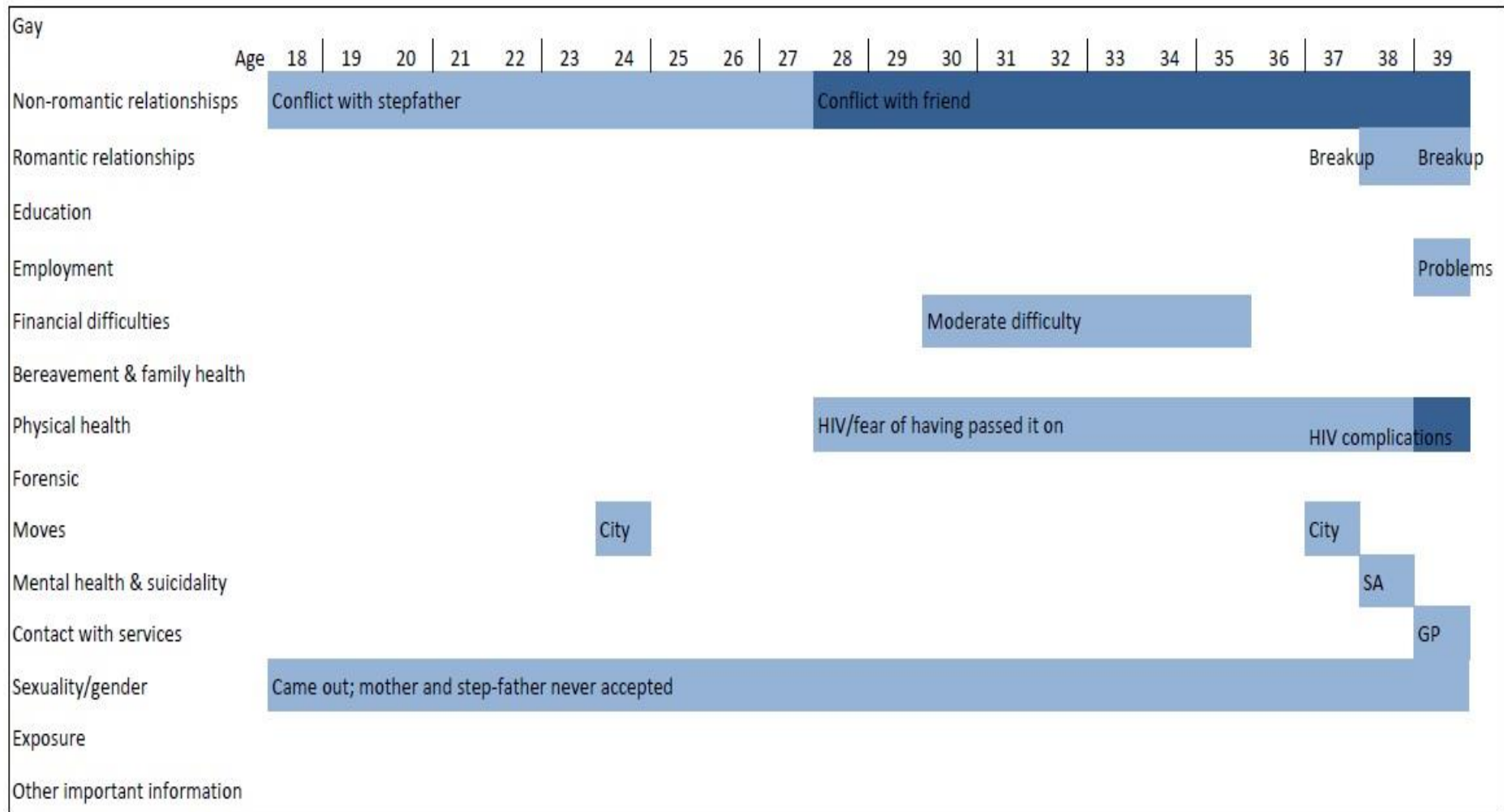


Figure 3. Typical Life Chart for the Late (Romantic Relationship Problems & HIV) Group. Dark blue indicates multiple events at the same time. HIV = human immunodeficiency virus. SA = suicide attempt. GP = general practitioner.

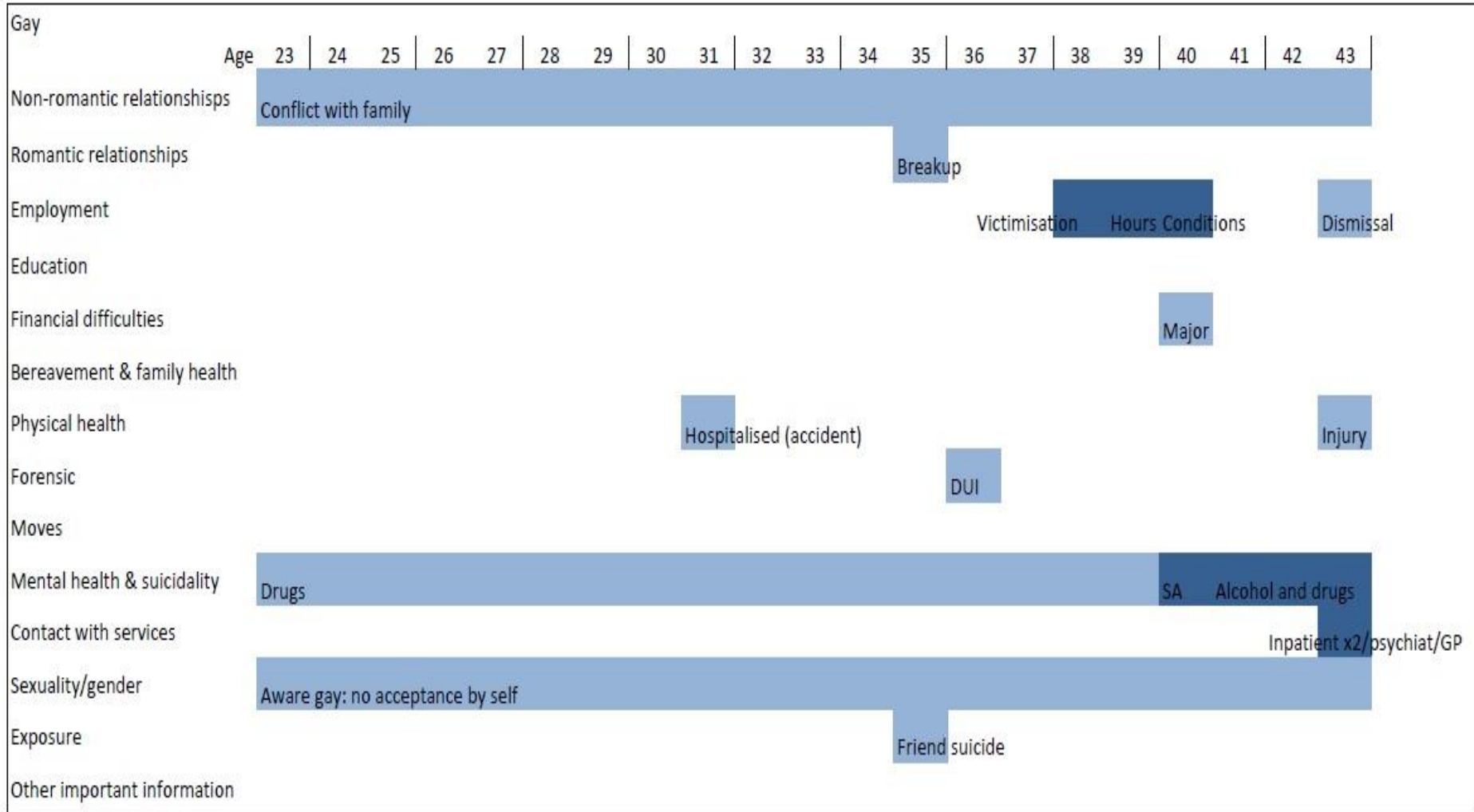


Figure 4. Typical Life Chart for the Late (Non-Acceptance) Group. Dark blue indicates multiple events at the same time. DUI = Driving under the influence (driving while intoxicated). SA = suicide attempt. Psychiat = psychiatrist. GP = general practitioner.

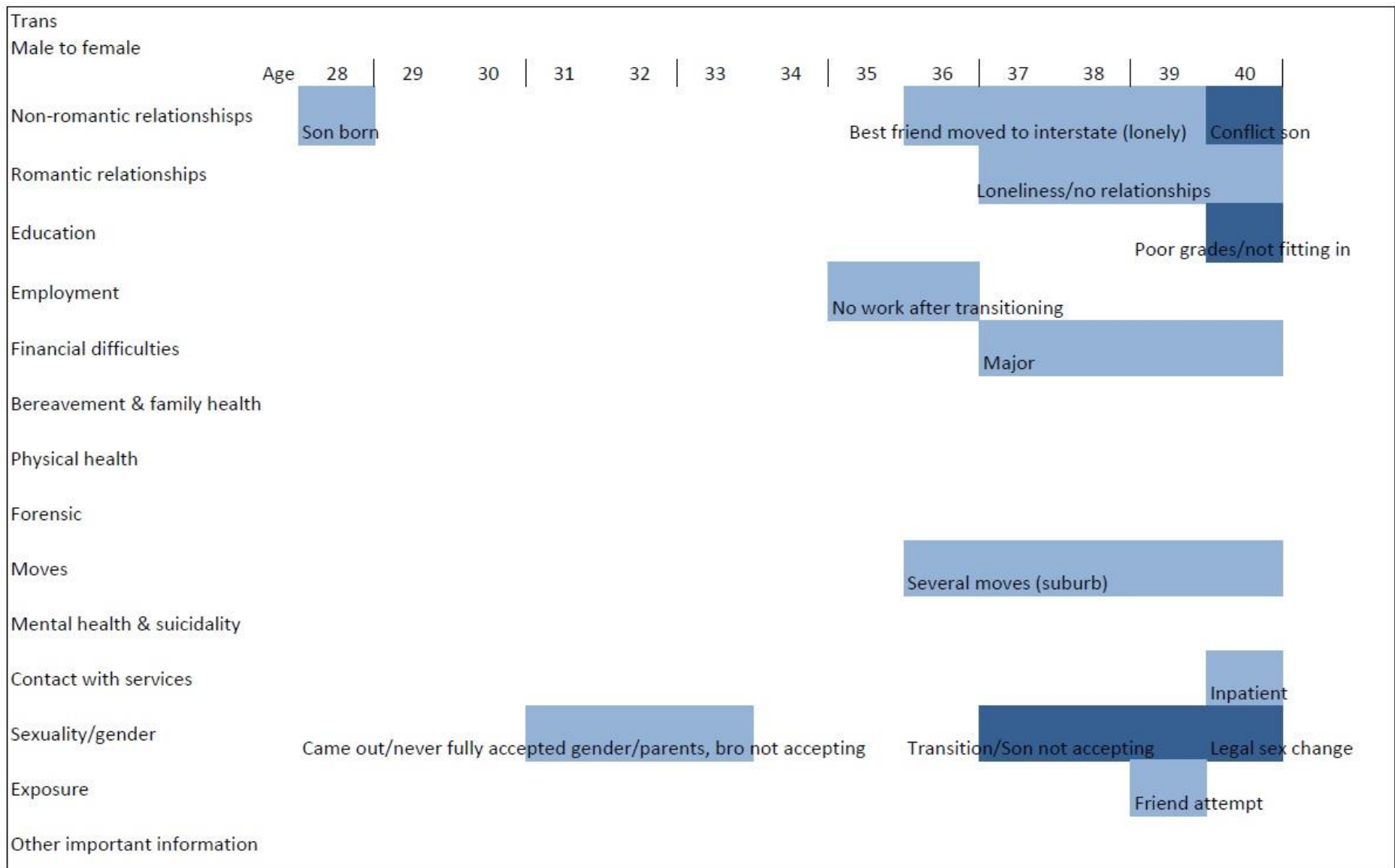


Figure 5. Typical Life Chart for the Trans Group. Dark blue indicates multiple events at the same time