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The use of ambulance data to inform patterns and trends of alcohol and other drug misuse, self-harm and mental health in different types of violence

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Executive summary

Background

Violence is a complex and significant public health issue. The definition of violence (Krug et al. 2002) encompasses intimate partner (occurring between partners and ex-partners), family (occurring between other family members) and community violence (occurring between individuals who are unrelated and may be unknown to each other; it may include violence against frontline professionals such as paramedics or police). The violent act itself can be divided into three main types of behaviour: physical violence, threatening behaviour and sexual violence. An incident of violence may contain multiple types of violence and behaviour, and these groupings are not exclusive. The outcomes of violence are diverse. They may be long lasting and severe, encompassing psychological, social and economic harms as well as physical injury and death (Krug et al. 2002; Waters et al. 2004).

The causes of violence are varied and can operate at multiple levels, within individuals, relationships, community and societies (Dahlberg & Krug 2002; Krug et al. 2002). A number of factors have been associated with increased violence, some as risks for violence and some as outcomes of violence; they include:

- alcohol and other drug (AOD) use (Boles & Miotto 2003; Collins & Messerschmidt 1993);
- mental health issues (Arseneault et al. 2000; Nathanson et al. 2012; Shorey et al. 2012); and
- self-harm (including suicidal ideation, suicide attempt and non-suicidal self-injury) (Christoffersen, Soothill & Francis 2005; Witt, Hawton & Fazel 2014).

The exact impact of these associations is difficult to disentangle; often, they are not only associated with a higher risk of violence in populations where they are prevalent, but are also outcomes of exposure to violence. Indeed, these associations can be bi-directional (Neigh, Ritschel & Nemeroff 2010). Nevertheless, understanding the relationships between these factors is important, because they may serve as effective points of intervention for reducing violence and its impacts; when these risk factors are reduced and/or controlled for, violence rates also decrease (Fitterer, Nelson & Stockwell 2015; McNiel & Binder 2007).

Understanding of violence and its associated factors in Australia has typically relied on disparate data sources, including jurisdictional police data and population-based national surveys such as the Personal Safety Survey (Australian Bureau of Statistics 2017) for violence, the National Drug Strategy Household Drug Survey (Australian Institute of Health and Welfare 2017) for AOD use and the National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics 2008) for mental health. However, these data have limitations (such as sampling and recall biases) which make it difficult to unravel the interrelationship among AOD use, mental ill-health and violence. For example, although population surveys aim to be representative, their sampling frames often exclude vulnerable, disadvantaged and hard-to-reach populations, who are at increased risk of violence. Also, such surveys are dependent on self-reported data, making them subject to recall or social desirability biases. Police data provide important information on violence; however, not all episodes of violence are reported to police (Miller et al. 2016), which may result in underestimation of rates of violence. Lastly, while some surveys have sought to quantify the interactions between particular risk factors (eg the proportion of violence that involves alcohol), there is no single data source in Australia that comprehensively captures data on acute events of violence, AOD use, mental health issues and self-harm.

Ambulance attendance data offers a potential complementary data source for understanding acute presentations of violence in the community that may not be captured elsewhere (especially if police are not involved). Episodes of violence contributing to, or associated with, ambulance attendances are recorded in comprehensive paramedic notes which provide important details about the characteristics of violent incidents and the relationships between aggressors and victims. Such data are based on paramedics' observations and clinical acumen and on information provided by the patient and others at the scene, thereby reducing the likelihood of bias arising from subjective reports alone.

Turning Point, an Australian addiction research and education centre. has previously used coded ambulance attendance data to successfully monitor trends in AOD harms and co-occurring mental health issues in Australia (eg Crossin et al. 2018; Heilbronn et al. 2013). However, these data have not previously been used to explore ambulance attendances related to violence. The major aim of this study was, therefore, to determine the potential for coded ambulance data to be used for surveillance of violence at a population level, in a manner similar to that already undertaken for surveillance of AOD and mental health in the community (Lloyd, Gao et al. 2015; Lloyd, Matthews et al. 2015). The study also aimed to describe acute presentations to ambulance services related to violence and their association with AOD, mental health and self-harm.

Methods

The National Ambulance Project, funded by the Commonwealth Department of Health and the Victorian Department of Health and Human Services, has used coded ambulance data to monitor harms associated with AOD use, self-harm and mental health variables at a national level. Paramedic electronic patient care records are provided by jurisdictional ambulance services and are coded by a team of trained research staff at Turning Point. The current project builds upon the ongoing National Ambulance Project and the Beyond the Emergency project to examine violence in ambulance attendances. Coding and analysis of ambulance service records provides an excellent basis for developing an ongoing monitoring system of violence-related ambulance presentations at a population level. This project was developed in 2016 with funding from the Australian Institute of Criminology (AIC) Commonwealth Research Grant (CRG) scheme. This required the development of violence case category definitions; modification of the project data processes, including data importing, processing, exporting and review; project database development and modification; and project coding staff training and review. Tasmanian and Victorian ambulance attendance data from the 2016–17 financial year were selected for coding.

The process of collecting and coding data included:

- ambulance data collection—Victorian and Tasmanian ambulance paramedics complete an electronic patient care record (ePCR) in a clinical data collection system (VACIS®) for every incident they attend;
- filtering—Ambulance Victoria undertakes complex primary filtering using over-inclusive parameters, based on automated key word searches as well as multiple assessment/diagnostic fields, to maximise probable case capture and extract a subset of ambulance attendances that may involve AOD consumption, mental health issues or self-harm. Ambulance Tasmania provides data to Turning Point on all acute ambulance attendances without key word filtering;
- initial data processing—data are internally validated when parsed for import and converted from the VACIS® transfer files provided by ambulance services to Turning Point data systems;
- data coding and auditing—a specialised team of research assistants manually scrutinises and codes each ePCR, identifying and classifying AOD, mental health, self-harm and violence involvement; and
- data review and export—after the set of ePCR record extracts is manually coded, the dataset is reviewed by senior project staff and extracted for cleaning prior to analysis.

Violence-related ambulance attendances were defined as those where physical violence, threatening behaviour and/or sexual violence were significant contributors to the need for the ambulance attendance (although not necessarily the primary reason). For the purpose of this report, violence-related ambulance attendances were differentiated, firstly by state; secondly, on the basis of the relationship between people involved in the violent incident; and thirdly, on the role that the person attended by ambulance played in the violence (ie whether the ambulance patient was the victim or the aggressor of violence). This resulted in six categories for each state:

- intimate partner violence—the ambulance treated the victim of the violence;
- intimate partner violence—the ambulance treated the aggressor of the violence;
- other family violence—the ambulance treated the victim of the violence;
- other family violence—the ambulance treated the aggressor of the violence;
- community violence—the ambulance treated the victim of the violence; and
- community violence —the ambulance treated the aggressor of the violence.

The report quantifies the characteristics of the attendance, including:

- the type of violent behaviour—threatening behaviour, physical violence and sexual violence;
- the acute involvement of AOD, mental health issues and self-harm for the person attended by the ambulance;
- demographics of the person attended by the ambulance;
- location of the attendance and proportion of police co-attendance; and
- proportion transported to hospital.

Results

In the 2016–17 financial year, the dataset contained 74,478 ambulance attendances in Victoria and 7,191 ambulance attendances in Tasmania. Of those, 7.7 percent and 7.8 percent of Victorian and Tasmanian attendances, respectively, were related to violence. This suggests that, despite the data filtering used in the Victorian system, Turning Point received a representative sample of attendances associated with violence.

There was a total of 6,295 violence-related ambulance attendances across both Victoria and Tasmania. The breakdown by violence type was:

- 3,809 (61%) community violence;
- 1,553 (25%) other family violence; and
- 1,176 (19%) intimate partner violence.

Across both Victoria and Tasmania, the type of violent behaviour coded included:

- 3,419 (54%) physical violence;
- 3,235 (51%) threatening behaviour; and
- 42 (0.7%) sexual violence.

The number of victims and aggressors across Victoria and Tasmania were:

- 3,872 (62%) for an attendance for an aggressor of violence;
- 2,132 (34%) for an attendance for a victim of violence; and
- 291 (5%) for an attendance where the individual was both the victim and aggressor of violence.

In terms of co-occurring issues, in violence-related ambulance attendances across both Victoria and Tasmania:

- 2,396 (38%) also involved AOD use;
- 1,989 (32%) also involved mental health symptoms; and
- 1,479 (24%) also involved self-harm.

Where AOD use occurred within violence-related attendances, this was predominantly related to alcohol (involvement ranged from 14 percent to 44 percent across the violence types in Victoria, and 25 percent to 37 percent across the violence types in Tasmania). In comparison, illicit drug use involvement ranged from three percent to 10 percent across the violence types in Victoria (numbers were too small to report in Tasmania), and pharmaceutical misuse involvement ranged from one percent to eight percent across the violence types in Victoria (again, numbers were too small to report in Tasmania).

As is seen in other data sources, females were most commonly the victims of intimate partner violence (85% in Victoria and 80% in Tasmania), which was predominantly physical violence (86% in Victoria and 90% in Tasmania). However, this report also highlights the relative contribution of other family violence (25% of all violence-related attendances in Victoria and 24% of all violence-related attendances in Tasmania), which was higher than that of intimate partner violence (18% of all violence-related attendances in Victoria and 22% of all violence-related attendances in Tasmania). In contrast to intimate partner violence, in other family violence, males and females were more equally represented, both as victims (in Victoria, 48% were males and 52% were females; in Tasmania, 51% were males and 49% were females) and as aggressors (in Victoria, 57% were males and 43% were females; in Tasmania, 61% were males and 39% were females).

There was a surprisingly high number of attendances in both Victoria and Tasmania that were for the aggressors of violence (63% of the violence-related attendances in Victoria and 45% of the violence-related attendances in Tasmania). In community violence-related attendances, paramedics and police were the predominant group of third parties to this violence (87% of community violence-related attendances in Victoria and 92% of community violence-related attendances in Tasmania).

Across both states and all violence types, attendances for victims of violence were typically related to violence only (ie without co-occurring AOD, mental health or self-harm: 40–42% in Victoria and 60–68% in Tasmania) or to violence in the context of co-occurring AOD use (29–45% in Victoria and 31–32% in Tasmania). In contrast, attendances to treat aggressors of violence were highly complex, with multiple co-occurring issues common, and only 16–22 percent in Victoria and 28–37 percent in Tasmania related to violence only.

Those aged over 60 years were over-represented in ambulance attendances to treat the aggressors of violence (8–26% in Victoria and 12–28% in Tasmania). This was found to be associated with a particular subset of patients who were experiencing medically induced mental health symptoms (eg dementia). Of these attendances, threatening behaviour dominated (57–67%), and this was frequently directed towards familial carers (ie intimate partner violence and other family violence) and non-familial carers (community violence; of these cases, 71% occurred in a nursing home or supported care facility).

Within attendances to treat aggressors of violence, self-harm frequently co-occurred (most commonly suicidal ideation: 16–27% in Victoria and 9–22% in Tasmania). This association was more common in intimate partner violence (26% in Victoria; numbers too small in Tasmania) and other family violence (27% in Victoria and 22% in Tasmania) than in community violence (16% in Victoria and 9% in Tasmania).

A large proportion of the ambulance attendances for community violence occurred in a private location (eg a private residence or home: 46–50% in Victoria and 64–65% in Tasmania), and police co-attended 67–73 percent of these attendances in Victoria and 41–52 percent of these attendances in Tasmania.

Limitations

Despite the novel nature of the data presented, it is important to acknowledge a number of limitations. Ambulance data do not include all cases of violence-related harm and typically represent acute events requiring urgent medical intervention. Ambulance data are collected for operational and clinical purposes, and incomplete or inconsistent recording of variables can occur. Coding is dependent on the information that paramedics record in their clinical notes, which are based on their professional judgement of the information needed for treatment. Where there are co-occurring issues, such as AOD use, mental health issues or self-harm, these refer to what was observed and recorded by the paramedic at the time of the attendance. This does not imply that any issue was causal to another. Ambulance attendance data represent only a subset of aggressors in violence—those who themselves require ambulance assessment—and are less likely to capture data on individuals who are the aggressors in violence but who do not require urgent treatment. Specifically, where an individual has been coded as the aggressor in violence, the ambulance attendance is for that individual, implying that they are experiencing harm themselves. From the nature of the data, we cannot determine the initial reason for which the ambulance was called (ie violence may not have been the principal reason for the ambulance attendance), and the attendance may be primarily related to mental health or other issues occurring for an individual who was the victim or aggressor of the violence. Also, although the results presented reflect attendances in Victoria and Tasmania (which collectively represent approximately 28% of Australia's population), we do not know whether they can be reliably extrapolated to populations that vary significantly from that of these states.

Conclusions

This research demonstrates a clear proof of concept for measuring violence at a population level, using coded ambulance attendance data. The project was successfully implemented by building on methods in the National Ambulance Project, using the strong collaboration between Turning Point and ambulance services, with successful implementation of a novel new coding module for violence. This study provides unique and rich data related to the extent of violence in families and the community; the types of violence occurring; and the relationship to mental health, AOD use and self-harm; analysed on the basis of violence-related ambulance attendances. The findings assist our understanding of the complex nature of violence, thereby informing intervention development and public policy aimed at reducing violence. There are opportunities to expand this dataset to include other jurisdictions and to link it to other data sources (eg police, emergency department or justice data), in order to better understand the impacts and outcomes of violence across the community.

Finally, the use of coded ambulance data provides a cost effective, population surveillance system to monitor violence-related harms in the community. The implementation of this surveillance system on a national level could provide timely, accurate population data that would improve policy and intervention development and contribute to a reduction in violence-related harms in Australia.

Introduction

Violence

Violence is defined by the World Health Organization as 'the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation' (cited in Krug et al. 2002). Violence can be categorised into three broad groups:

- self-directed violence (eg self-harm and self-abuse or self-mutilation);
- collective violence, which is violence committed by a group such as a state, militia or terrorist group; and
- violence, which is violence committed by an individual or small group of individuals. This can be further sub-divided to encompass:
  - family and intimate partner violence, occurring between family members; and
  - community violence, occurring between individuals who are unrelated and may be unknown to each other (this may include violence against professionals like paramedics or police; Krug et al. 2002).

The violent act itself can be divided into types, although an incident of violence may contain multiple types of violence, and these groupings are not exclusive:

- physical;
- sexual;
- psychological (including threatening behaviour); and
- deprivation and/or neglect (Krug et al. 2002).

This report will focus on the outcome of violence, encompassing both subcategories of family violence (both intimate partner violence and violence against other family members) and community violence, and including physical, sexual and psychological acts of violence.

Violence is a complex and significant public health issue. The outcomes are diverse and severe, including physical injury and death, and psychological, social and economic harms (Krug et al. 2002, Waters et al. 2004). These harms can occur immediately or be latent, and the harm can extend for years beyond the initial violent act (Krug et al. 2002). Globally, in 2000, 520,000 people died as a result of violence (ie homicide): a rate of 8.8 per 100,000 people (World Health Organization 2003). Rates were significantly higher in males, and higher in the 15–29 and 30–44 age groups (World Health Organization 2003). The most recent Australian data from the 2016 Personal Safety Survey reveal that two in five people have experienced either physical or sexual violence since the age of 15. Four in 10 men (41% or 3.7 million) and three in 10 women (31% or 2.9 million) experienced physical violence. One in five women (18% or 1.7 million) and one in 20 men (4.7% or 428,800) experienced sexual violence (Australian Bureau of Statistics 2017). In Australia, there has been an overall decrease in the rate of homicides (Butchart & Mikton 2014) and physical violence and an increase in the amount of sexual violence reported (Australian Bureau of Statistics 2017). Violence is predominantly perpetrated by males, and males are more likely to be the victims of community violence, whereas females are more likely to be the victims of family violence (Australian Bureau of Statistics 2017). It has not yet been possible to estimate a global economic burden of violence, partly because of the lack of data about health outcomes arising from violence (eg AOD misuse; Krug et al. 2002). However, Australian data estimate that the total cost of homicide is $930 million annually ($1.6 million per victim); assault costs $1.4 billion per year ($1,800 per assault); and sexual assault costs $230 million annually ($2,500 per incident; Australian Institute of Criminology 2003).

The causes of violence are varied and can operate on multiple scales: within individuals, relationships, community and societies (Krug et al. 2002). Factors associated with increased violence, some as risks for violence and some as outcomes of violence, include:

- AOD use (Boles & Miotto 2003; Collins & Messerschmidt 1993);
- mental health issues (Arseneault et al. 2000; Nathanson et al. 2012; Shorey et al. 2012);
- self-harm (Christoffersen, Soothill & Francis 2005, Witt, Hawton & Fazel 2014); and
- socio-economic status and disadvantage (Cunradi, Caetano & Schafer 2002; Waters et al. 2004).

The exact impact of these associations is difficult to disentangle because, often, they are not only associated with a higher risk of violence in populations where they are prevalent, but are also outcomes of exposure to violence; and, therefore, the associations can be almost cyclical for some individuals (Neigh, Ritschel & Nemeroff 2010).

Alcohol and other drug use and violence

There is an established, bi-directional association between violence and AOD use (Boles & Miotto 2003; Cafferky et al. 2018; Collins & Messerschmidt 1993). Alcohol is commonly associated with violence; 35 percent of those who report family violence also report that alcohol was involved in incidents (Reingle et al. 2014). In Australia, 65 percent of family violence incidents reported to the police involved alcohol, and there were 29,684 alcohol-related family violence incidents in 2011 (data from NSW, Vic, WA, NT; Laslett et al. 2015). Substance use disorders, particularly alcohol and marijuana related, are more prevalent in both aggressors and victims of family violence, even after controlling for mental health as a co-variate (Smith et al. 2012). While these relationships are associations, methamphetamine use has been causally related to increased violence (McKetin et al. 2014), which highlights the importance of considering the effects of particular substances, rather than just AOD use, as a collective. Alcohol consumption also increases the severity of violence when it occurs, and this finding is consistent across a diverse range of countries, suggesting that cultural differences are not a major mediator (Graham et al. 2011). Fulu et al. (2013) conducted a study of six low socio-economic status countries and found that violence against women was predominantly attributed to gender inequity, with alcohol playing a triggering role. Depression played a larger role in promoting men's violence against women than alcohol, but this could be confounded by the fact that alcohol was used to self-medicate for depression. Alcohol reduces inhibitions and increases the likelihood of a conflict, and research has shown that it is a risk factor for family violence (Fulu et al. 2013), potentially mediated by neuropsychological impairments arising from alcohol consumption (Vitoria-Estruch et al. 2018).

Despite studies showing that alcohol is associated with increased family violence (Klostermann & Fals-Stewart 2006), not all those who drink alcohol commit violence, and not all those who commit violence are intoxicated. AOD use is, therefore, not the sole mediator of violence, and research has yet to attribute causality of AOD use for family violence. However, AOD use may be reinforcing and contributing to violence that is often attributed to inequities in gender power imbalance (Yates 2017). The association of alcohol with family violence, in particular, has become controversial, partially driven out of concern that the framing of AOD use as a medical disorder enables family violence aggressors to shift responsibility for their actions. This remains an open question, but it is not simply a theoretical issue, because the controversy results in the AOD and family violence fields failing to maximise opportunities to work together to improve outcomes. Despite the uncertainty about causality, policies that restrict alcohol access reduce intimate partner violence (Fitterer, Nelson & Stockwell 2015). However, the introduction of public health interventions aimed at reducing intimate partner violence through alcohol control measures has been delayed (Yates 2017).

Another source of information about the complexity of violence, which is under-utilised in the current debate about the link between intimate partner violence and AOD use, is pre-clinical research (research conducted in non-human models). Pre-clinical research allows for specific hypotheses to be tested in controlled conditions, with control of potentially confounding variables. Despite significant research on the characteristics of violence in the context of AOD use (Galanter et al. 1997; Miczek et al. 1994), there is seemingly a disconnect between this body of knowledge and public health research. There are issues inherent in pre-clinical research, including difficulties in modelling complexity and inter-species differences, which require careful translation through clinical research and into practice. However, questions that are deemed to be important and are identified in epidemiological research can inform the basic science and pre-clinical research agenda. Therefore, the question of why AOD use only seems to be associated with violence in some people at sometimes could be explored systematically in pre-clinical studies.

It is not the intent of this report to cover pre-clinical research in great detail, but detailed resources are available (Galanter et al. 1997; Miczek et al. 1994), and some of the observations that seem highly relevant to this field of public health research include:

- Alcohol increases aggression in some, but not all, individuals, and not at all times.
- Chronic alcohol use increases violence more than acute alcohol use.
- Alcohol consumption increases the probability of violence victimisation more than violence perpetration.
- Socially stressed individuals have increased voluntary consumption of drugs and alcohol.
- Alcohol use significantly reduces avoidance of threatening situations and stimuli.
- If an individual has a history of aggressive behaviour, alcohol will disproportionately increase a subsequent aggressive episode, compared with a non-aggressive individual.
- Drug specificity is important—alcohol, amphetamine, cocaine and Phencyclidine (PCP) have associations with increased aggression.
- Stress plays a role (both acute and chronic) in increasing voluntary consumption of drugs and alcohol.
- Subordination (akin to social status) has a role in voluntary consumption, and changes in subordination can promote aggressive behaviours (potentially mediated by the stress of being subordinated).

Mental health and violence

Poor mental health can be both a risk factor for (Arseneault et al. 2000), and a consequence of, intimate partner violence (Elbogen & Johnson 2009). Cohort studies of both men in family violence intervention programs (Shorey et al. 2012) and women reporting family violence (Nathanson et al. 2012) show strong correlations between family violence, co-morbid mental health conditions, and AOD use. The relationship between mental health and family violence is also controversial. Population level studies suggest that there is a modest but significant relationship between poor mental health and increased violence (Van Dorn, Volavka & Johnson 2012). Family violence frameworks (eg Free from Violence; Victorian Government 2017) note that poor mental health does not cause violence, and that although mental health issues may be associated with violence, not all family violence causes mental health issues. There is significant evidence to demonstrate that violence is more prevalent when mental health and AOD use are co-occurring issues (Van Dorn, Volavka & Johnson 2012). Regardless of causality, the co-occurrence of mental health and AOD use with family violence complicates service delivery. Women seeking help for family violence often have unmet mental health and AOD use needs, which can cause challenges for family violence organisations trying to find appropriate housing with services in place (Sonenshone, Rubin & Tran 2017).

Self-harm and violence

Although self-harm is a type of violence in and of itself (ie self-directed violence), it can also be a risk factor and an outcome of intimate partner violence; this link is not as well established as it is for mental health and AOD use. Suicidal threats and attempts have been associated with increased risk of violence perpetration in both males and females with schizophrenia, even when adjusted for mental health and AOD use (Witt, Hawton & Fazel 2014). Similarly, a past history of self-harm (associated with both the 'parents of' and the individual) has also been shown to be a significant risk factor for men who subsequently go on to be convicted of sexual violence offences (Christoffersen, Soothill & Francis 2005). As an outcome of violence, women who experience intimate partner violence are at a greater risk of subsequent self-harm; however, this association is not as consistent for males (Devries et al. 2013). Similarly, women who experience gender-based violence (ie sexual violence and/or family violence) are at risk of developing self-harm in the one to five years following the exposure to violence (Rees et al. 2014).

Relationship between these factors

As was discussed above, the debate about causality versus association is difficult to test, and studies attempting to test causality yield varying results. Further complicating this field is the fact that almost all of the factors of interest demonstrate a socio-economic gradient and are more prevalent and more harmful in disadvantaged populations (Lemstra et al. 2008; Morenoff, Sampson & Raudenbush 2001; Taylor et al. 2004; Wilkinson & Marmot 2003). Another major complication is that these factors can be both risk factors and outcomes of each other: both in a single person through time, and trans-generationally (Neigh, Ritschel & Nemeroff 2010). For example, an individual may experience violence, which leads to harmful AOD use, which in turn increases their risk of experiencing more violence and, subsequently, perpetrating it against the next generation. Alternatively, witnessing parental violence is one of the strongest predictors of becoming a perpetrator of violence, potentially due to the normalising of violence and aggressive behaviour and a lack of exposure to positive conflict resolution skills. Furthermore, children growing up in a family where there is family violence may experience mental health issues such as post-traumatic stress disorder, which may then lead to self-medication with AOD and may, in turn, increase the risk of violence in their household and be experienced by their own children. In these examples, proving directional causality becomes incredibly difficult and almost irrelevant, because of the cyclical nature of the harms being experienced. However, putting aside causality issues, the factors described above are consistently found to be associated with increased risk of different violence types (Krug et al. 2002); and when these factors are reduced or controlled for, interpersonal violence rates also decrease (Fitterer, Nelson & Stockwell 2015; McNiel & Binder 2007).

Given the controversies and complexities, it is important to understand the current strategies and action plans to reduce violence, and whether they consider AOD use, mental health issues and self-harm. As an example, the Victorian Government strategy, Free from Violence, aims to prevent family violence and violence against women. This strategy recognises the use of AOD as increasing the likelihood of violence and weakening pro-social behaviour and aims to integrate violence prevention and AOD use policy, advocacy and service delivery (Victorian Government 2017). However, despite acknowledging that the link between poor mental health and violence needs to be better understood, it focuses on mental health as an outcome of family violence, not as a potential risk factor (Victorian Government 2017). The *National Plan for Reducing Violence Against Women and Their Children* (Council of Australian Governments 2011) includes reduction in AOD use as a means to reduce violence, and also recognises the interplay between violence, AOD use, and mental health issues. New South Wales has introduced violence screening for women seeking treatment for both AOD use and mental health issues (Council of Australian Governments 2011).

These strategies are primarily focused on reduction of family violence; there are fewer strategies directly focused on reduction of community violence. There is no single strategy for reducing community violence in Victoria, although the role of AOD use is explicitly stated in the *Ice Action Plan*, with one outcome: a reduction in violence (both family violence and community violence; Department of Health and Human Services 2015). Other states, such as New South Wales, are explicitly addressing alcohol as a cause of community violence, with policies such as lockout laws shown to be effective in reducing community violence (Menéndez et al. 2015). None of these strategies explicitly recognises self-harm as either an input to, or an output of, intimate partner violence, although there have been recommendations that alcohol, in particular, should be considered in suicide prevention (Witt & Lubman 2018).

Aims of this study

The primary aim of this study was to pilot the feasibility and utility of coding ambulance clinical records for violence surveillance at the population level, similarly to the established monitoring of AOD-related harm. The secondary aims were, firstly, to explore types and patterns of violence, and to describe patterns of co-occurrence of AOD use, mental health symptoms, and self-harm; and, secondly, to examine the association between AOD, mental health symptoms, self-harm and violence.

Methods

Project development

This project built upon previous work done by Turning Point that uses ambulance data for surveillance of AOD use, mental health and self-harm. The National Ambulance Project and the Victorian Ambo Project are ongoing, funded by the Commonwealth Department of Health and the Victorian Department of Health and Human Services.

In this undertaking, the National Ambulance Project data was built upon to explore the feasibility of coding violence in ambulance attendances, and this report presents the initial Tasmanian and Victorian findings of this expansion.

Development of the Ambo Project

The Ambo Project was initially developed in response to rising fatal heroin overdoses in Victoria in the late 1990s (Dietze et al. 2001), with the aim of examining non-fatal heroin overdose in detail, using ambulance service records (Dietze et al. 1998). Ambulance service records can provide rich information on AOD use and have significant advantages over one-off surveys of AOD using populations. For example, ambulance service records are not subject to the same sampling biases inherent in surveys (Hser 1993). Moreover, in contrast to one-off surveys, ambulance records are routinely collected and are thus sensitive to potential changes in drug market characteristics, such as changes in drug purity, policing practices and user behaviour.

Development of the National Ambulance Project

A new project using the methodological approach established in the Ambo Project was developed to examine both self-harm and AOD misuse and overdose at a national level, using ambulance attendances. Although self-harm and AOD misuse had been identified as a priority area for the development and delivery of effective and sustained policy and treatment, there was a paucity of robust and timely data available for monitoring the nature and extent of these events at a population level.

In order to develop a robust surveillance system for identification and monitoring of self-harm and AOD misuse and overdose, the methodology and expertise developed in the Victorian Ambo Project was applied to ambulance data across jurisdictions. The strong collaboration with ACT Ambulance Service, Ambulance Tasmania, Ambulance Victoria, NSW Ambulance, Queensland Ambulance Service, St John Ambulance Northern Territory and South Australia Ambulance Service allowed for a partnership approach, with ongoing engagement and dialogue to maximise utility, relevance and accuracy of the data derived from the project. The National Ambulance Project launched in 2012, with data availability variable, depending on jurisdiction. This was further expanded to include coding of mental health variables through the Beyond the Emergency project.

Piloting violence coding in ambulance attendance data

In this project, we piloted the coding of ambulance records, firstly to identify violence in ambulance attendances; and secondly, to test the feasibility and utility of the data for a future, ongoing violence surveillance system. This current project builds on the scope and focus of the ongoing National Ambulance Project and the Beyond the Emergency project to examine the contribution of violence to ambulance attendances. Coding and analysis of ambulance service records provides an excellent basis to develop an ongoing monitoring system of violence-related ambulance presentations at a population level. This is invaluable in identifying emerging patterns, including differences across sub-populations or geographic regions, or clustering within distinct time periods, and informs both prevention and treatment responses; it also acts as a potential evidence base to support the evaluation of policy initiatives and intervention effectiveness. Development of the coding module and coding of violence commenced in 2016, with funding from the AIC's CRG scheme. Under this grant, a module to code violence within ambulance attendances was developed. That required development of violence case category definitions; modification of the project data processes, including data importing, processing, exporting and review; project database development and modification; and project coding staff training and review. Pilot data used Tasmanian and Victorian ambulance attendances data from the 2016–17 financial year.

Project methodology

Step 1: Ambulance data collection in VACIS®

Victorian and Tasmanian ambulance paramedics complete an ePCR in a clinical data collection system (VACIS®) for every incident they attend. These data contain the details of patient demographics, incident location, clinical details and outcome (eg transport to hospital) and are uploaded into the ambulance service data warehouses.

Step 2: Data filtering

The case records received by Turning Point from the ambulance service providers are a filtered selection from the total number of cases attended by the respective service provider. Each service provider performs a different degree of filtering, from basic elimination of scheduled transfers and aborted call outs, to complex filtering based on case type.

In the National Ambulance Project, three of the six ambulance services (New South Wales, Queensland and Victoria) undertake primary filtering, based on automated key word searches using over-inclusive parameters to maximise probable case capture, to extract a subset of ambulance attendances that involve AOD consumption, mental health issues or self-harm. VACIS® data matching and filtering algorithms have been previously validated (Cox et al. 2013), and the filtering used in this project followed this same process. Data filtering occurs with every data import, and manual review identifies discrepancies in the import process prior to export to the coder database for coder review.

In Victoria, cases are selected based on the following criteria (at least one match):

- case nature includes: 'Inhalation', 'Overdose', 'Alcohol', 'Drug', 'Mental Health', 'Emotional Problem', 'Psychiatric Problem' or 'Social Situation'.
- complaint includes: 'Alcohol', 'Drug Withdrawal', 'Anxiety', 'Behavioural', 'Hallucinations', 'Depression', 'Insomnia', 'Panic', 'Self-harm', 'Spinning Out', 'Suicidal', 'Suicide Attempt' or 'Emotional Distress';
- survey includes: 'Alcohol', 'Drug Paraphernalia' or 'Injection Marks';
- assessment includes: 'Alcohol', 'Drug', 'Overdose', 'Anxiety', 'Depression', 'Eating Disorder', 'Emotional Distress', 'Panic Attack', 'Psychiatric Episode', 'Sleep Disorder' or 'Social Problem';
- naloxone hydrochloride is administered;
- a mental health assessment shows hallucinations, delusional thoughts, depressive thoughts, suicidal thoughts or bizarre behaviour;
- event type is: overdose, poisoning, psychiatric, or mental health; or
- billing type is mental health or psychiatric.
- Psychiatric services are on the scene.
- A mental health procedure was documented.
- The case description includes: 'psych', 'mental', 'suicide', 'self-harm', transportation under the *Mental Health Act 2014*, mention of a Community Treatment Order, or mention of Crisis Assessment and Treatment.

Step 3: Initial data processing

The National Ambulance Project team and Population Health team at Turning Point have developed a method for parsing the received VACIS® electronic data in order to correctly identify relevant AOD, self-harm, mental health and violence-related cases and extract the required information. However, correct identification and classification of relevant cases requires additional programming, manual data entry and clerical validation, to extract the relevant information from the textual data in VACIS®. The data are internally validated when parsed for import and converted from the VACIS® transfer files provided by ambulance services to Turning Point. Variables and coding used in the VACIS® data are compared with the Turning Point database model, and any discrepancies in the import are flagged for investigation by project staff.

Step 4: Data coding and auditing

When the VACIS® data have been parsed, converted and appended to the Turning Point database, project staff (a specialised team of research assistants; RAs) manually scrutinise and code each ePCR to identify and classify the various case categories required for reporting. These include self-harm, over or inappropriate use of AOD, and mental health symptomology. Case category definitions are provided below.

RAs are trained to ensure accurate coding and use guidelines specifically designed and validated for coding these data. New staff are initially trained by senior researchers and subsequently mentored by co-coding with experienced RAs on a rotating basis, until they and their senior coding partners are confident of inter and intra-rater reliability in coding. Senior researchers review the data coded by trainee RAs to ensure inter and intra-coder reliability before the newly coded data is incorporated into the final database. Following database changes (eg introduction of new variables), RAs are retrained via workshops and vignettes. Monthly coding meetings identify coding difficulties, develop and test operational solutions and disseminate coding clarifications to maximise data quality and reliability. When RAs are not confident in assigning codes for a specific attendance, the attendance is escalated to a senior researcher for review (<1% of attendances).

Senior research staff maintain a close and ongoing relationship with ambulance services, to aid in interpreting data and identifying potential issues or discrepancies in data.

Step 5: Data review and export

After the set of ePCR record extracts is manually coded, the dataset is reviewed by senior project staff and extracted for cleaning prior to analysis. Multiple ePCR extracts for the same patient attendance are aggregated, and a random selection of cases is reviewed to ensure the manual coding was accurate and consistent. Data are then converted to a format suitable for analysis and are merged with the Turning Point master project dataset. Preliminary analyses are performed, to identify any anomalous trends in the data. Any unusual or unexpected results are then re-reviewed, to ensure that data accurately reflect the case details.

Case category definitions

AOD, self-harm and mental health-related ambulance attendances were already coded in the Ambo Project and National Ambulance Project, as part of the initial scope. This project developed and implemented the coding of the violence module; therefore, the case descriptions are included for AOD, self-harm and mental health-related ambulance attendances for reference only.

A case is determined to be AOD, self-harm, mental health or violence-related if the recent over or inappropriate use of a substance, a self-harm event, a mental health symptom or a violence incident was assessed as contributing to the ambulance attendance. This information was ascertained from the paramedic clinical assessment, patient self-report, information from third parties present, and other evidence available at the scene.

The core criterion project staff use to determine the contribution is: 'Is it reasonable to attribute a recent (usually the past 24 hours) over or inappropriate AOD use, mental health symptomology, self-harm or violence event as a contributing reason for the ambulance attendance?'

Multiple substances and multiple types of self-harm, mental health symptoms and violence incidents can be recorded and reported for one ambulance attendance. Further details of case category definitions, where required, are outlined below.

This report presents analysis based on these case categories.

Alcohol and other drug-related ambulance attendances

For most substances, the quantity or impact of the consumption are not specified, with the substance simply identified as 'related' to the ambulance attendance, with the exception of alcohol. Attendances with any alcohol consumption, including quantities (ie <1 standard drink) are classified as 'alcohol-involved'. Alcohol intoxication cases are a subset of alcohol-involved cases and are determined by paramedic clinical assessment of intoxication, supported by the reported alcohol quantity consumed, and coding is not done on the basis of blood alcohol concentration. For pharmaceuticals (including over-the-counter preparations), inappropriate use (misuse) is defined as consumption contradictory to prescriber or manufacturer instructions. For illicit drugs, any consumption is classified as related to the drug. Categories are:

- alcohol—alcohol-involved, alcohol intoxication (intoxication is a subset of alcohol-involved, and the categories are not summative);
- illicit substances—amphetamine, cannabis, synthetic cannabinoids, cocaine, emerging psychoactive substances, ecstasy, GHB, heroin, ketamine, magic mushrooms, LSD, inhalants; and
- pharmaceutical medications—anti-convulsants, anti-depressants, anti-psychotics, benzodiazepines, opioid analgesics (includes combination preparations with simple analgesic medications), other analgesics (includes simple analgesics; excludes all combination preparations with opioid medications), opioid replacement therapy, pharmaceutical stimulants, other medication (includes all substances prepared in pharmaceutical settings not further specified by codes, including over-the-counter medications, vitamins and herbal supplements).

Self-harm-related ambulance attendances

Self-harm-related ambulance attendances can include self-injurious thoughts and behaviours, which are coded as:

- threat of non-suicidal self-injury—threat of making a non-fatal self-inflicted injury, without lethal intent;
- non-suicidal self-injury—non-fatal self-inflicted injury, without lethal intent;
- suicidal ideation—thinking about killing oneself, without acting on the thoughts; and
- suicide attempt—non-fatal self-inflicted injury with lethal intent, regardless of likelihood of lethality.

Mental health-related ambulance attendances

Mental health events are defined as current, identifiable mental health symptomatology during the ambulance attendance and do not equate to a diagnosis:

- anxiety—overwhelming and intrusive worry;
- depression—low mood, feelings of hopelessness, despair, worthlessness, anhedonia, change in sleep and appetite;
- psychosis—presence of hallucinations or delusions;
- medically induced—cases where there is evidence that the presenting mental health symptoms (such as anxiety or psychosis) are related to a medical condition, rather than a mental health disorder. Includes (but not limited to) medical conditions (eg hypoxia, head injury, delirium, diabetes), neurodevelopmental disorders (eg autism spectrum disorders and attention deficit hyperactivity disorder), as well as neurocognition disorders (eg dementia);
- social or emotional distress—includes patient distress that is intrusive to paramedic assessment and treatment and/or acopia (ie inability to complete activities of daily living), without the presence of other mental health symptomatology; and
- other—mental health symptoms otherwise unspecified.

Additionally, under the mental health module, risk factors for attendances are identified; those relevant to this report were having a history of:

- dementia;
- acquired brain injury; and
- intellectual impairment.

Violence-related ambulance attendances

This project developed the coding module for violence-related ambulance attendances as per the details below. Attendances can be coded in multiple categories, and these are not mutually exclusive (eg a person can be coded as both victim and aggressor, or both physical and sexual violence can be coded, and multiple third parties can be involved):

- threatening behaviour—an explicit expression of intent to harm another person, with or without aggressive behaviour. Coding of threatening behaviour includes threatening thoughts (intent to harm others expressed to a third party), verbal or written threats (intent directly conveyed to victim or indirectly communicated to third party) and physical threat (intent to physically hurt directly conveyed to person involved), and forms of sexual violence (where physical contact did not occur);
- physical violence—intentional use of physical force to harm another person, and physical contact has occurred;
- sexual violence—a person was forced to unwillingly take part in sexual activity, and physical contact has occurred;
- third party involved in the violent incident, as recorded by paramedics:
  - intimate partner violence—involves partner, including de facto, married, estranged, previous relationship, other romantic relationships;
  - other family violence—includes other family members, including extended family, step, foster and adopted family members, and undefined family member;
  - community violence—third parties are police, paramedics, stranger, other known third party; and
  - no information about third party—these cases were excluded from analysis in this study because they could not be grouped into a violence type. This resulted in the exclusion of 2,448 attendances in Victoria and 397 attendances in Tasmania.
- Role of patient in the violent incident:
  - victim—the attendance is for an individual who has been the victim of violence;
  - aggressor—the attendance is for an individual who has been the aggressor in violence;
  - both—the attendance is for someone who has been both the aggressor and victim of violence; and
  - unknown—it is not known what role the individual played in the violence. These cases were excluded from analysis in this study because they could not be grouped into a violence type. This resulted in the exclusion of 106 attendances in Victoria and <5 attendances in Tasmania.

Patient characteristics

- age—the age of the patient is recorded by the paramedics, and these were subsequently grouped for analysis as under 18, 18–29, 30–39, 40–49, 50–59, and 60 and over. The rationale for the under 18 group was to analyse individuals who are below the legal drinking age and are minors by law;
- gender—the gender of the patient is recorded by the paramedics and is coded as male, female, or other/unknown; and

- socio-economic status (SES)—SES was defined by the Socio-Economic Indexes for Areas (SEIFA) data produced by the Australian Bureau of Statistics, using the Index of Relative Socio-economic Disadvantage (IRSD), based on the 2016 census data. This was calculated for each attendance, based on the resident postcode of the patient. The SEIFA-IRSD score was than aggregated into a quintile for each state, based on percentiles, such that quintile 1 is the most disadvantaged, and quintile 5 is the least disadvantaged.

Ambulance attendance characteristics

- type of location—this is the location type of the attendance:
  - indoors/outdoors;
  - public building/private residence;
- police co-attendance—whether the police co-attended with paramedics; and
- transport to hospital—whether the patient was transported to hospital by paramedics.

Data

This report comprises ambulance data from attendances that occurred in the states of Victoria and Tasmania during the 2016–17 financial year. Because of the relative population differences between the states (ie at December 2017, Victoria had a population of 6,385,800 persons, compared with 524,700 persons in Tasmania), results are presented for each state separately, rather than aggregated, to prevent trends in Tasmania from being masked by those in Victoria.

Case-inclusion rates

In the 2016–17 financial year, in Tasmania, there were 68,792 emergency and urgent ambulance attendances. Ambulance Tasmania provided Turning Point with all acute attendances (*n*=57,026), without applying filtering. Of those, 7,619 (13%) of attendances were coded as being related to AOD use, mental health, self-harm and/or violence. This resulted in a total case-inclusion rate of 11 percent.

In the 2016–17 financial year, in Victoria, there were 497,814 emergency and urgent ambulance attendances. Ambulance Victoria provided Turning Point with all emergency attendances, filtered as previously described (*n*=128,641). Of those, 82,120 (64%) of attendances were coded as being related to AOD use, mental health, self-harm and/or violence. This resulted in a total case-inclusion rate of 17 percent.

Analysis

Relationships between categorical variables were explored using chi-square analysis, with both χ^2 and the *p*-value reported. *P* values less than 0.05 are considered significant. However, this analysis could not be done for categories that are not mutually exclusive (eg type of violent behaviour; threatening behaviour and physical violence) and, in these instances, percentages are reported without statistical testing. All statistical analysis was conducted in Stata (StataCorp. 2013. Stata Statistical Software: Release 13. College Station, TX: StataCorp LP).

Ethics

Ethics approval was obtained from the Eastern Health Human Research Ethics Committee. Because of concerns about potential identifiability, where any analysis yielded an $n<5$, an exact *n* was not reported, and no percentage is shown, in compliance with the ethics approval.

Context and limitations

It is important to note that the National Ambulance Project dataset does not include all violence; it includes violence where an ambulance attended, and therefore records more severe incidents, where acute harm has been experienced. Nonetheless, it does include violence that may not involve police attendance or where no police report was made. The proportion of police co-attendance for the included ambulance attendances is provided in the results. The proportion of all violence incidents that are reported to ambulance services is unknown, suggesting that further research is required. However, with only two in five cases of family violence reported to police (Miller et al. 2016), this dataset captures details on violence not reported to the police, allowing for detailed analysis of a subset of violence. Ambulance data can only capture reported incidents of violence, and, therefore, the data underestimate prevalence.

Because this study uses secondary data, there are limitations and biases in the collection and coding of data. Ambulance data are collected for operational purposes, and incomplete or inconsistent recording of variables can occur. Paramedic documentation is part of their professional role, similar to that of doctors or nurses recording information in hospital medical records; the documentation contains whatever information is clinically relevant to treating the patient. The coding is dependent on the information recorded in the clinical notes. Therefore, if a patient is unconscious or unable to answer questions, there may be missing information, particularly if it is not relevant to the clinical response. There is no reason to assume that the documentation between Victoria and Tasmania (or any other jurisdiction) would differ, given that it is focused on the paramedic response to patient needs.

The initial reason for the ambulance attendance cannot be determined from this data. Violence may not have been the principal reason; the attendance may be primarily related to mental health or other issues occurring for an individual who was the victim or aggressor in the violence. Where there are co-occurring issues, such as AOD ingestion, mental health issues or self-harm, these refer to what was observed in the patient at the time of the ambulance attendance and was recorded by paramedics as relevant to the care needs of that individual. This does not imply that any issue was causal to another.

Where an individual has been coded as the aggressor in violence, the ambulance attendance is for that individual, to address the harms that the aggressor is experiencing. Therefore, ambulance attendance data represent only a subset of aggressors in violence and are unlikely to capture data on individuals who are the aggressor in violence but are experiencing no acute harms themselves. Additionally, an individual can be coded as both the victim and aggressor in violence, although this overlap is quantified in the results. It is possible that care may also have been provided to the victim of violence by the paramedics if it was needed, but these attendances are not linked and will be recorded as two different attendances, one for the victim and one for the aggressor.

The involvement of AOD is determined from information provided by the patient or others at the scene or is based on paramedics' clinical observations and assessment, not on toxicological testing. Multiple substances may have been consumed, and these categories are not summative. Attendances where the person had consumed alcohol, but the paramedic notes did not clearly indicate alcohol intoxication, are coded as 'alcohol involved'. A determination that an attendance is classified as alcohol intoxication is based upon the paramedic notes and is selected when the paramedic states that the client was intoxicated, or was presumed to be so, because of the quantity of alcohol consumed and/or the clinical presentation; it is not related to blood alcohol concentration. The coding system is conservative, and the default position is 'alcohol involved' unless there is clear evidence of alcohol intoxication. Given that intoxication is not always clearly visible, even to trained observers, the intoxication level is likely to be underestimated. 'No alcohol involvement' means that the ambulance record did not note that the patient had consumed any alcohol or that there were any signs of use; however, some cases may have been missed, because there is no requirement for mandatory reporting of alcohol consumption. Furthermore, ambulances do not attend all suicides, so suicide is under-represented in this dataset. Lastly, mental health coding reflects symptoms observed by paramedics, and does not represent a diagnosis of a mental illness.

The results reflect ambulance attendances in Victoria and Tasmania, which collectively represent approximately 28 percent of Australia's population; data may not be reliably extrapolated to populations that vary significantly from that of these states. Ambulance data may not include all cases of violence-related harm, only acute events requiring medical intervention. Nonetheless, the data are unique and provide a wide population coverage.

Results

Summary of results—Victoria and Tasmania

In the 2016–17 financial year, the National Ambulance Project dataset contained 74,478 ambulance attendances in Victoria and 7,191 ambulance attendances in Tasmania. Of those, 7.7 percent in Victoria and 7.8 percent in Tasmania were related to violence.

The violence types in the 6,295 violence-related ambulance attendances across both Victoria and Tasmania were:

- 1,176 (19%) coded as intimate partner violence;
- 1,553 (25%) coded as other family violence; and
- 3,809 (61%) coded as community violence.

The violent behaviour in the 6,295 violence-related ambulance attendances across both Victoria and Tasmania were:

- 3,235 (51%) coded as threatening behaviour;
- 3,419 (54%) coded as physical violence; and
- 42 (0.7%) coded as sexual violence.

The roles of those attended in the 6,295 violence-related ambulance attendances across both Victoria and Tasmania were:

- 2,132 (34%) for an attendance for a victim in violence;
- 3,872 (62%) for an attendance for an aggressor in violence; and
- 291 (5%) for an attendance where the individual was both the victim and aggressor in violence.

Co-occurring issues in violence in the 6,295 violence-related ambulance attendances across both Victoria and Tasmania were:

- 2,396 (38%) also involved AOD use;
- 1,989 (32%) also involved mental health symptoms; and
- 1,479 (24%) also involved self-harm.

The gender of individuals in the 6,295 violence-related ambulance attendances across both Victoria and Tasmania was:

- 3,431 (55%) male;
- 2,856 (45%) female; and
- eight (0.1%) gender other or unspecified.

Victoria

Summary of results

In the 2016–17 financial year, the National Ambulance Project dataset contained 74,478 ambulance attendances in Victoria. Of those, 5,735 (8%) were related to violence.

The violence types in the 5,735 violence-related ambulance attendances in Victoria were:

- 1,055 (18%) coded as intimate partner violence;
- 1,420 (25%) coded as other family violence; and
- 3,482 (61%) coded as community violence.

The violent behaviours in the 5,735 violence-related ambulance attendances in Victoria were:

- 3,000 (52%) coded as threatening behaviour;
- 3,064 (53%) coded as physical violence; and
- 42 (0.7%) coded as sexual violence.

The roles of those attended in the 5,735 violence-related ambulance attendances in Victoria were:

- 1,847 (32%) for an attendance for a victim in violence;
- 3,623 (63%) for an attendance for an aggressor in violence; and
- 265 (5%) for an attendance where the individual was both the victim and aggressor in violence.

Co-occurring issues in violence in the 5,735 violence-related ambulance attendances in Victoria were:

- 2,194 (38%) also involved AOD use;
- 1,867 (33%) also involved mental health symptoms; and
- 1,397 (24%) also involved self-harm.

The gender of individuals in the 5,735 violence-related ambulance attendances in Victoria was:

- 3,119 (54%) male;
- 2,609 (46%) female; and
- seven (0.1%) gender other or unspecified.

Intimate partner violence—victims

The following tables and figures describe ambulance attendances for victims of intimate partner violence. These attendances relate to harms experienced by a person who was the victim of violence by their intimate partner. There were 691 of these ambulance attendances in Victoria in the 2016–17 financial year. Of those, 30 patients (4%) were coded as being both the victim and aggressor in the violence. A case study of ambulance attendances for victims of intimate partner violence is provided in Box 1.

Box 1: Case study of an ambulance attendance for a victim of intimate partner violence

Female Patient, Age 44

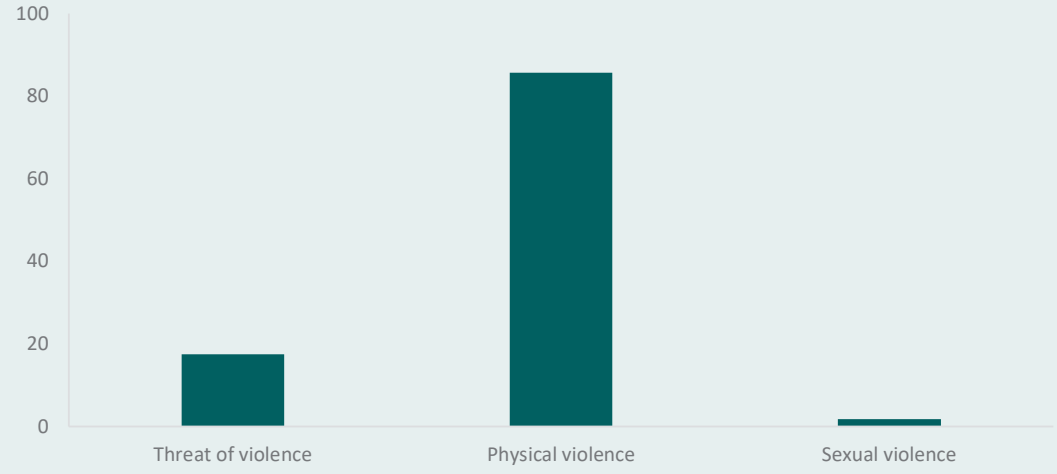
Attended at Private Residence, Indoors. Police co-attended.

History of bipolar disorder.

Patient normally well and independent, well-managed mental health with GP and medications. Today consumed two alcoholic beverages and had argument with partner around 1900hrs. Argument allegedly escalated and was allegedly assaulted by partner. Patient recalls being hit and woke sometime later on floor of house with bloodied mouth and lip. Loss of consciousness for unknown time. Patient cleaned self up and phoned 56 to make report re: above. AV called by 56 for assessment. Mild facial bruising, nil grimace, good range of movement, concerned over her ability to return to work.

The proportions of different types of violent behaviour within ambulance attendances for victims of intimate partner violence are shown in Figure 1. The majority (86%) of these attendances were for physical violence.

Figure 1: Ambulance attendances for the victim of intimate partner violence, by type of violent behaviour, Victoria



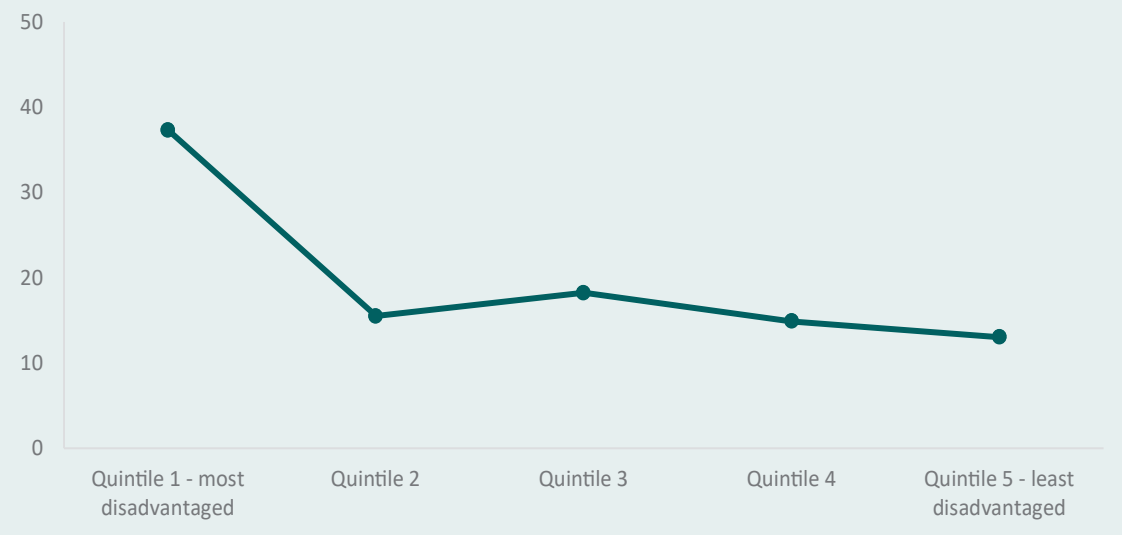
The characteristics of ambulance attendances for victims of intimate partner violence are shown in Table 1. Females comprised more than three-quarters of victims of intimate partner violence, and the 30–39 age group was the most highly represented. These attendances predominantly occurred indoors in a private location. Police co-attended approximately three-quarters of these ambulance attendances, and approximately two-thirds of patients were transported to hospital.

Table 1: Characteristics of ambulance attendances for the victim of intimate partner violence, Victoria

		n	%
Gender	Male	105	15.2
	Female	586	84.8
	Other/unknown	0	0.0
Age group	Under 18	14	2.0
	18 to 29	199	28.8
	30 to 39	206	29.8
	40 to 49	173	25.0
	50 to 59	66	9.6
	60 and over	33	4.8
Location type	Private place	533	77.1
	Public place	145	21.0
	Unknown	12	1.7
Location	Indoors	313	45.3
	Outdoors	192	27.8
	Unknown	185	26.8
Police co-attendance	Not stated	188	27.2
	Yes	503	72.8
Transport to hospital	Not transported	223	32.3
	Transported	468	67.7

There is a clear SES gradient visible for victims of intimate partner violence, seen in Figure 2, with those in the lowest socio-economic quintile comprising almost 40 percent of these attendances.

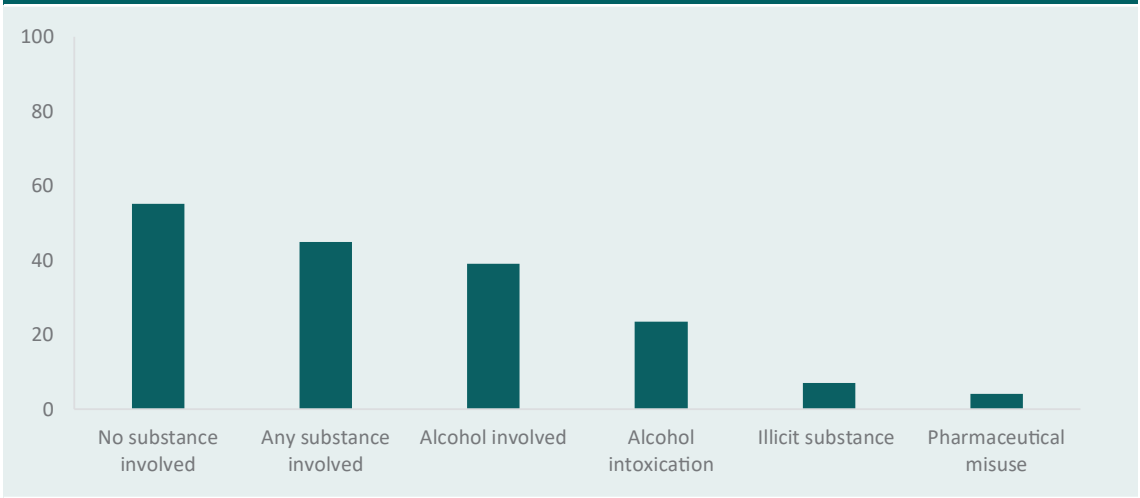
Figure 2: Ambulance attendances for the victim of intimate partner violence, by socio-economic status (SES), Victoria



Alcohol and other drug involvement

AOD consumption (including alcohol, illicit drugs and pharmaceutical misuse) by the victim of the intimate partner violence is shown in Figure 3. Slightly fewer than half of these ambulance attendances also involved AOD. However, where AOD was involved, this was predominantly alcohol (39%), and illicit drugs and pharmaceutical misuse both represented fewer than 10 percent of these ambulance attendances.

Figure 3: Ambulance attendances for the victim of intimate partner violence, by AOD, Victoria



Of those ambulance attendances for victims of intimate partner violence that involved either illicit or pharmaceutical drug misuse, the specific drugs are presented in Table 2. The most common illicit drugs in ambulance attendances for victims of intimate partner violence were cannabis and amphetamines, and benzodiazepines were the most commonly misused pharmaceutical medication.

Table 2: Ambulance attendances for the victim of intimate partner violence, by individual drug, Victoria

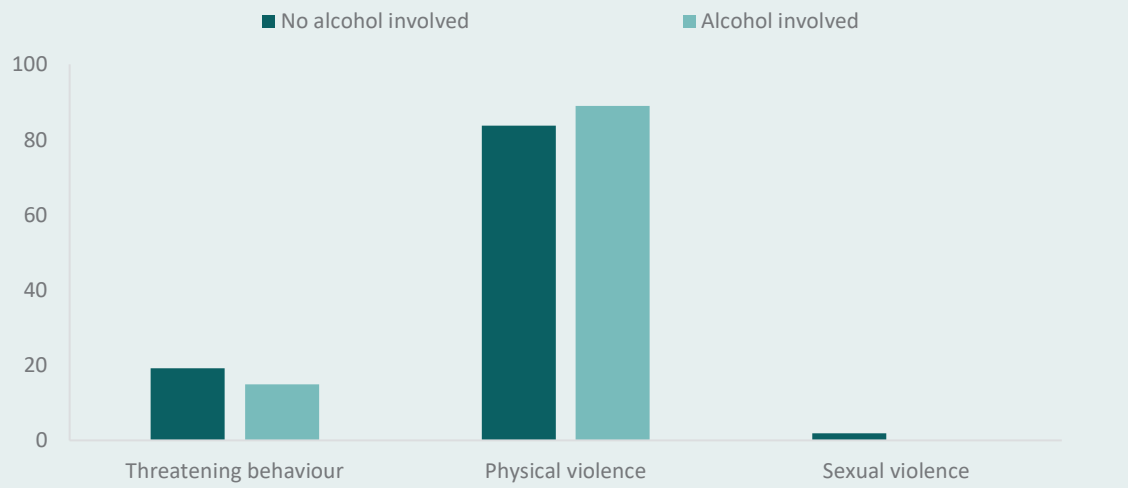
		n	%
Illicit drug	No illicit substance	643	93.1
	Any illicit substance	48	6.9
	Amphetamine	22	3.2
	Cannabis	24	3.5
	Synthetic cannabinoids	*n*<5	–
	Cocaine	*n*<5	–
	Ecstasy	0	0.0
	GHB	*n*<5	–
	Heroin	*n*<5	–
	Ketamine	0	0.0
	LSD	0	0.0
	Inhalants	0	0.0
Pharmaceutical drug	No pharmaceutical misuse	662	95.8
	Any pharmaceutical misuse	29	4.2
	Anti-convulsant	*n*<5	–
	Anti-depressant	*n*<5	–
	Anti-psychotic	*n*<5	–
	Benzodiazepine	17	2.5
	Opioid analgesic	*n*<5	–
	Other analgesic	5	0.7
	Opioid replacement therapy	0	0.0
	Pharmaceutical stimulant	*n*<5	–
	Other medication	6	0.9

Characteristics of ambulance attendances for victims of intimate partner violence, differentiated by alcohol involvement, are shown in Table 3, and Figure 4 shows the type of violent behaviour. Where alcohol was involved, physical violence was more prevalent than when no alcohol was involved (89% vs 84%, respectively). The presence of alcohol resulted in an increase in the percentage of males who were victims of intimate partner violence (10% to 23%, *p* value <0.001). The percentage of patients who were transported to hospital was significantly higher when alcohol was involved, compared with attendances where no alcohol was involved (77% vs 62%, respectively, *p* value <0.001).

Table 3: Characteristics of ambulance attendances for the victim of intimate partner violence, by alcohol involvement, Victoria

		No alcohol involved (*n*=421)		Alcohol involved (*n*=270)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	43	10.2	62	23.0	20.75 (<0.001)
	Female	378	89.8	208	77.0	
Age group	Under 18	12	2.9	*n*<5	–	19.51 (0.002)
	18 to 29	133	31.6	66	24.4	
	30 to 39	133	31.6	77	27.0	
	40 to 49	93	22.1	80	29.6	
	50 to 59	29	6.9	37	13.7	
	60 and over	21	5.0	12	4.4	
SES	Quintile 1 (most disadvantaged)	161	38.2	97	35.9	1.77 (0.777)
	Quintile 2	69	6.4	38	14.1	
	Quintile 3	73	17.3	53	19.6	
	Quintile 4	61	14.5	40	15.6	
	Quintile 5 (least disadvantaged)	52	12.4	38	14.1	
Location type	Private place	324	77.0	209	77.4	2.08 (0.354)
	Public place	91	21.6	54	20.0	
	Unknown	5	1.2	7	2.6	
Location	Indoors	205	48.7	108	40.0	5.43 (0.066)
	Outdoors	112	26.6	80	29.6	
	Unknown	103	24.5	82	30.4	
Police co-attendance	Not stated	118	28.0	70	25.9	0.37 (0.545)
	Yes	303	72.0	200	74.1	
Transport to hospital	Not transported	160	38.0	63	23.3	16.20 (<0.001)
	Transported	261	62.0	207	76.7	

Figure 4: Ambulance attendances for the victim of intimate partner violence, by violent behaviour and alcohol involvement, Victoria



Mental health involvement

Ambulance attendances involving current mental health symptoms for victims of intimate partner violence are shown in Figure 5. Less than one-quarter of attendances for victims of intimate partner violence involved mental health symptomology. However, where mental health symptoms were present, these were most commonly symptoms of anxiety.

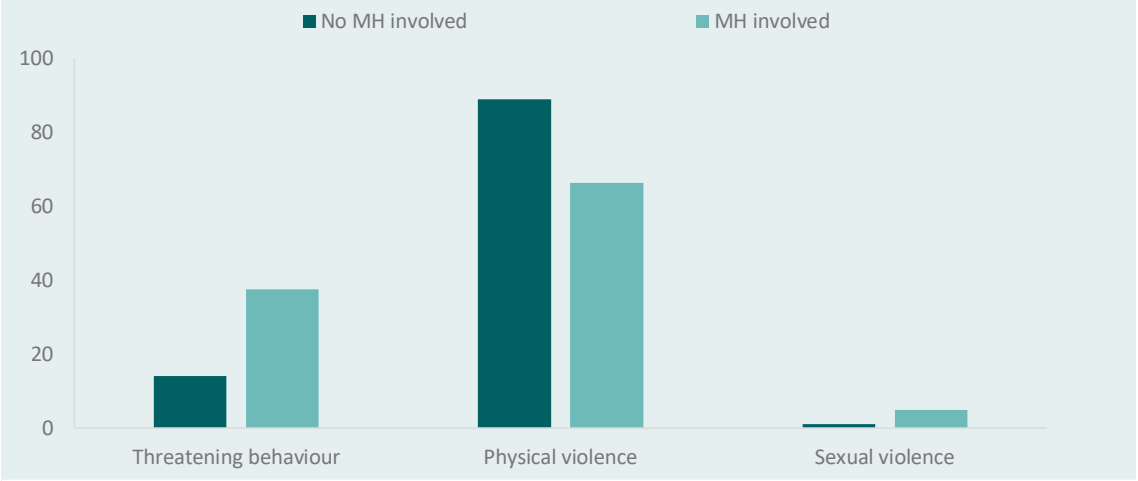
Figure 5: Ambulance attendances for the victim of intimate partner violence, by current mental health symptoms, Victoria

Characteristics of ambulance attendances for victims of intimate partner violence, differentiated by the presence or absence of current mental health symptoms, are shown in Table 4, and Figure 6 shows the type of violent behaviour. Where current mental health symptoms were observed in the patient, the percentage of threatening behaviour-related ambulance attendances was higher (38%), compared with those attendances with no mental health symptoms observed in the patient (14%). The percentage of attendances for females was significantly (p=0.028) higher where mental health symptoms were observed (92%), compared with those with no mental health symptoms (84%). Transport to hospital for victims of intimate partner violence was higher when there were current mental health symptoms observed (76% vs 66%, p=0.048), but police co-attendance was lower (60% vs 75%, p=0.002).

Table 4: Characteristics of ambulance attendances for the victim of intimate partner violence, by current mental health symptoms, Victoria

		No mental health symptoms (n=590)		Mental health symptoms (n=101)		
		n	%	n	%	χ^2 (p value)
Gender	Male	97	16.4	8	7.9	4.86 (0.028)
	Female	493	83.6	93	92.1	
Age group	Under 18	12	2.0	n<5	–	5.83 (0.323)
	18 to 29	174	29.5	25	24.8	
	30 to 39	166	28.1	40	39.6	
	40 to 49	153	25.9	20	19.8	
	50 to 59	57	9.7	9	8.9	
	60 and over	28	4.7	5	5.0	
SES	Quintile 1 (most disadvantaged)	222	37.6	36	35.6	1.32 (0.859)
	Quintile 2	90	15.3	17	16.8	
	Quintile 3	110	18.6	16	15.8	
	Quintile 4	85	14.4	18	17.8	
	Quintile 5 (least disadvantaged)	76	12.9	14	13.9	
Location type	Private place	456	77.3	77	76.2	1.05 (0.592)
	Public place	124	21.0	21	20.8	
	Unknown	9	1.5	n<5	–	
Location	Indoors	264	44.7	49	48.5	0.67 (0.715)
	Outdoors	164	27.8	28	27.7	
	Unknown	161	27.3	24	23.8	
Police co-attendance	Not stated	148	25.1	40	39.6	9.18 (0.002)
	Yes	442	74.9	61	60.4	
Transport to hospital	Not transported	199	33.7	24	23.8	3.92 (0.048)
	Transported	391	66.3	77	76.2	

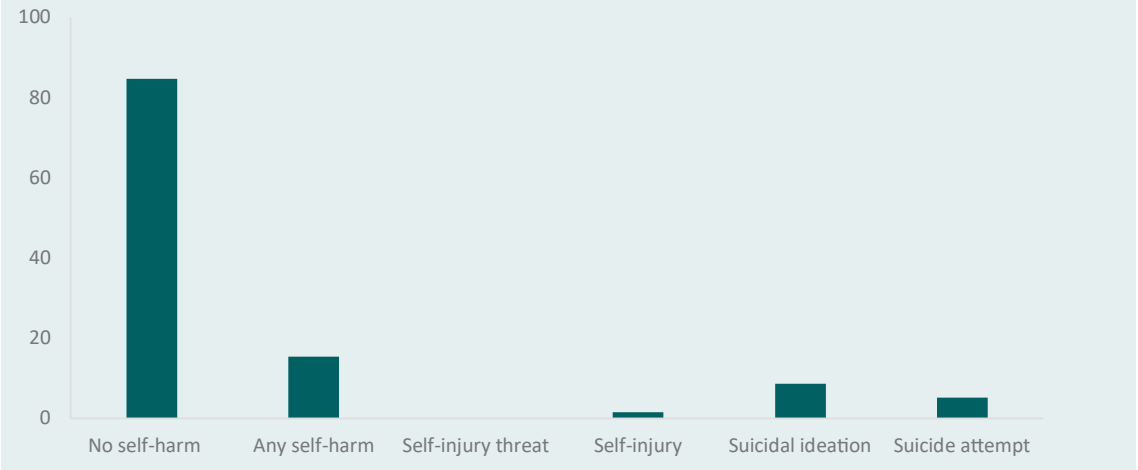
Figure 6: Ambulance attendances for the victim of intimate partner violence, by violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in ambulance attendances for victims of intimate partner violence is shown in Figure 7. Less than 20 percent of these attendances involved self-harm. However, where self-harm was present, this was most commonly suicidal ideation.

Figure 7: Ambulance attendances for the victim of intimate partner violence, by self-harm, Victoria

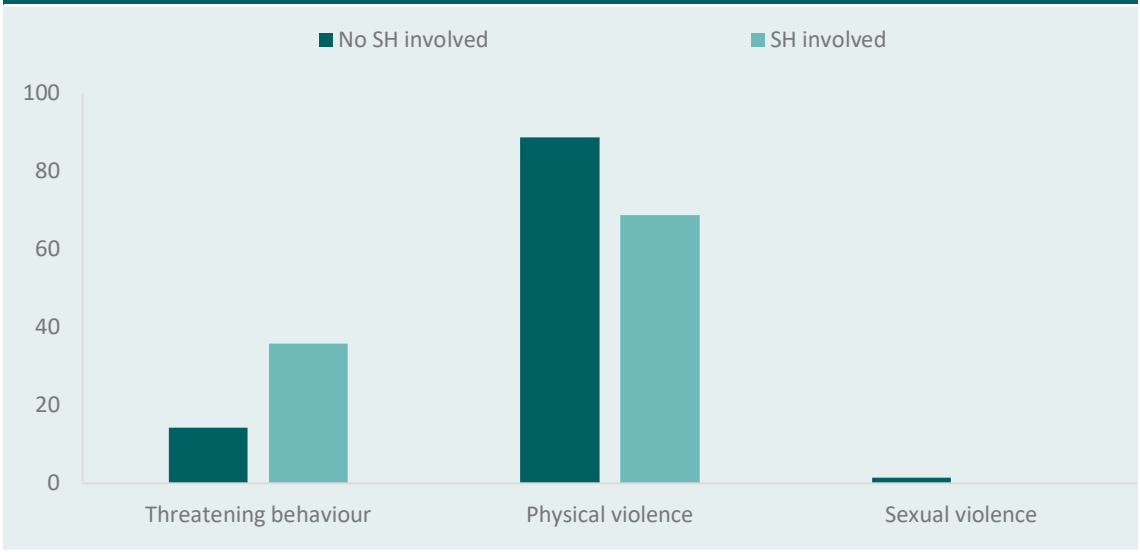


Characteristics of ambulance attendances for victims of intimate partner violence, differentiated by the presence or absence of self-harm, are shown in Table 5, and Figure 8 shows the type of violent behaviour. Where self-harm was observed in a victim of intimate partner violence, threatening behaviour was more prevalent (36% vs 14%), and physical violence less prevalent (69% vs 89%), than where there was no self-harm observed. Almost all victims of intimate partner violence who also had self-harm observed were transported to hospital (99% vs 62%, $p<0.001$), but police were less likely to co-attend than when there was no self-harm evident (62% vs 75%, $p=0.008$).

Table 5: Characteristics of ambulance attendances for the victim of intimate partner violence, by self-harm, Victoria

		No self-harm (*n*=585)		Self-harm (*n*=106)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	93	15.9	12	11.3	1.46 (0.227)
	Female	492	84.1	94	88.7	
Age group	Under 18	11	1.9	*n*<5	–	3.55 (0.616)
	18 to 29	163	27.9	36	34.0	
	30 to 39	181	30.9	25	23.6	
	40 to 49	145	24.8	28	26.4	
	50 to 59	56	9.6	10	9.4	
	60 and over	29	5.0	*n*<5	–	
SES	Quintile 1 (most disadvantaged)	219	37.4	39	36.8	2.17 (0.704)
	Quintile 2	94	16.1	13	12.3	
	Quintile 3	104	17.8	22	20.8	
	Quintile 4	88	15.0	15	14.2	
	Quintile 5 (least disadvantaged)	73	12.5	17	16.0	
Location type	Private place	456	77.9	77	72.6	11.50 (0.003)
	Public place	123	21.0	22	20.8	
	Unknown	6	1.0	6	5.7	
Location	Indoors	266	45.5	47	44.3	1.71 (0.425)
	Outdoors	167	28.5	25	23.6	
	Unknown	152	26.0	33	31.1	
Police co-attendance	Not stated	148	25.3	40	37.7	7.01 (0.008)
	Yes	437	74.7	66	62.3	
Transport to hospital	Not transported	222	37.9	*n*<5	–	56.22 (<0.001)
	Transported	363	62.1	105	99.1	

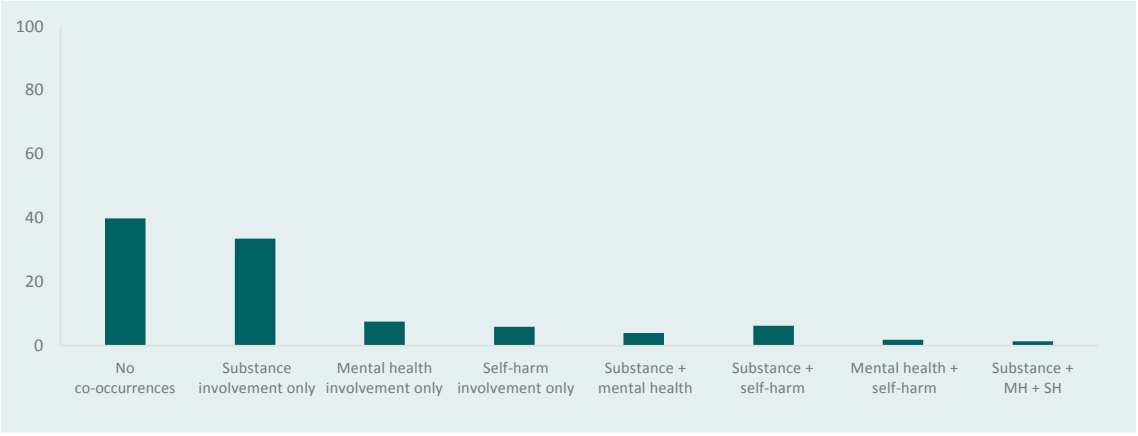
Figure 8: Ambulance attendances for the victim of intimate partner violence, by type of violent behaviour and self-harm, Victoria



Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances associated with victims of intimate partner violence are shown in Figure 9. Almost 40 percent of these attendances had no co-occurring issues for the victim of the violence. Where there were co-occurring issues, this was most commonly only AOD involvement (ie no mental health symptoms or self-harm).

Figure 9: Ambulance attendances for the victim of intimate partner violence, by co-occurring issues, Victoria



Intimate partner violence—aggressors

The following tables and figures describe ambulance attendances for aggressors of intimate partner violence. There were 383 ambulance attendances in Victoria in the 2016–17 financial year for aggressors of intimate partner violence. These attendances relate to harms experienced by a person who was the aggressor in violence against their intimate partner. The data will thus not capture all violence perpetration, only cases where the aggressor in the violence had experienced harm and required treatment by paramedics. Of those 383, 30 (8%) were coded as being both the aggressor and victim in the violence. A case study of this type of attendance is provided in Box 2.

Box 2: Case study of an ambulance attendance for an aggressor of intimate partner violence

Female Patient, Age 54

Attended at Public Place, Outdoors.

Patient with history of obsessive compulsive disorder, schizophrenia, previous suicidal ideation and attempts. Has experienced domestic violence and sexual abuse as a child. Most recent of two heart attacks eight years prior.

Fifty-four-year-old female, personal medical history of various mental health issues, domestic violence, sexual abuse as a child and two heart attacks. Has had increasing family issues recently which she has been unable to cope with. This evening, although not arguing with her husband, she rang the police to say that if she didn't get help she would stab her husband. Patient compliant with police when they arrived and they issued a section 351 form. Patient compliant. Patient has consumed about eight bourbons tonight.

Overview

The types of violent behaviour within ambulance attendances for aggressors in intimate partner violence are shown in Figure 10. The majority of ambulance attendances for aggressors in intimate partner violence involved threat of violence.

Figure 10: Ambulance attendances for the aggressor of intimate partner violence, by type of violent behaviour, Victoria

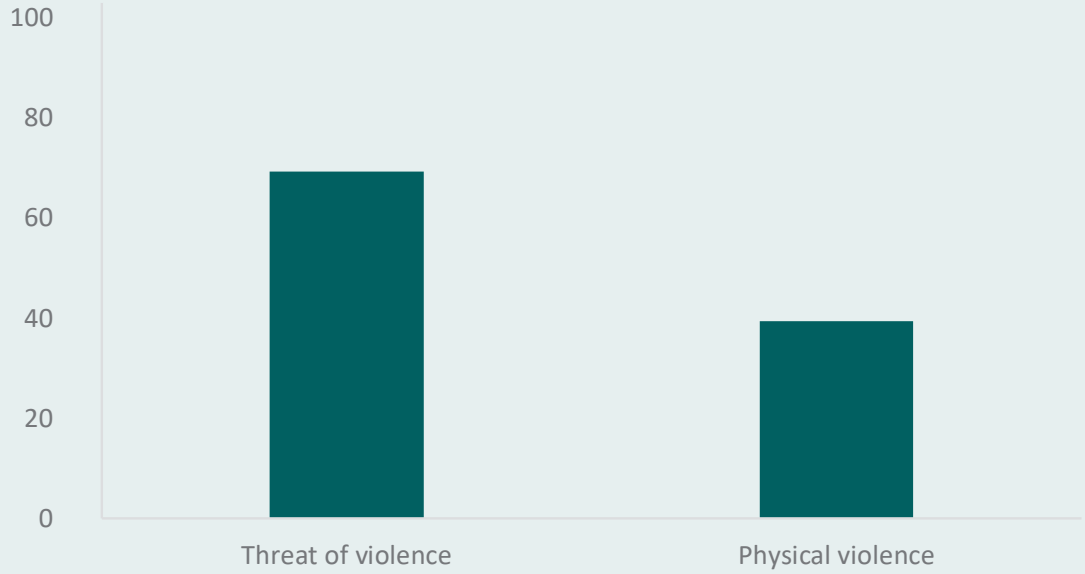


Table 6 shows the characteristics of ambulance attendances for aggressors in intimate partner violence. Males made up just over half of all aggressors of intimate partner violence (55%). The most common age group of intimate partner violence aggressors attended by ambulances was the 60 and over age group. Most attendances for aggressors of intimate partner violence occurred indoors in a private place. Police co-attended almost three-quarters of these attendances, and over 80 percent were transported to hospital.

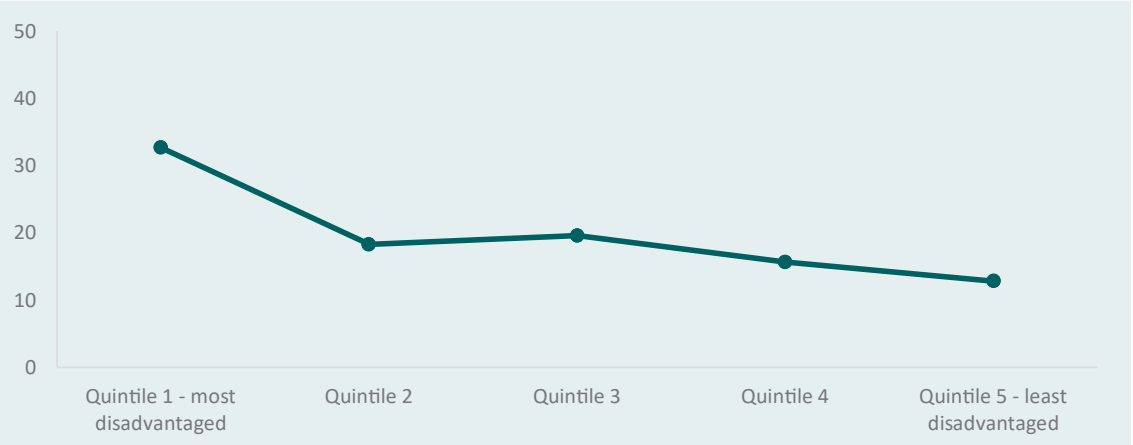
The high proportion of attendances for those aged over 60 was an unexpected result. Upon additional analysis, it was found to be associated with medically induced mental health symptoms. This sub-group is therefore analysed separately, in the sub-section titled *Ambulance attendances featuring violence and medically induced mental health symptoms.*

Table 6: Characteristics of ambulance attendances for the aggressor of intimate partner violence, Victoria

		n	%
Gender	Male	210	54.8
	Female	172	44.9
	Other/unknown	*n*<5	–
Age group	Under 18	13	3.4
	18 to 29	93	24.3
	30 to 39	83	21.7
	40 to 49	57	14.9
	50 to 59	37	9.7
	60 and over	100	26.1
Location type	Private place	302	78.9
	Public place	75	19.6
	Unknown	6	1.6
Location	Indoors	219	57.2
	Outdoors	88	23.0
	Unknown	76	19.8
Police co-attendance	Not stated	115	30.0
	Yes	268	70.0
Transport to hospital	Not transported	72	18.8
	Transported	311	81.2

Figure 11 presents a clear SES gradient, with those in the lowest socio-economic quintile comprising over 30 percent of ambulance attendances for aggressors in intimate partner violence in Victoria.

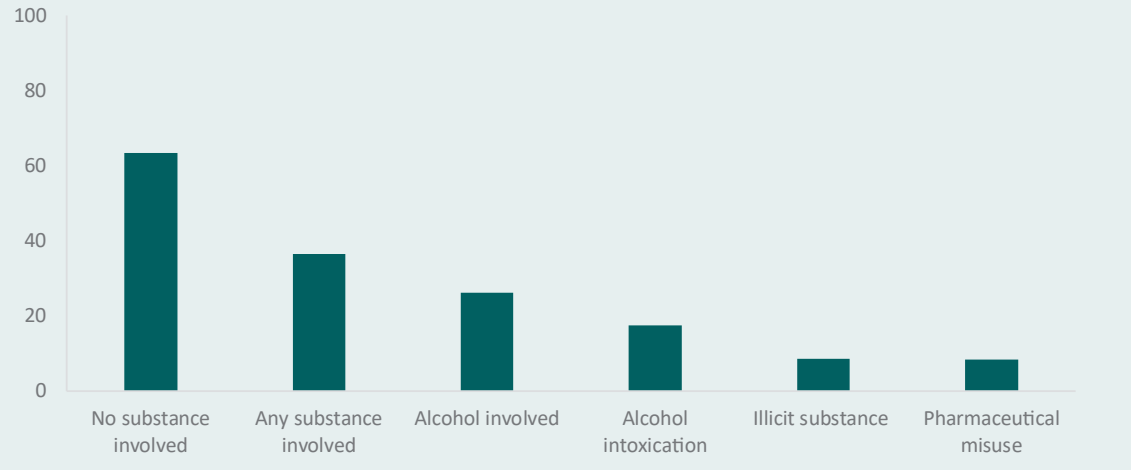
Figure 11: Ambulance attendances for the aggressor of intimate partner violence, by socio-economic status (SES), Victoria



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical drugs) in ambulance attendances for an aggressor in intimate partner violence is shown in Figure 12. Approximately one-third of these ambulance attendances co-involved AOD. However, where AOD was involved, this was predominantly for alcohol involvement (26%), with illicit and pharmaceutical drugs both representing less than 10 percent of these ambulance attendances. The sub-group of medically induced mental health symptoms had very low involvement of AOD (n<5); therefore, because they were not affecting the overall trends, they have been analysed together.

Figure 12: Ambulance attendances for the aggressor of intimate partner violence, by AOD, Victoria



Where ambulance attendances did involve either illicit or pharmaceutical drugs, the specific substances involved are shown in Table 7. The most common illicit substances in ambulance attendances for aggressors of intimate partner violence were cannabis and amphetamines. Benzodiazepines were the most commonly misused pharmaceutical in these attendances.

Table 7: Ambulance attendances for the aggressor of intimate partner violence, by individual substance, Victoria

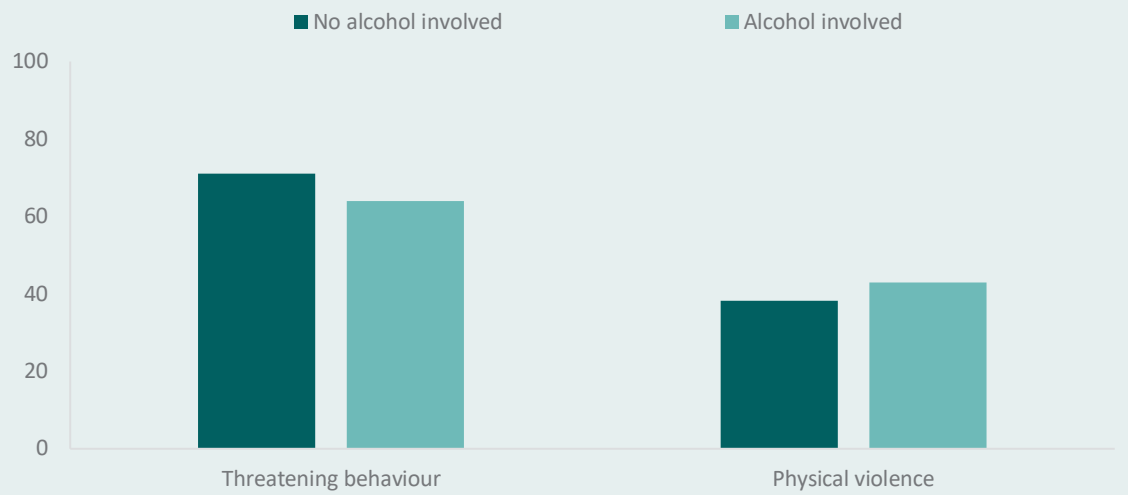
		n	%
Illicit drugs	No illicit substance	350	91.4
	Any illicit substance	33	8.6
	Amphetamine	11	2.9
	Cannabis	15	3.9
	Synthetic cannabinoids	*n*<5	–
	Cocaine	0	0.0
	Ecstasy	0	0.0
	GHB	*n*<5	–
	Heroin	*n*<5	–
	Ketamine	0	0.0
	LSD	0	0.0
	Inhalants	0	0.0
Pharmaceutical drugs	No pharmaceutical misuse	351	91.6
	Any pharmaceutical misuse	32	8.4
	Anti-convulsant	*n*<5	–
	Anti-depressant	*n*<5	–
	Anti-psychotic	*n*<5	–
	Benzodiazepine	13	3.4
	Opioid analgesic	6	1.6
	Other analgesic	5	1.3
	Opioid replacement therapy	*n*<5	–
	Pharmaceutical stimulant	*n*<5	–
	Other medication	5	1.3

Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by the presence or absence of alcohol, are shown in Table 8, and Figure 13 shows the type of violent behaviour. Where alcohol was involved, the percentage of physical violence by aggressors was higher, compared with attendances where no alcohol was involved (43% vs 38%). The 60 and over age group was less likely to be represented when alcohol was involved, compared with instances when no alcohol was involved (17% vs 29%).

Table 8: Characteristics of ambulance attendances for the aggressor of intimate partner violence, by alcohol involvement, Victoria

		No alcohol involved (*n*=283)		Alcohol involved (*n*=100)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	158	55.8	52	52.0	0.84 (0.657)
	Female	124	43.8	48	48.0	
Age group	Under 18	13	4.6	0	0.0	24.97 (<0.001)
	18 to 29	71	25.1	22	22.0	
	30 to 39	58	20.5	25	25.0	
	40 to 49	41	14.5	16	16.0	
	50 to 59	17	6.0	20	20.0	
	60 and over	83	29.3	17	17.0	
SES	Quintile 1 (most disadvantaged)	90	31.8	35	35.0	3.58 (0.466)
	Quintile 2	58	20.5	12	12.0	
	Quintile 3	53	18.7	22	22.0	
	Quintile 4	44	15.5	16	16.0	
	Quintile 5 (least disadvantaged)	36	12.7	13	13.0	
Location type	Private place	220	77.7	82	82.0	0.91 (0.635)
	Public place	58	20.5	17	17.0	
	Unknown	5	1.8	*n*<5	–	
Location	Indoors	162	57.2	57	57.0	0.11 (0.946)
	Outdoors	64	22.6	24	24.0	
	Unknown	57	20.1	19	19.0	
Police co-attendance	Not stated	88	31.1	27	27.0	0.59 (0.442)
	Yes	195	68.9	73	73.0	
Transport to hospital	Not transported	50	17.7	22	22.0	0.91 (0.341)
	Transported	233	82.3	78	78.0	

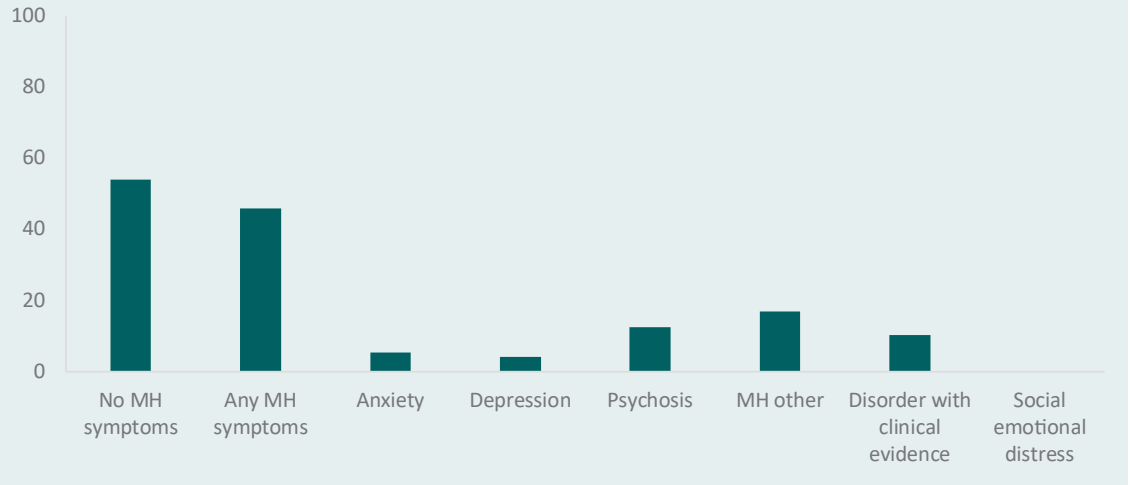
Figure 13: Ambulance attendances for the aggressor of intimate partner violence, by type of violent behaviour and alcohol involvement, Victoria



Mental health involvement

The involvement of current mental health symptoms in attendances for aggressors in intimate partner violence is shown in Figure 14. Just over half of these attendances had no current mental health symptoms for the aggressor in the violence. However, where mental health symptoms were present, this was most commonly unspecified mental health symptoms or symptoms of psychosis.

Figure 14: Ambulance attendances for the aggressor of intimate partner violence, by current mental health symptoms, Victoria

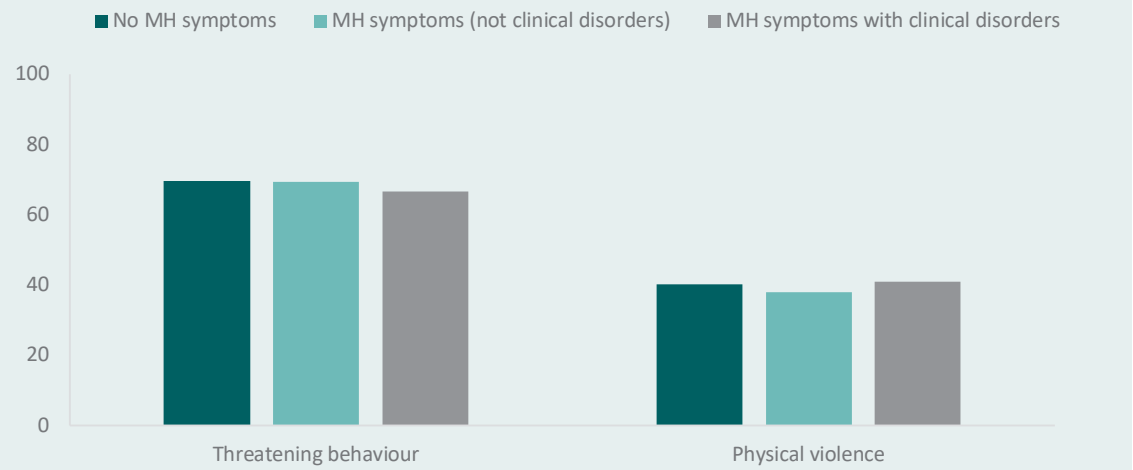


Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by the presence or absence of current mental health symptoms, are shown in Table 9, and Figure 15 shows the type of violent behaviour. Mental health symptoms did not differentiate the type of violent behaviour perpetrated, regardless of medically induced mental health symptoms. The percentage of females who were the aggressor in intimate partner violence was higher (50%) when current mental health symptoms were not medically induced, but decreased when medically induced mental health symptoms were present (31%). Transport to hospital of aggressors in intimate partner violence was higher when mental health symptoms were also present, regardless of medically induced mental health symptoms (91% and 92% respectively, vs 73%, $p<0.001$).

Table 9: Characteristics of ambulance attendances for the aggressor of intimate partner violence, by current mental health symptom (MHS), Victoria

		No MHS (*n*=207)		MHS—not medically induced (*n*=137)		Medically induced MHS (*n*=39)		
		n	%	*n*	%	*n*	%	χ^2 (*p* value)
Gender	Male	116	56.0	68	49.6	26	66.7	13.23 (0.010)
	Female	91	44.0	69	50.4	12	30.8	
Age group	Under 18	7	3.4	5	3.6	*n*<5	–	99.96 (<0.001)
	18 to 29	58	28.0	33	24.1	*n*<5	–	
	30 to 39	40	19.3	43	31.4	0	0.0	
	40 to 49	37	17.9	20	14.6	0	0.0	
	50 to 59	21	10.1	15	10.9	*n*<5	–	
	60 and over	44	21.3	21	15.3	35	89.7	
SES	Quintile 1 (most disadvantaged)	71	34.3	47	34.3	7	17.9	12.10 (0.147)
	Quintile 2	34	16.4	23	16.8	13	33.3	
	Quintile 3	36	17.4	31	22.6	8	20.5	
	Quintile 4	37	17.9	16	11.7	7	17.9	
	Quintile 5 (least disadvantaged)	25	12.1	20	14.6	*n*<5	–	
Location type	Private place	166	80.2	101	73.7	35	89.7	6.57 (0.161)
	Public place	36	18.8	32	23.4	*n*<5	–	
	Unknown	*n*<5	–	*n*<5	–	0	0.0	
Location	Indoors	116	56.0	76	55.5	27	69.2	4.78 (0.310)
	Outdoors	48	23.2	36	26.3	*n*<5	–	
	Unknown	43	20.8	25	18.2	8	20.5	
Police co-attendance	Not stated	58	28.0	35	25.5	22	56.4	14.63 (0.001)
	Yes	149	72.0	102	74.5	17	43.6	
Transport to hospital	Not transported	56	27.1	13	9.5	*n*<5	–	20.17 (<0.001)
	Transported	151	72.9	124	90.5	36	92.3	

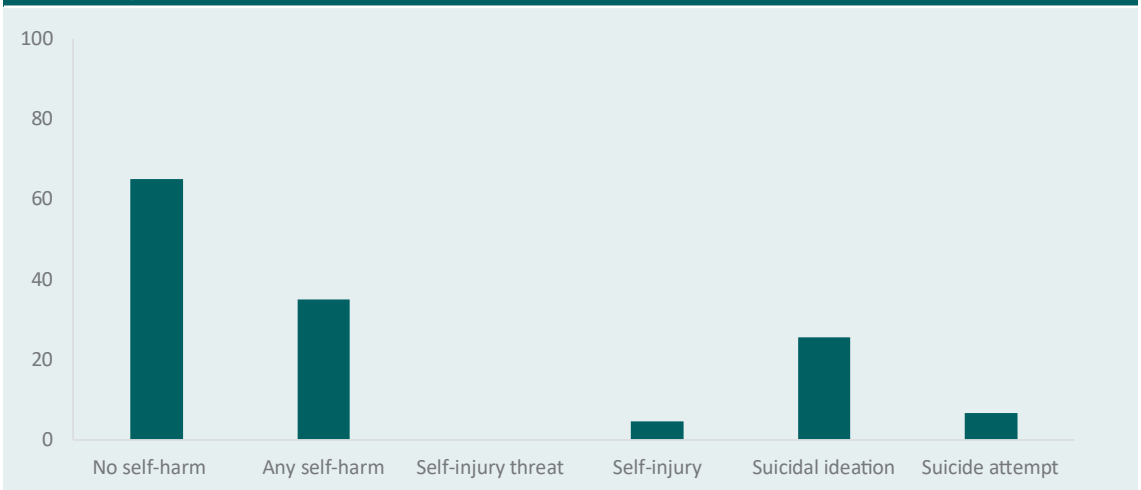
Figure 15: Ambulance attendances for the aggressor of intimate partner violence, by type of violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in attendances for aggressors of intimate partner violence is shown in Figure 16. Approximately two-thirds of these attendances had no self-harm involvement for the aggressor in the violence. However, where self-harm was present, this was most commonly suicidal ideation. The sub-group of medically induced mental health symptoms had very low involvement of self-harm (n<5); because they did not affect the overall trends, they have been analysed together.

Figure 16: Ambulance attendances for the aggressor of intimate partner violence, by self-harm, Victoria

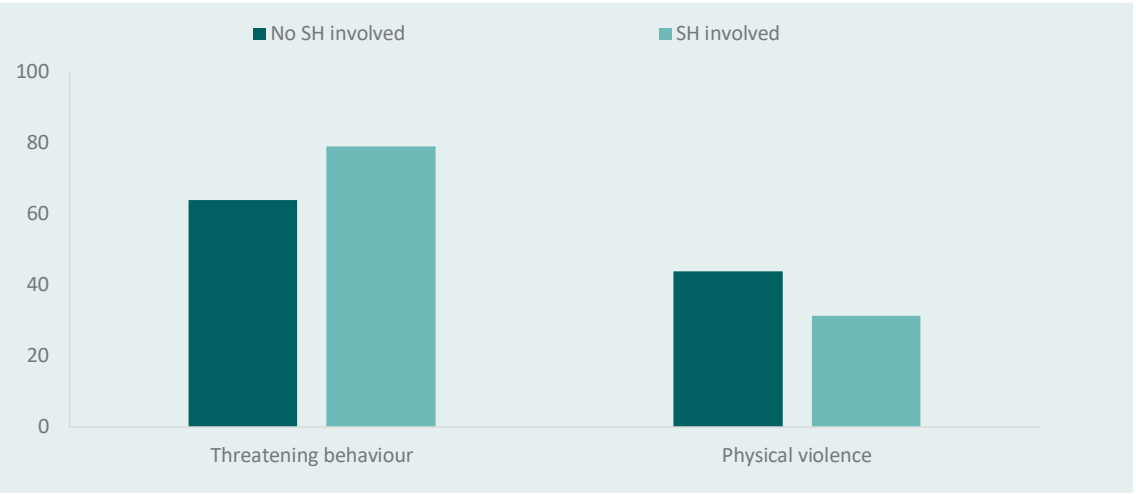


Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by the presence or absence of self-harm, are shown in Table 10, and the type of violent behaviour is shown in Figure 17. Where self-harm was also present, the percentage of threatening behaviour was higher (79% vs 64%). Younger age groups (particularly the 18 to 29 year olds) represented a higher proportion when self-harm was present, compared with when it was not (p<0.001).

Table 10: Characteristics of ambulance attendances for the aggressor of intimate partner violence, by self-harm, Victoria

		No self-harm (*n*=249)		Self-harm (*n*=134)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	140	56.2	70	52.2	1.16 (0.559)
	Female	108	43.4	64	47.8	
Age group	Under 18	10	4.0	*n*<5	–	28.88 (<0.001)
	18 to 29	48	19.3	45	33.6	
	30 to 39	52	20.9	31	23.1	
	40 to 49	31	12.4	26	19.4	
	50 to 59	23	9.2	14	10.4	
	60 and over	85	34.1	15	11.2	
SES	Quintile 1 (most disadvantaged)	79	31.7	46	34.3	2.80 (0.592)
	Quintile 2	49	19.7	21	15.7	
	Quintile 3	52	20.9	23	17.2	
	Quintile 4	35	14.1	25	18.7	
	Quintile 5 (least disadvantaged)	31	12.4	18	13.4	
Location type	Private place	202	81.1	100	74.6	2.39 (0.303)
	Public place	44	17.7	31	23.1	
	Unknown	*n*<5	–	*n*<5	–	
Location	Indoors	146	58.6	73	54.5	1.77 (0.413)
	Outdoors	52	20.9	36	26.9	
	Unknown	51	20.5	25	18.7	
Police co-attendance	Not stated	77	30.9	38	28.4	0.27 (0.601)
	Yes	172	69.1	96	71.6	
Transport to hospital	Not transported	66	26.5	6	4.5	27.69 (<0.001)
	Transported	183	73.5	128	95.5	

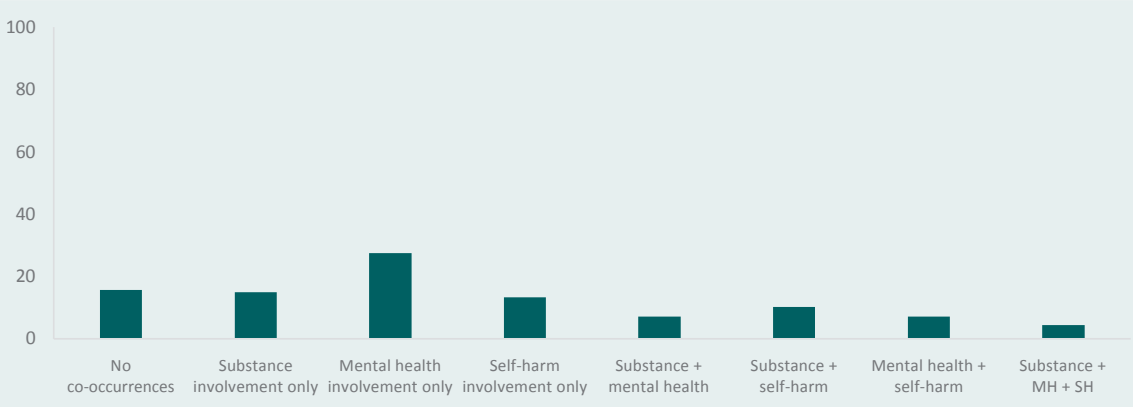
Figure 17: Ambulance attendances for the aggressor of intimate partner violence, by type of violent behaviour and self-harm, Victoria



Interactions between co-occurrences

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for aggressors of intimate partner violence are shown in Figure 18. More than 80 percent of these attendances had co-occurring issues for the aggressor in the violence. Where there were co-occurring issues, this was most commonly mental health involvement only (ie no AOD involvement or self-harm).

Figure 18: Ambulance attendances for the aggressor of intimate partner violence, by co-occurring issues, Victoria



Other family violence—victims

The following tables and figures describe ambulance attendances for victims of other family violence. There were 422 ambulance attendances for victims of other family violence in Victoria in the 2016–17 financial year. A case study of this type of attendance is provided in Box 3. Of the 422, 37 (9%) were coded as being both the victim and the aggressor in the violence.

Box 3: Case study of an ambulance attendance for a victim of other family violence

Male Patient, Age 30

Attended at Private Residence, Outdoors.

Patient with no relevant medical or mental health history.

30 year-old male met us at ambulance, intoxicated, agitated but co-operative. Family on scene state they had called due to patient drinking excessively today and was threatening and violent. Patient had allegedly threatened to hurt himself and others and states tonight his father punched him once in left jaw sustaining pain and swelling. Patient states lost job yesterday and has been angry and depressed today. States had about six drinks of alcohol and consumed marijuana. States is using alcohol and cannabis daily. Patient speaking sensibly, agitated, rapid thoughts and speech. Not suicidal. Not threatening with ambulance officers. Swelling to right hand also states punched a wall two days ago.

Overview

For ambulance attendances for victims of other family violence, Figure 19 presents the relationship of the patient to the third party involved in the violent incident. 'Other family members' were the predominant third parties in attendances for victims of other family violence, followed by the child of the person being attended. The types of violent behaviour within ambulance attendances for victims of other family violence are shown in Figure 20. The majority (88%) of ambulance attendances for victims of other family violence involved physical violence.

Figure 19: Ambulance attendances for the victims of other family violence, by the relationship of the patient to the third party involved, Victoria

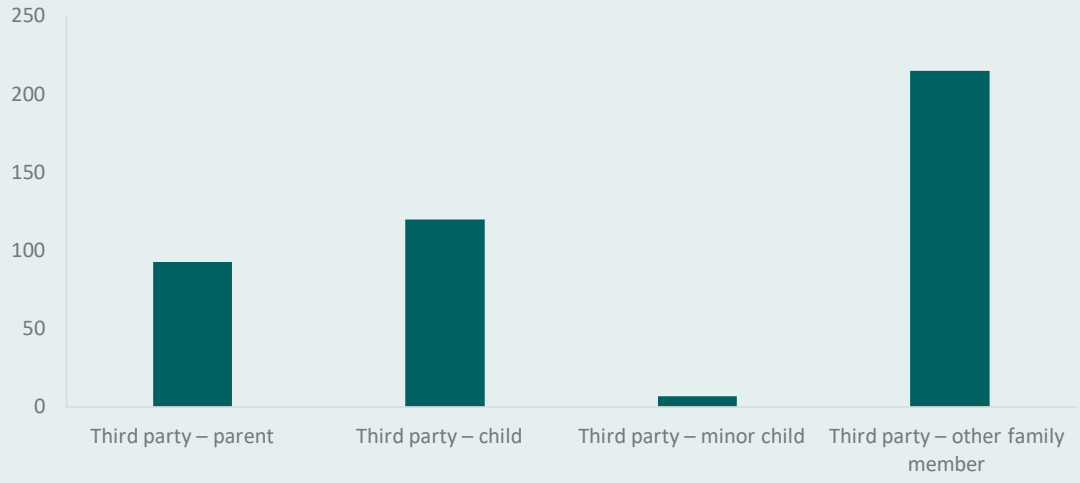
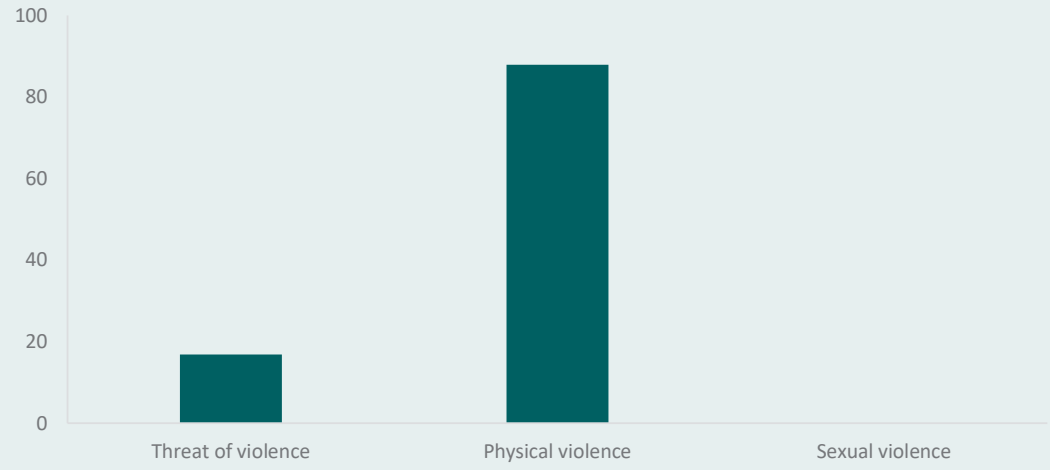


Figure 20: Ambulance attendances for the victims of other family violence, by type of violent behaviour, Victoria



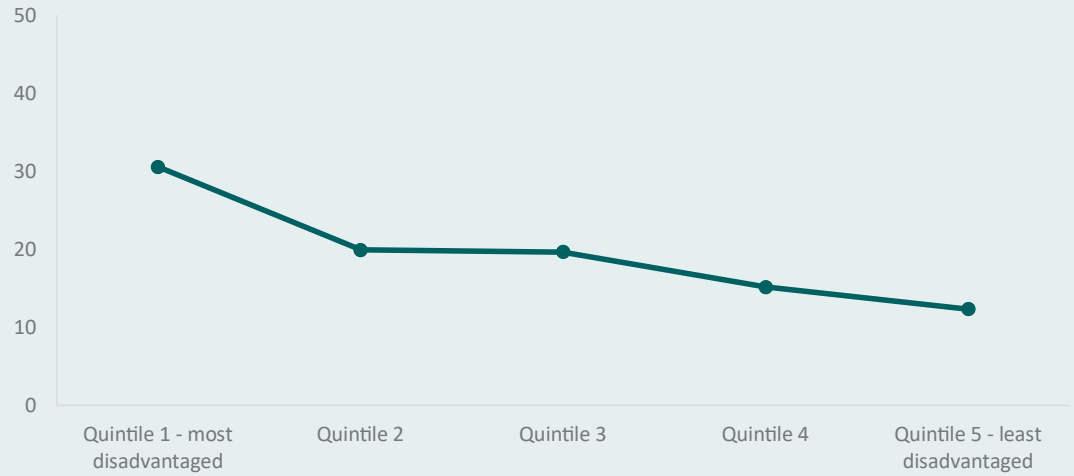
The characteristics of ambulance attendances for victims of other family violence are shown in Table 11. Males and females are approximately evenly represented in victims of other family violence, and those aged 18 to 29 are the most highly represented age group (27%).

Table 11: Characteristics of ambulance attendances for the victims of other family violence, Victoria

		n	%
Gender	Male	203	48.1
	Female	218	51.7
	Other/unknown	*n*<5	–
Age group	Under 18	65	15.4
	18 to 29	112	26.5
	30 to 39	66	15.6
	40 to 49	76	18.0
	50 to 59	49	11.6
	60 and over	54	12.8
Location type	Private place	338	80.1
	Public place	76	18.0
	Unknown	8	1.9
Location	Indoors	218	51.7
	Outdoors	104	24.6
	Unknown	100	23.7
Police co-attendance	Not stated	107	25.4
	Yes	315	74.6
Transport to hospital	Not transported	131	31.0
	Transported	291	69.0

The socio-economic status in ambulance attendances for victims of other family violence is shown in Figure 21. There is a clear SES gradient visible, with those in the lowest socio-economic quintile comprising almost one-third of ambulance attendances.

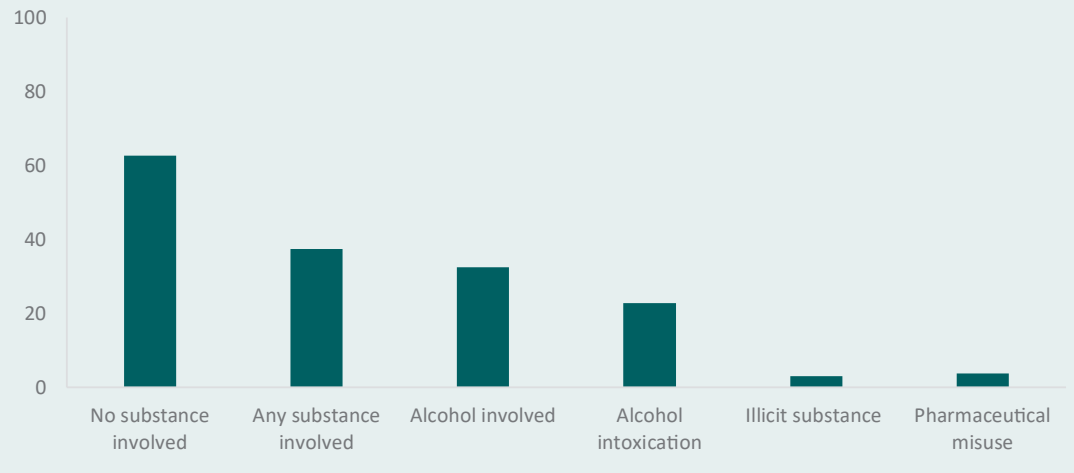
Figure 21: Ambulance attendances for the victims of other family violence, by socio-economic status, Victoria



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for victims of other family violence is shown in Figure 22. Just over one-third of these ambulance attendances co-involved a substance. However, where AOD was involved, this was predominantly for alcohol involvement (33%), and illicit substances and pharmaceutical misuse both represented less than five percent of ambulance attendances for victims of other family violence.

Figure 22: Ambulance attendances for the victims of other family violence, by AOD, Victoria



Data on specific substances involved in ambulance attendances for victims of other family violence are shown in Table 12. The most common illicit substance associated with ambulance attendances for victims of other family violence was cannabis (3%). Benzodiazepines were the most commonly misused pharmaceutical in these attendances (2%).

Table 12: Ambulance attendances for the victims of other family violence, by individual substance, Victoria

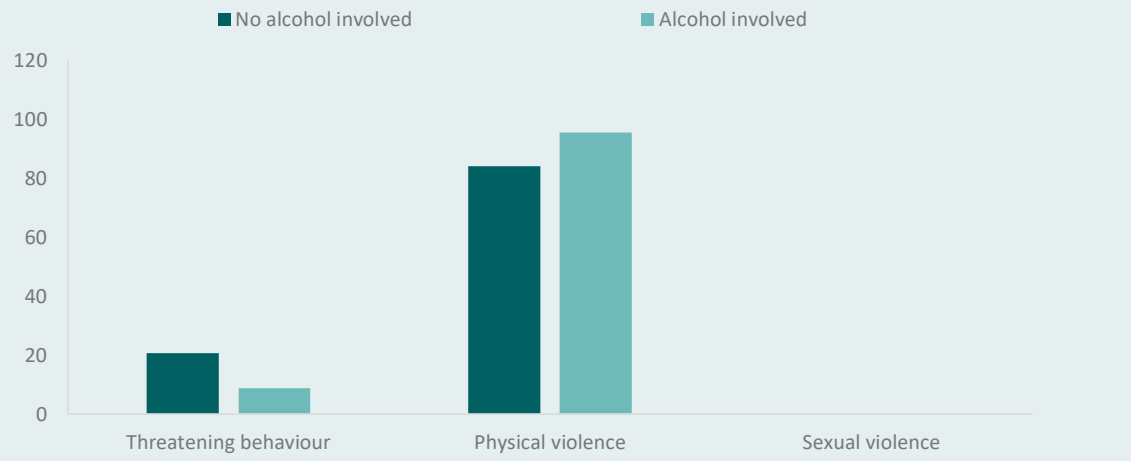
		n	%
Illicit drugs	No illicit substance	409	96.9
	Any illicit substance	13	3.1
	Amphetamine	*n*<5	–
	Cannabis	12	2.8
	Synthetic cannabinoids	0	0.0
	Cocaine	0	0.0
	Ecstasy	0	0.0
	GHB	0	0.0
	Heroin	0	0.0
	Ketamine	*n*<5	–
	LSD	0	0.0
	Inhalants	0	0.0
Pharmaceutical drugs	No pharmaceutical misuse	406	96.2
	Any pharmaceutical misuse	16	3.8
	Anti-convulsant	*n*<5	–
	Anti-depressant	*n*<5	–
	Anti-psychotic	*n*<5	–
	Benzodiazepine	8	1.9
	Opioid analgesic	*n*<5	–
	Other analgesic	*n*<5	–
	Opioid replacement therapy	0	0.0
	Pharmaceutical stimulant	*n*<5	–
	Other medication	*n*<5	–

Characteristics of ambulance attendances for victims of other family violence, differentiated by alcohol co-involvement, are shown in Table 13, and Figure 23 shows the type of violent behaviour. When alcohol was present, victims were more likely to have experienced physical violence (96%), compared with instances when no alcohol was present (84%). The percentage of male victims of other family violence was significantly higher when alcohol was involved (64% vs 40%, $p<0.001$). Police co-attendance and transport to hospital were similar, regardless of alcohol involvement.

Table 13: Characteristics of ambulance attendances for the victims of other family violence, by alcohol, Victoria

		No alcohol involved (*n*=285)		Alcohol involved (*n*=137)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	115	40.4	88	64.2	21.37 (<0.001)
	Female	169	59.3	49	35.8	
Age group	Under 18	61	21.4	*n*<5	–	33.74 (<0.001)
	18 to 29	73	25.6	39	28.5	
	30 to 39	44	15.4	22	16.1	
	40 to 49	43	15.1	33	24.1	
	50 to 59	24	8.4	25	18.2	
	60 and over	40	14.0	14	10.2	
SES	Quintile 1 (most disadvantaged)	89	31.2	40	29.2	1.53 (0.821)
	Quintile 2	53	18.6	31	22.6	
	Quintile 3	59	20.7	24	17.5	
	Quintile 4	42	14.7	22	16.1	
	Quintile 5 (least disadvantaged)	39	12.6	16	11.7	
Location type	Private place	234	82.1	104	75.9	3.05 (0.218)
	Public place	45	15.8	31	22.6	
	Unknown	6	2.1	*n*<5	–	
Location	Indoors	150	52.6	68	49.6	1.64 (0.440)
	Outdoors	65	22.8	39	28.5	
	Unknown	70	24.6	30	21.9	
Police co-attendance	Not stated	74	26.0	33	24.1	0.17 (0.678)
	Yes	211	74.0	104	75.9	
Transport to hospital	Not transported	95	33.3	36	26.3	2.15 (0.142)
	Transported	190	66.7	101	73.7	

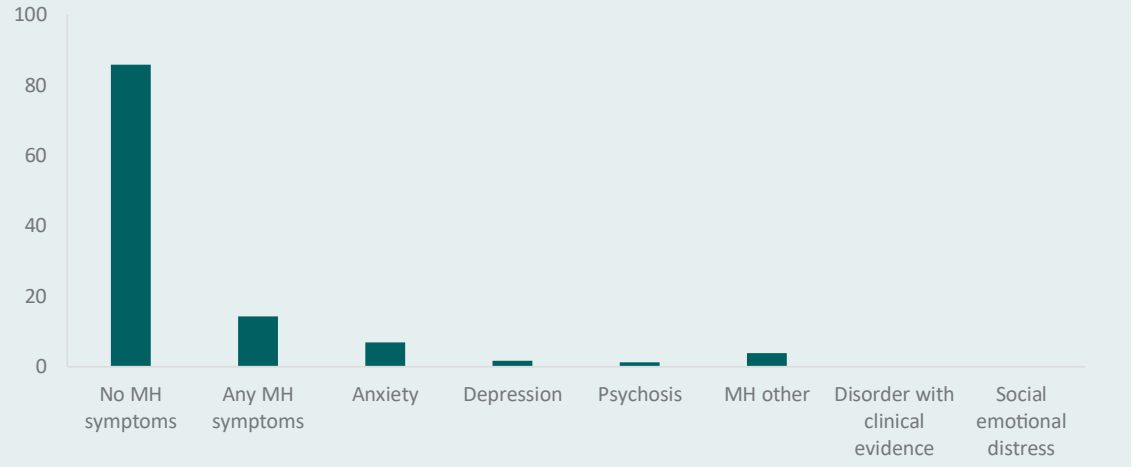
Figure 23: Ambulance attendances for the victims of other family violence, by type of violent behaviour and alcohol, Victoria



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for victims of other family violence is presented in Figure 24. Less than one-quarter of these attendances involved current mental health symptoms for the victim of the violence. However, where they were present, they were most commonly symptoms of anxiety (7%).

Figure 24: Ambulance attendances for the victims of other family violence, by current mental health symptoms, Victoria

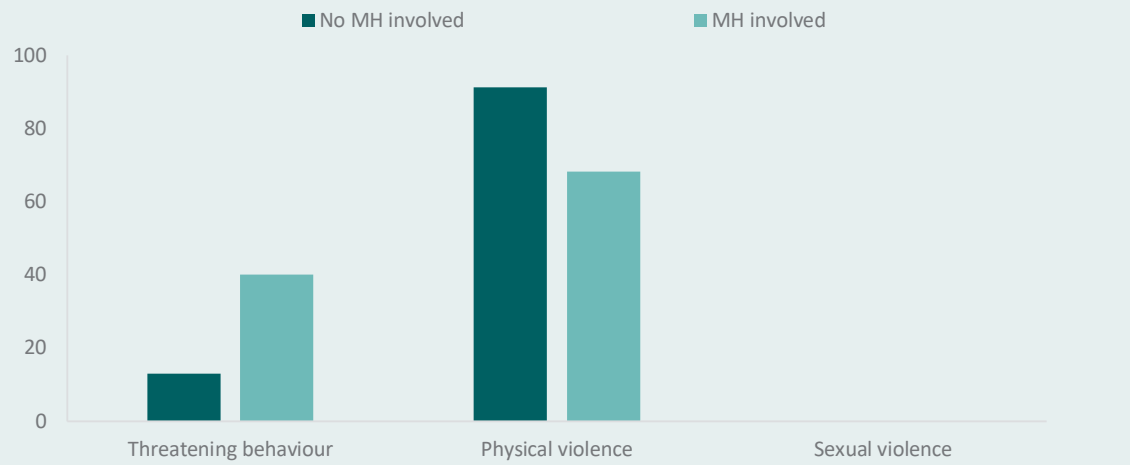


Characteristics of ambulance attendances for victims of other family violence, differentiated by current mental health symptoms, are shown in Table 14, and Figure 25 shows the type of violent behaviour. The percentage of threatening behaviour was higher when current mental health symptoms were present (40% vs 13%), and the percentage of female victims was significantly higher (73%), compared with attendances where no mental health symptoms were present (48%).

Table 14: Characteristics of ambulance attendances for the victims of other family violence, by current mental health symptoms, Victoria

		No mental health symptoms (*n*=362)		Mental health symptoms (*n*=60)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	187	51.7	16	26.7	13.21 (0.001)
	Female	174	48.1	44	73.3	
Age group	Under 18	52	14.4	13	21.7	3.88 (0.567)
	18 to 29	97	26.8	15	25.0	
	30 to 39	59	16.3	7	11.7	
	40 to 49	67	18.5	9	15.0	
	50 to 59	43	11.9	6	10.0	
	60 and over	44	12.2	10	16.7	
SES	Quintile 1 (most disadvantaged)	113	31.2	16	26.7	2.22 (0.695)
	Quintile 2	73	20.2	11	18.3	
	Quintile 3	67	18.5	16	26.7	
	Quintile 4	54	14.9	10	16.7	
	Quintile 5 (least disadvantaged)	45	12.4	7	11.7	
Location type	Private place	291	80.4	47	78.3	1.87 (0.392)
	Public place	63	17.4	13	21.7	
	Unknown	8	2.2	0	0.0	
Location	Indoors	184	50.8	34	56.7	1.19 (0.551)
	Outdoors	89	24.6	15	25.0	
	Unknown	89	24.6	11	18.3	
Police co-attendance	Not stated	86	23.8	21	35.0	3.44 (0.064)
	Yes	276	76.2	39	65.0	
Transport to hospital	Not transported	110	30.4	21	35.0	0.51 (0.474)
	Transported	252	69.6	39	65.0	

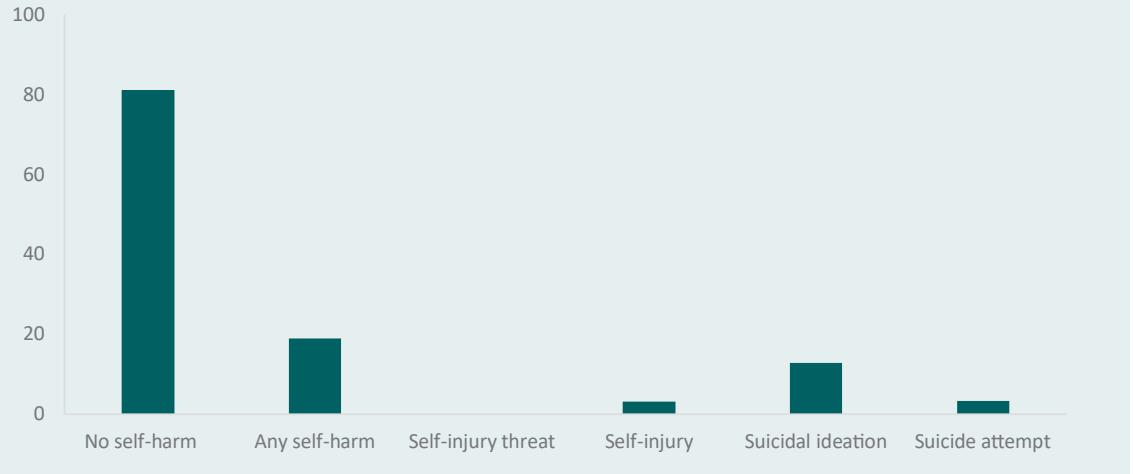
Figure 25: Ambulance attendances for the victims of other family violence, by type of violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in ambulance attendances for victims of other family violence are shown in Figure 26. Less than one-quarter of these ambulance attendances involved self-harm for the victim of the violence. However, where self-harm was present, this was most commonly suicidal ideation (13%).

Figure 26: Ambulance attendances for the victims of other family violence, by self-harm, Victoria

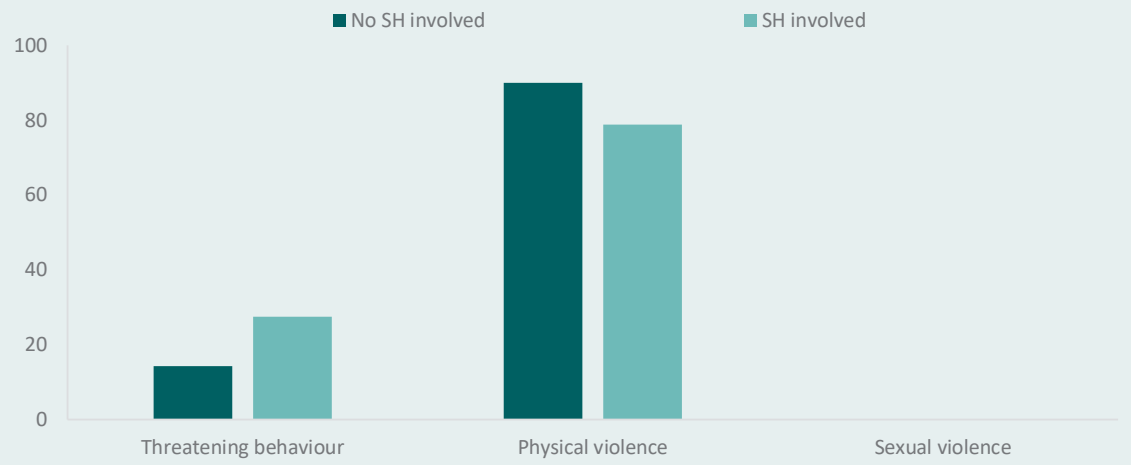


Characteristics of ambulance attendances for victims of other family violence, differentiated by self-harm involvement, are presented in Table 15, and Figure 27 shows the type of violent behaviour. Younger age groups are more commonly represented in victims of other family violence when there was self-harm present, compared with instances when there was no self-harm (p<0.001). When there is self-harm present, the percentage of violence that is threatening behaviour was higher (28% vs 14%).

Table 15: Characteristics of ambulance attendances for the victims of other family violence, by self-harm, Victoria

		No self-harm (*n*=342)		Self-harm (*n*=80)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	172	50.3	31	38.8	3.79 (0.151)
	Female	169	49.4	49	61.3	
Age group	Under 18	41	12.0	24	30.0	29.49 (<0.001)
	18 to 29	83	24.3	29	36.3	
	30 to 39	56	16.4	10	12.5	
	40 to 49	69	20.2	7	8.8	
	50 to 59	42	12.3	7	8.8	
	60 and over	51	14.9	*n*<5	-	
SES	Quintile 1 (most disadvantaged)	103	30.1	26	32.5	1.66 (0.798)
	Quintile 2	69	20.2	15	18.8	
	Quintile 3	65	19.0	18	22.5	
	Quintile 4	51	14.9	13	16.3	
	Quintile 5 (least disadvantaged)	45	13.2	7	8.8	
Location type	Private place	278	81.3	60	75.0	2.34 (0.310)
	Public place	57	16.7	19	23.8	
	Unknown	7	2.0	*n*<5	-	
Location	Indoors	172	50.3	46	57.5	2.04 (0.360)
	Outdoors	89	26.0	15	18.8	
	Unknown	81	23.7	19	23.8	
Police co-attendance	Not stated	90	26.3	17	21.3	0.88 (0.348)
	Yes	252	73.7	63	78.8	
Transport to hospital	Not transported	126	36.8	5	6.3	28.35 (<0.001)
	Transported	216	63.2	75	93.8	

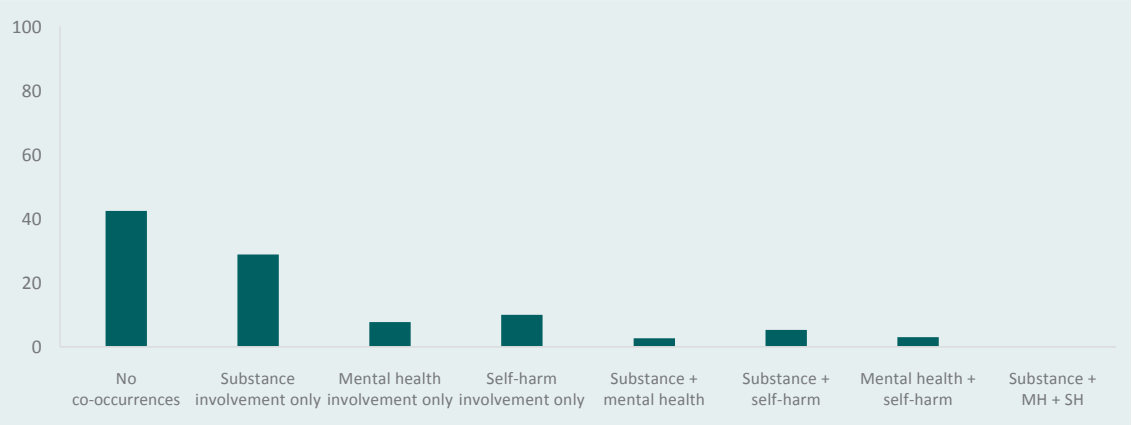
Figure 27: Ambulance attendances for the victims of other family violence, by type of violent behaviour and self-harm, Victoria



Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for victims of other family violence are shown in Figure 28. Just over 40 percent of these attendances had no co-occurring issues for the victim of the violence. Where there were co-occurring issues, this was most commonly AOD involvement only (29%; ie no mental health symptoms or self-harm).

Figure 28: Ambulance attendances for the victims of other family violence, by co-occurring issues, Victoria



Other family violence—aggressors

The following tables and figures describe ambulance attendances for aggressors in other family violence. There were 999 ambulance attendances for aggressors in other family violence in Victoria in the 2016–17 financial year. Of those 999, 37 (4%) were coded as being both the aggressor and victim in the violence. A case study of this type of attendance is provided in Box 4.

Box 4: Case study of an ambulance attendance for an aggressor in other family violence.

Male Patient, Age 53

Attended at Private Residence, Police co-attended.

History of developmental disorder, schizophrenia and violent behaviour

Recent history of non-compliance with medications and acute aggression towards family members

Called to a 53-year-old male having an acute psychiatric episode. Patient's father called police today due to patient being physically and verbally aggressive towards his father and mother. Patient's father stated patient was throwing furniture at him because patient's father went into patient's room. Patient continually threatened father that once released he would attack father. Patient non-compliant with paramedics or police, patient refused transport to hospital for assessment and was handcuffed by police. Patient became aggressive towards ambulance and police officers when handcuffed, patient defecated in his pants and attempted to flick faecal matter at people with his foot. During transfer patient continually rambled with delusional statements, at times increasing his aggression. Patient transferred to hospital handcuffed and with police officers in ambulance, nil issues during transit. Section 351 and DVO completed at hospital.

Overview

For ambulance attendances for aggressors of other family violence, Figure 29 presents the relationship of the patient to the third party involved in the violent incident. Parents were the predominant third party involved in ambulance attendances for aggressors in other family violence, followed by an 'other family member'. The types of violent behaviour within ambulance attendances for aggressors in other family violence are presented in Figure 30. The majority (71%) of ambulance attendances for aggressors in other family violence involved threat of violence.

Figure 29: Ambulance attendances for the aggressor of other family violence, by the relationship of the patient to the third party involved, Victoria

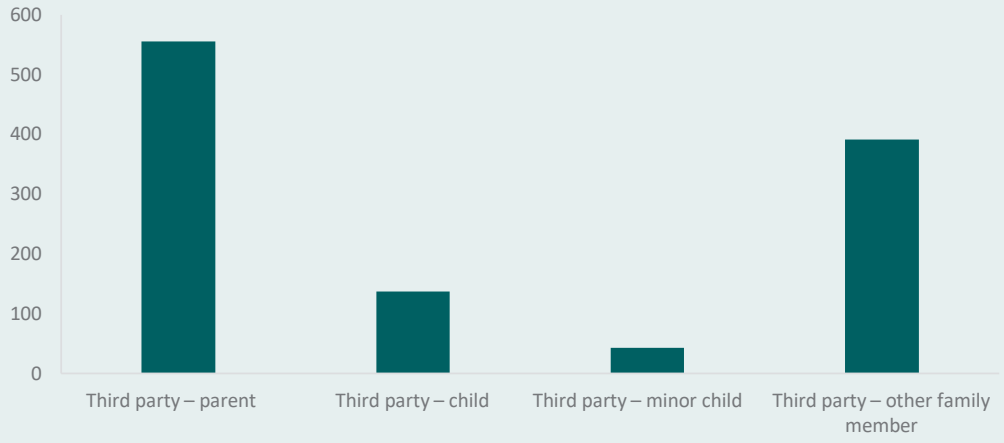


Figure 30: Ambulance attendances for the aggressor of other family violence, by type of violent behaviour, Victoria

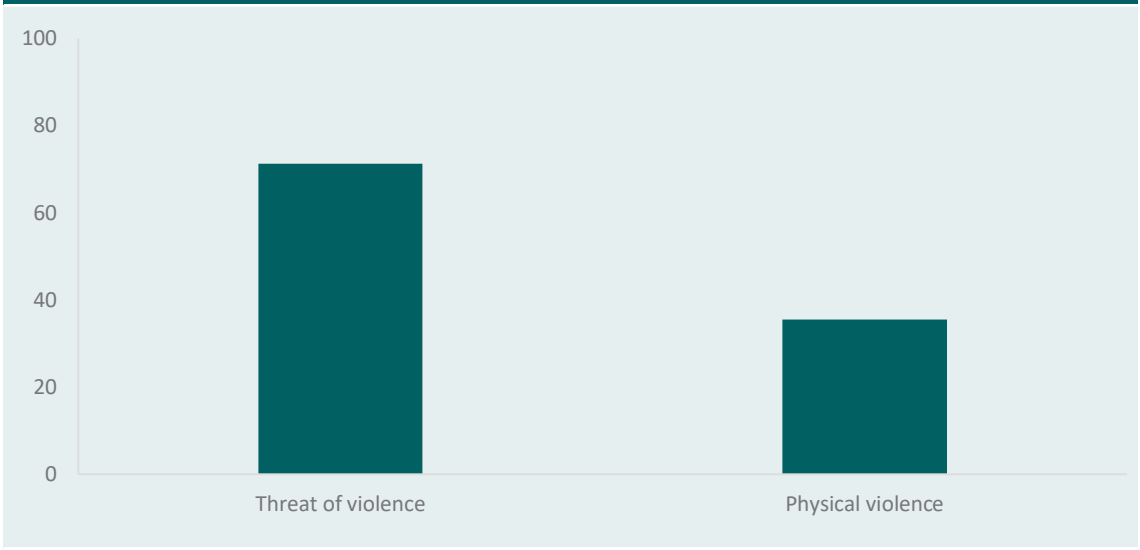


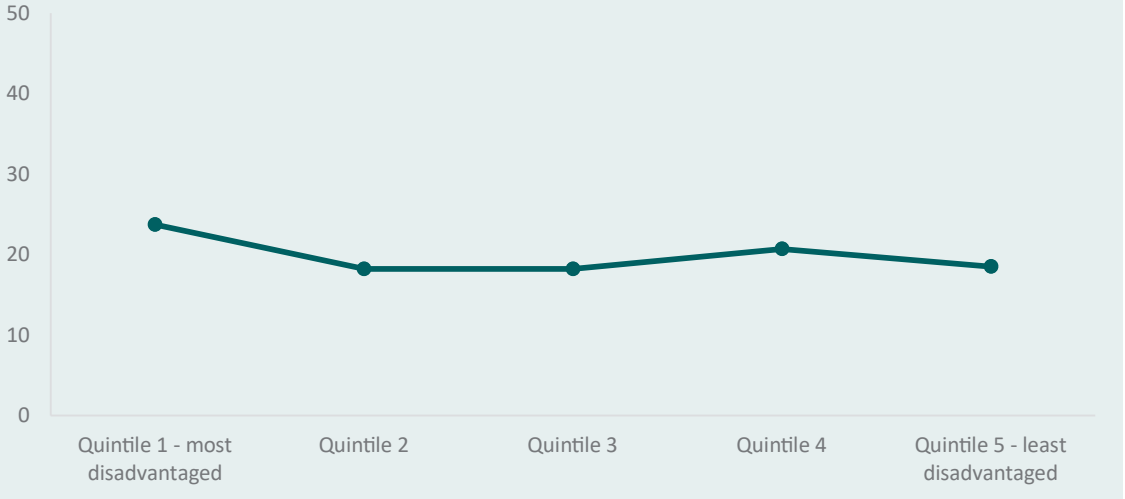
Table 16 shows the characteristics of ambulance attendances for aggressors in other family violence. Those aged under 18 make up almost one-third of attendances for aggressors in other family violence, followed by those aged 18 to 29; collectively, these two age groups make up approximately 60 percent of all these attendances. The high proportion of attendances for those aged under 18, and a relatively higher proportion for those aged over 60, was an unexpected result; upon additional analysis, it was found to be associated with medically induced mental health symptoms. This sub-group is therefore analysed separately in the sub-section titled *Ambulance attendances featuring violence and medically induced mental health symptoms.*

Table 16: Characteristics of ambulance attendances for the aggressor of other family violence, Victoria

		n	%
Gender	Male	567	56.8
	Female	430	43.0
	Other/unknown	*n*<5	–
Age group	Under 18	313	31.3
	18 to 29	286	28.6
	30 to 39	173	17.3
	40 to 49	96	9.6
	50 to 59	54	5.4
	60 and over	77	7.7
Location type	Private place	844	84.5
	Public place	146	14.6
	Unknown	9	0.9
Location	Indoors	633	63.4
	Outdoors	191	19.1
	Unknown	175	17.5
Police co-attendance	Not stated	232	23.2
	Yes	767	76.8
Transport to hospital	Not transported	136	13.6
	Transported	863	86.4

The socio-economic status in ambulance attendances for aggressors in other family violence is shown in Figure 31. There is minimal influence of SES, with no trend apparent across the quintiles.

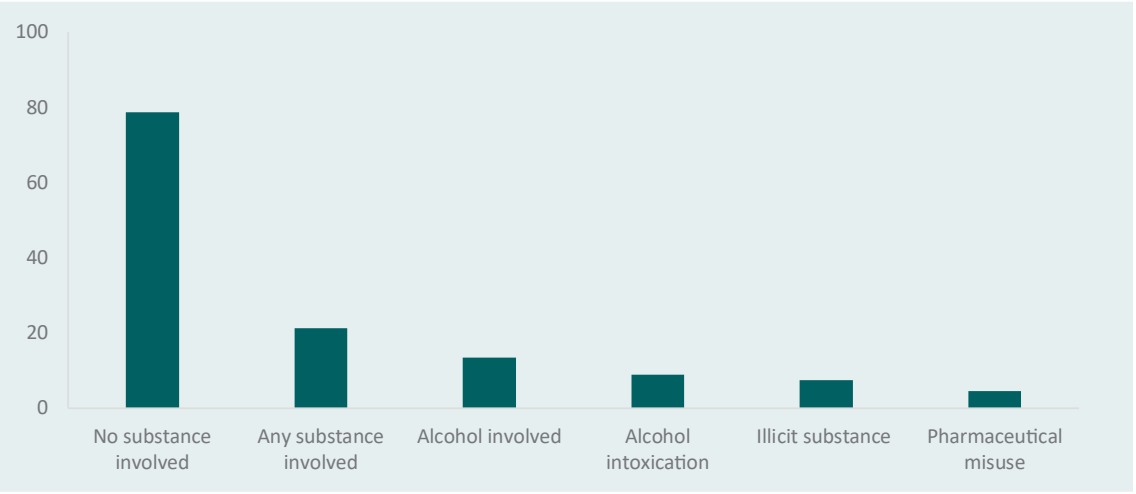
Figure 31: Ambulance attendances for the aggressor of other family violence, by socio-economic status (SES), Victoria



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for aggressors of other family violence is shown in Figure 32. Just over 20 percent of these ambulance attendances also involved AOD. Where AOD was involved, this was predominantly for alcohol involvement (14%), with illicit substances and pharmaceutical misuse both representing fewer than 10 percent of these ambulance attendances. The sub-group of medically induced mental health symptoms had a very low involvement of AOD (*n*<5); because they are not affecting the overall trends, they have been analysed together.

Figure 32: Ambulance attendances for the aggressor of other family violence, by AOD, Victoria



Where ambulance attendances for aggressors in other family violence did involve either illicit or pharmaceutical drugs, the specific substances involved are shown in Table 17. The most common illicit substances associated with ambulance attendances for aggressors in other family violence were cannabis (4%) and amphetamines (3%). Benzodiazepines (2%) and anti-psychotics (1%) were the most commonly misused pharmaceuticals in these attendances.

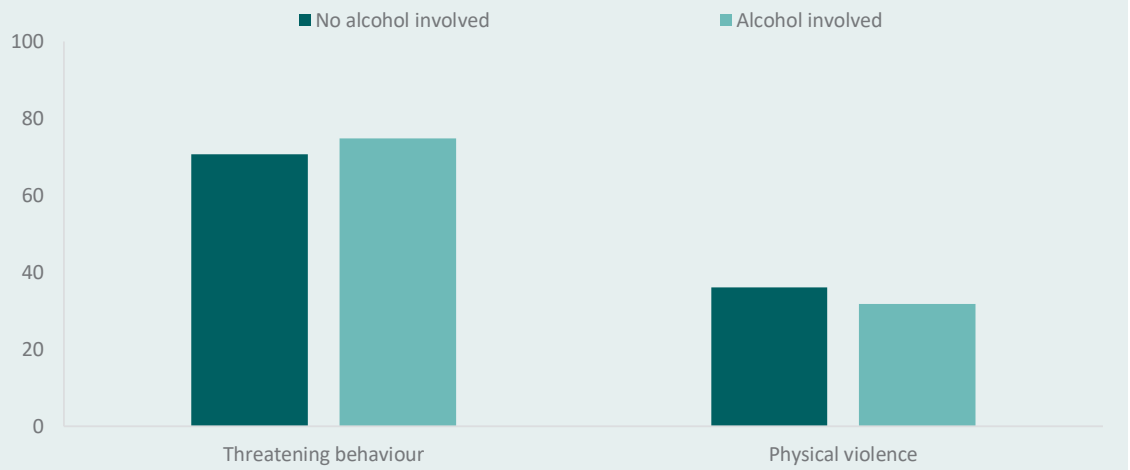
Table 17: Ambulance attendances for the aggressor of other family violence, by individual substance, Victoria			
		n	%
Illicit drugs	No illicit substance	925	92.6
	Any illicit substance	74	7.4
	Amphetamine	25	2.5
	Cannabis	38	3.8
	Synthetic cannabinoids	5	0.5
	Cocaine	*n*<5	–
	Ecstasy	5	0.5
	GHB	*n*<5	–
	Heroin	*n*<5	–
	Ketamine	*n*<5	–
	LSD	*n*<5	–
	Inhalants	0	0.0
Pharmaceutical drugs	No pharmaceutical misuse	954	95.5
	Any pharmaceutical misuse	45	4.5
	Anti-convulsant	0	0.0
	Anti-depressant	6	0.6
	Anti-psychotic	10	1.0
	Benzodiazepine	21	2.1
	Opioid analgesic	*n*<5	–
	Other analgesic	8	0.8
	Opioid replacement therapy	0	0.0
	Pharmaceutical stimulant	*n*<5	–
	Other medication	12	1.2

Characteristics of ambulance attendances for aggressors in other family violence, differentiated by alcohol involvement, are shown in Table 18, and Figure 33 shows the type of violent behaviour. When alcohol was involved, the percentage of attendances for threatening behaviour was slightly higher (75%), compared with attendances where no alcohol was involved (71%).

Table 18: Characteristics of ambulance attendances for the aggressor of other family violence, by alcohol, Victoria

		No alcohol involved (*n*=864)		Alcohol involved (*n*=135)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	481	55.7	86	63.7	3.29 (0.193)
	Female	381	44.1	49	36.3	
Age group	Under 18	303	35.1	10	7.4	65.89 (<0.001)
	18 to 29	248	28.7	38	28.1	
	30 to 39	138	16.0	35	25.9	
	40 to 49	73	8.4	23	17.0	
	50 to 59	35	4.1	19	14.1	
	60 and over	67	7.8	10	7.4	
SES	Quintile 1 (most disadvantaged)	206	23.8	31	23.0	0.74 (0.947)
	Quintile 2	159	18.4	23	17.0	
	Quintile 3	157	18.2	25	18.5	
	Quintile 4	181	20.9	26	19.3	
	Quintile 5 (least disadvantaged)	157	18.2	28	20.7	
Location type	Private place	729	84.4	115	85.2	1.42 (0.492)
	Public place	126	4.6	20	14.8	
	Unknown	9	1.0	0	0.0	
Location	Indoors	552	63.9	81	60.0	0.89 (0.640)
	Outdoors	164	19.0	27	20.0	
	Unknown	148	17.1	27	20.0	
Police co-attendance	Not stated	198	22.9	34	25.2	0.34 (0.562)
	Yes	666	77.1	101	74.8	
Transport to hospital	Not transported	109	12.6	27	20.0	5.41 (0.020)
	Transported	755	87.4	108	80.0	

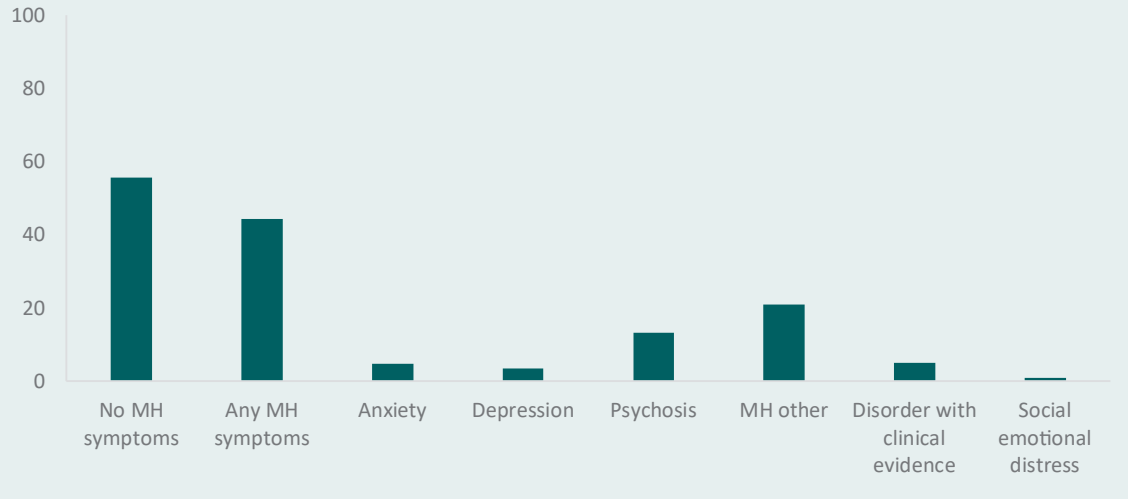
Figure 33: Ambulance attendances for the aggressor of other family violence, by type of violent behaviour and alcohol, Victoria



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for aggressors in other family violence is presented in Figure 34. Slightly fewer than half of these attendances involved current mental health symptoms for the aggressor in the violence. However, where mental health symptoms were present, this was most commonly unspecified mental health symptoms (21%) or symptoms of psychosis (13%).

Figure 34: Ambulance attendances for the aggressor of other family violence, by current mental health symptoms, Victoria

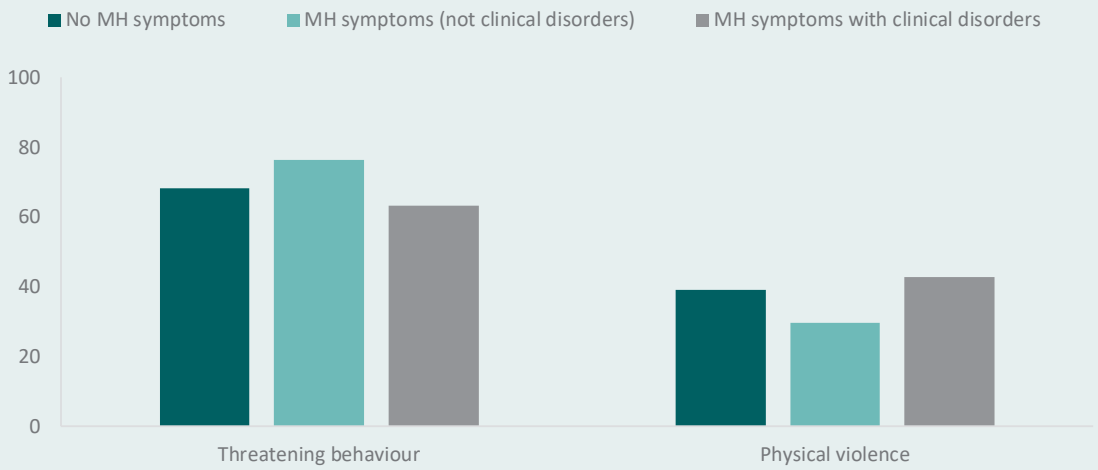


Characteristics of ambulance attendances for aggressors in other family violence, differentiated by current mental health symptoms, are shown in Table 19, and Figure 35 shows the type of violent behaviour. When no mental health symptoms were present, the percentage of people in younger age groups was higher, compared with instances when non-medically induced mental health symptoms were present. However, the medically induced mental health symptom group showed two distinct age clusters: those aged under 18 and those over 60; and age was a significant differentiator between the groups ($p<0.001$). When non-medically induced mental health symptoms were present, the percentage of attendances involving physical violence was lower (30%), compared with instances when no mental health symptoms were present (39%); however, physical violence was higher when medically induced mental health symptoms were present (43%). Transport to hospital was significantly higher when non-medically induced mental health symptoms were present (92% vs 83%), but lower when medically induced mental health symptoms were present (78%, $p<0.001$).

Table 19: Characteristics of ambulance attendances for the aggressor of other family violence, by current mental health symptoms (MHS), Victoria

		No MHS (*n*=556)		MHS—not medically induced (*n*=394)		Medically induced MHS (*n*=49)		
		n	%	*n*	%	*n*	%	χ^2 (*p* value)
Gender	Male	307	55.2	231	58.6	29	59.2	1.40 (0.843)
	Female	248	44.6	162	41.1	20	40.8	
Age group	Under 18	198	35.6	94	23.9	21	42.9	125.52 (<0.001)
	18 to 29	170	30.6	113	28.7	*n*<5	–	
	30 to 39	86	15.5	86	21.8	*n*<5	–	
	40 to 49	46	8.3	48	12.2	*n*<5	–	
	50 to 59	26	4.7	27	6.9	*n*<5	–	
	60 and over	30	5.4	26	6.6	21	42.9	
SES	Quintile 1 (most disadvantaged)	123	22.1	104	26.4	10	20.4	8.99 (0.343)
	Quintile 2	101	18.2	71	18.0	10	20.4	
	Quintile 3	101	18.2	71	18.0	10	20.4	
	Quintile 4	123	22.1	70	17.8	14	28.6	
	Quintile 5 (least disadvantaged)	105	18.9	76	19.3	*n*<5	–	
Location type	Private place	476	85.6	328	83.2	40	81.6	11.62 (0.020)
	Public place	80	14.4	58	14.7	8	16.3	
	Unknown	0	0.0	8	2.0	*n*<5	–	
Location	Indoors	359	64.6	244	61.9	30	61.2	8.00 (0.092)
	Outdoors	100	18.0	86	21.8	5	10.2	
	Unknown	97	17.4	64	16.2	14	28.6	
Police co-attendance	Not stated	117	21.0	96	24.4	19	38.8	8.42 (0.015)
	Yes	439	79.0	298	75.6	30	61.2	
Transport to hospital	Not transported	94	16.9	31	7.9	11	22.4	19.44 (<0.001)
	Transported	462	83.1	363	92.1	38	77.6	

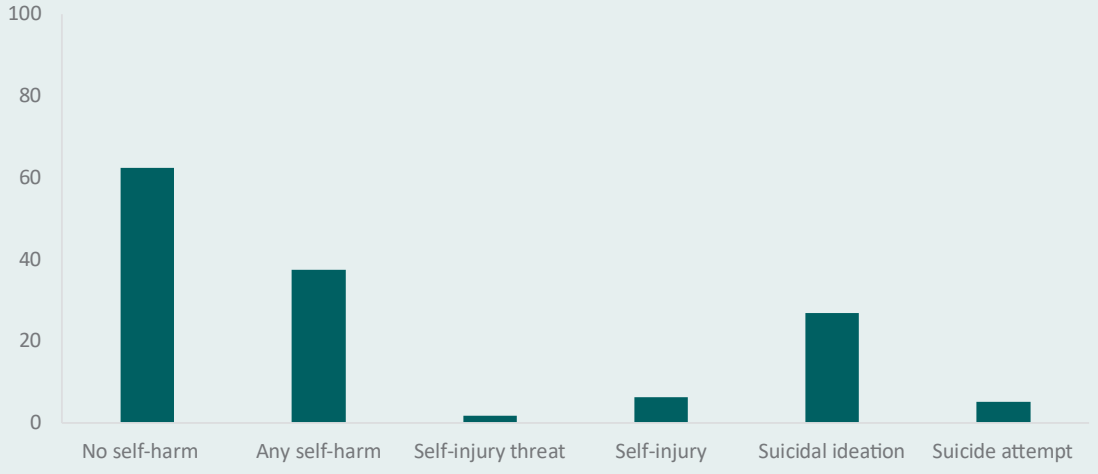
Figure 35: Ambulance attendances for the aggressor of other family violence, by type of violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in ambulance attendances for aggressors in other family violence is shown in Figure 36. Approximately one-third of these attendances for the aggressor involved self-harm, and, where self-harm was present, this was most commonly suicidal ideation (27%). The sub-group of medically induced mental health symptoms had a very low involvement of self-harm (*n*<5); because they were not affecting the overall trends, they have been analysed together.

Figure 36: Ambulance attendances for the aggressor of other family violence, by self-harm, Victoria

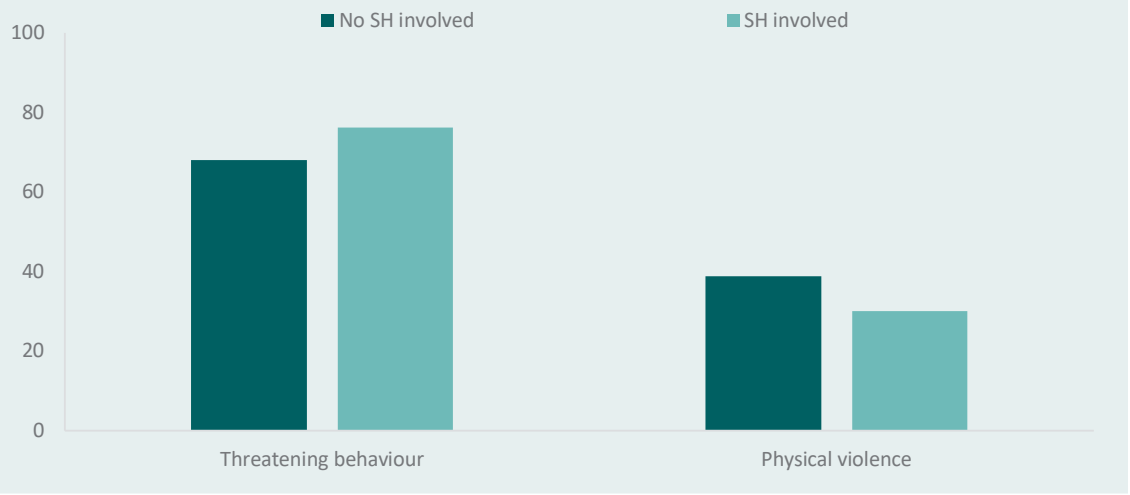


Characteristics of ambulance attendances for aggressors in other family violence, differentiated by self-harm, are presented in Table 20, and Figure 37 shows the type of violent behaviour. The percentage of females in ambulance attendances for aggressors in other family violence was significantly higher when self-harm was present (50% vs 39%, $p<0.001$), as was the percentage of threatening behaviour (76% vs 68%), compared with attendances with no self-harm present. Almost all of those who were the aggressor in other family violence with co-occurring self-harm were transported to hospital (97% vs 80%, $p<0.001$).

Table 20: Characteristics of ambulance attendances for the aggressor of other family violence, by self-harm, Victoria

		No self-harm (*n*=624)		Self-harm (*n*=375)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	382	61.2	185	49.3	13.51 (0.001)
	Female	241	38.6	189	50.4	
Age group	Under 18	183	29.3	30	8.0	29.69 (<0.001)
	18 to 29	169	27.1	117	31.2	
	30 to 39	118	18.9	55	14.7	
	40 to 49	56	9.0	40	10.7	
	50 to 59	30	4.8	24	6.4	
	60 and over	68	10.9	9	2.4	
SES	Quintile 1 (most disadvantaged)	144	23.1	93	24.8	2.40 (0.663)
	Quintile 2	121	19.4	61	16.3	
	Quintile 3	113	18.1	69	18.4	
	Quintile 4	123	19.7	84	22.4	
	Quintile 5 (least disadvantaged)	117	18.8	68	18.1	
Location type	Private place	538	86.2	306	81.6	4.31 (0.116)
	Public place	82	13.1	64	17.1	
	Unknown	*n*<5	–	5	1.3	
Location	Indoors	402	64.4	231	61.6	1.02 (0.601)
	Outdoors	118	18.9	73	19.5	
	Unknown	104	16.7	71	18.9	
Police co-attendance	Not stated	157	25.2	75	20.0	3.50 (0.061)
	Yes	467	74.8	300	80.0	
Transport to hospital	Not transported	124	19.9	12	3.2	55.36 (<0.001)
	Transported	500	80.1	363	96.8	

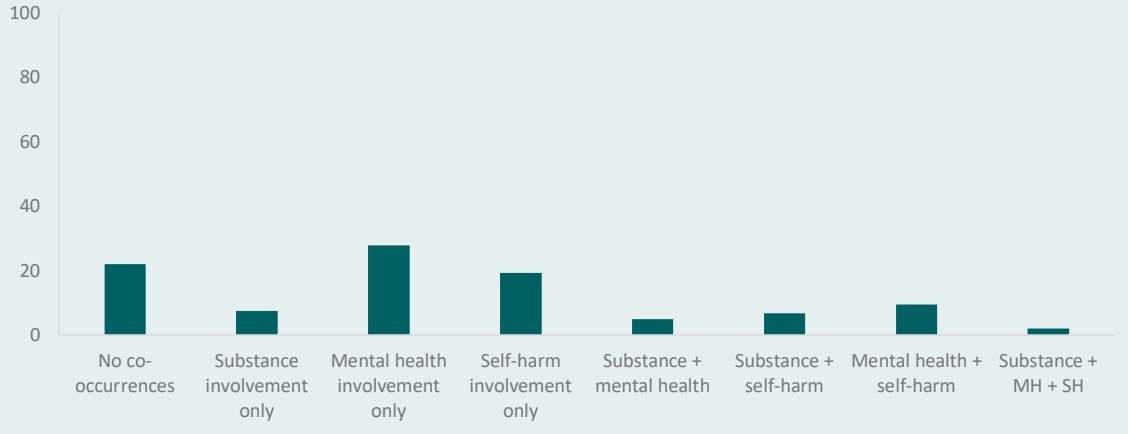
Figure 37: Characteristics of ambulance attendances for the aggressor of other family violence, by type of violent behaviour and self-harm, Victoria



Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for aggressors of other family violence are shown in Figure 38. Just over 20 percent of these attendances had no co-occurring issues for the aggressor in the violence. Where there were co-occurring issues, this was most commonly mental health involvement only (28%; ie no AOD involvement or self-harm).

Figure 38: Ambulance attendances for the aggressor of other family violence, by co-occurring issues, Victoria



Community violence—victims

The following tables and figures describe ambulance attendances for victims of community violence. These attendances relate to harms experienced by a person who was the victim of violence by a person who was not a family member or intimate partner. This could be a third party who is known to them or a stranger. There were 917 ambulance attendances for victims of community violence in Victoria in the 2016–17 financial year. Of those 917, 50 (6%) were coded as being both the victim and aggressor in the violence. A case study of this type of attendance is provided in Box 5.

Box 5: Case study of an ambulance attendance for a victim of community violence

Male Patient, Age 28

Attended at Public Place, Outdoors, Police Co-Attended

Patient with no relevant medical or mental health history.

28 year-old male, lives at home. Independent with daily living activities. Patient reports tonight at approximately 2245, he was assaulted by two men at the train station. Patient states he was hit/punched to his left chest, left shoulder and left back region, which is where he is experiencing pain. Patient denies head strike, loss of consciousness or fall. Patient alerted police at the station, who then called Ambulance Victoria. Patient concerned left shoulder may be dislocated due to previous dislocations, some swelling noted below left shoulder. Patient reports 10 standard drinks this evening. Police on scene.

Overview

For ambulance attendances for victims of community violence, Figure 39 presents the relationship of the patient to the third party involved in the violent incident. 'Other known third parties' were the predominant third party in ambulance attendances for victims of community violence. The types of violent behaviour within ambulance attendances for victims of community violence are shown in Figure 40. The majority of ambulance attendances for victims of community violence are for physical violence.

Figure 39: Ambulance attendances for the victims of community violence, by the relationship of the patient to the third party involved, Victoria

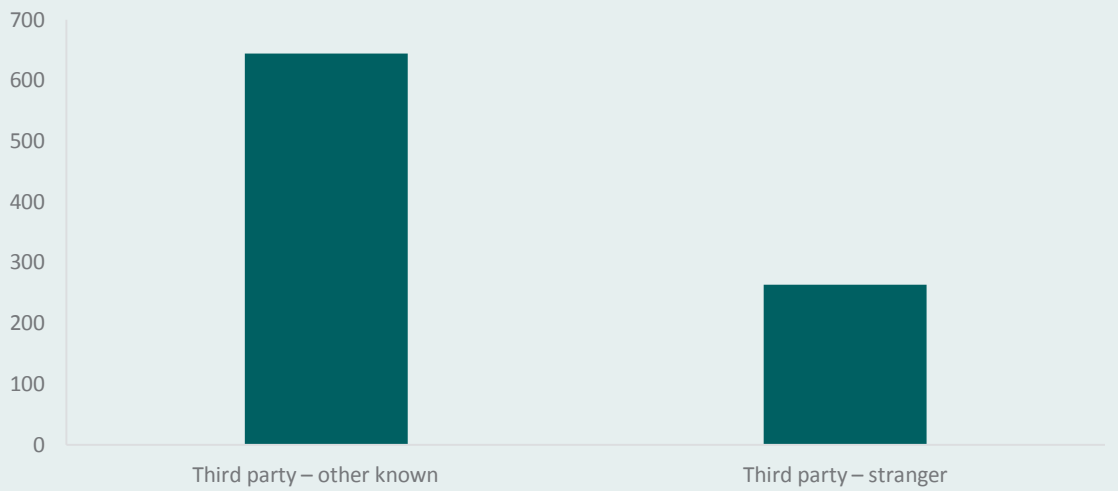


Figure 40: Ambulance attendances for the victims of community violence, by types of violent behaviour, Victoria

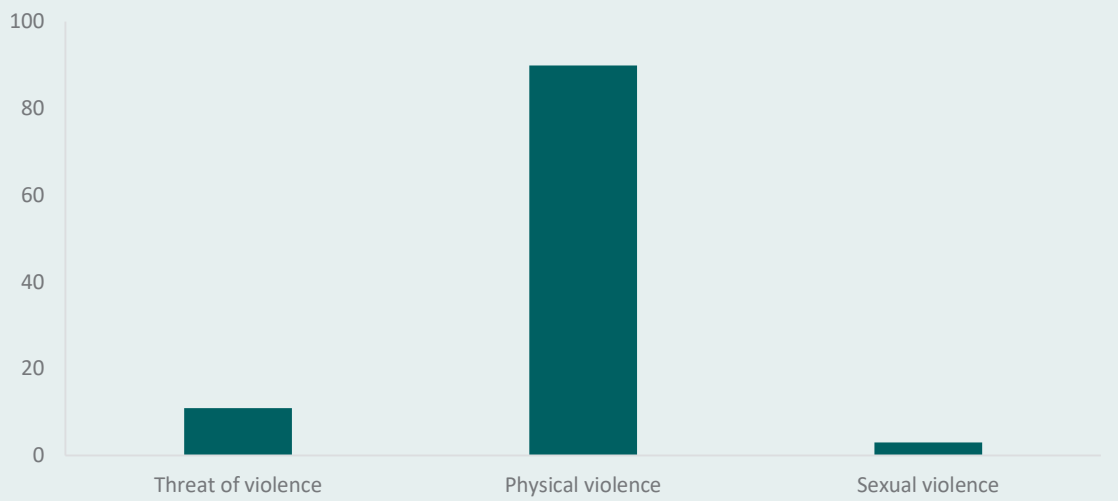
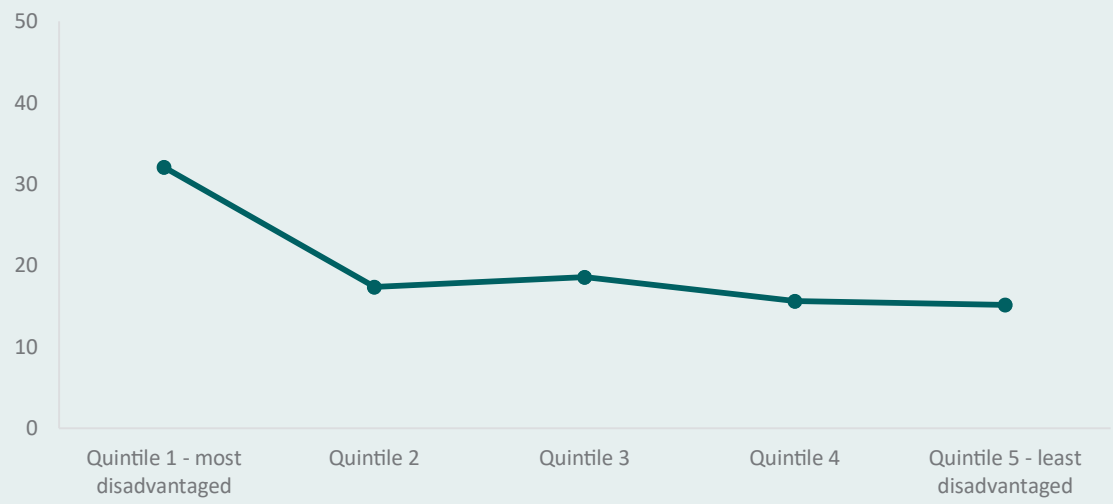


Table 21 shows the characteristics of ambulance attendances for victims of community violence. Most victims of community violence were male (66%), with the 18 to 29 age group most highly represented (33%). Attendances occurred approximately equally between public and private locations.

Table 21: Characteristics of ambulance attendances for the victims of community violence, Victoria			
		n	%
Gender	Male	608	66.3
	Female	308	33.6
	Other/unknown	*n*<5	–
Age group	Under 18	55	6.0
	18 to 29	305	33.3
	30 to 39	196	21.4
	40 to 49	205	22.4
	50 to 59	100	10.9
	60 and over	56	6.1
Location type	Private place	457	49.8
	Public place	438	47.8
	Unknown	22	2.4
Location	Indoors	312	34.0
	Outdoors	420	45.8
	Unknown	185	20.2
Police co-attendance	Not stated	248	27.0
	Yes	669	73.0
Transport to hospital	Not transported	282	30.8
	Transported	635	69.2

The socio-economic status in ambulance attendances for victims of community violence is presented in Figure 41. Those in the lowest socio-economic quintile comprised almost one-third of these ambulance attendances, and the remaining upper four quintiles were approximately equally represented.

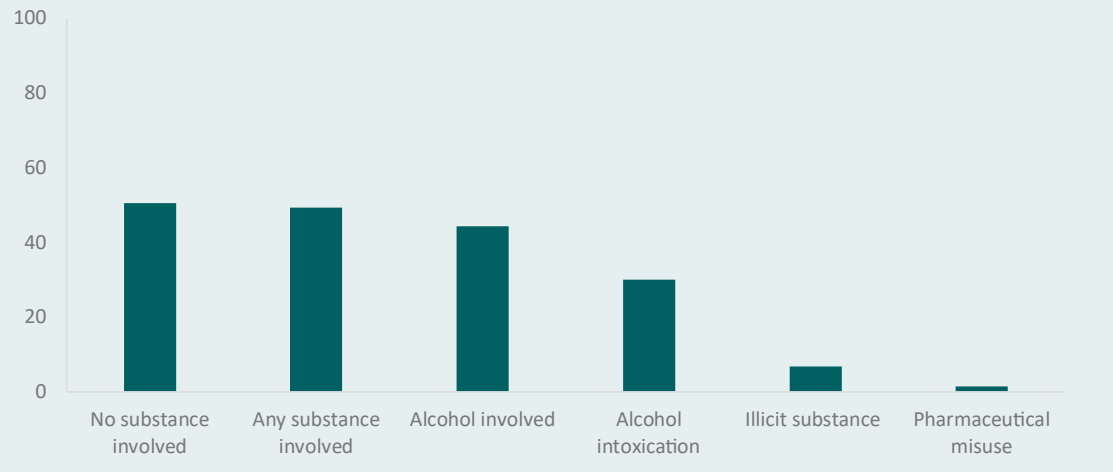
Figure 41: Ambulance attendances for the victims of community violence, by socio-economic status (SES), Victoria



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for a victim of community violence is shown in Figure 42. Almost half of these ambulance attendances involved AOD. Where AOD was involved, this was predominantly alcohol (44%), with illicit substances and pharmaceutical misuse both involved in less than 10 percent of these ambulance attendances.

Figure 42: Ambulance attendances for the victims of community violence, by AOD, Victoria



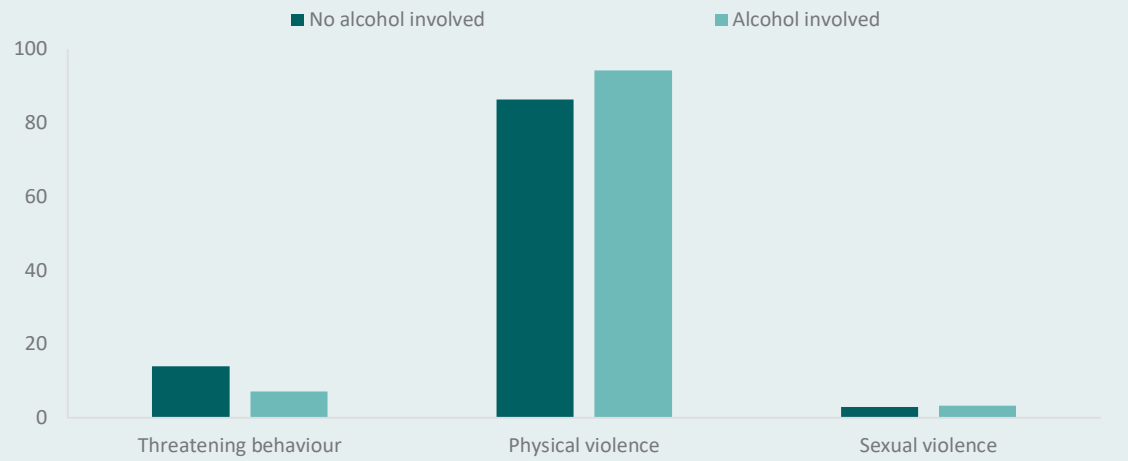
Where ambulance attendances did involve either illicit or pharmaceutical drugs, the specific substances involved are presented in Table 22. The most common illicit substances associated with ambulance attendances for victims of community violence were amphetamines (3%) and cannabis (3%). Benzodiazepines were the most commonly misused pharmaceutical in these attendances (1%).

Table 22: Ambulance attendances for the victims of community violence, by individual substance, Victoria			
		n	%
Illicit drugs	No illicit substance	855	93.2
	Any illicit substance	62	6.8
	Amphetamine	27	2.9
	Cannabis	25	2.7
	Synthetic cannabinoids	*n*<5	–
	Cocaine	*n*<5	–
	Ecstasy	*n*<5	–
	GHB	*n*<5	–
	Heroin	6	0.7
	Ketamine	*n*<5	–
	LSD	*n*<5	–
	Inhalants	0	0.0
Pharmaceutical drugs	No pharmaceutical misuse	904	98.6
	Any pharmaceutical misuse	13	1.4
	Anti-convulsant	0	0.0
	Anti-depressant	*n*<5	–
	Anti-psychotic	*n*<5	–
	Benzodiazepine	9	1.0
	Opioid analgesic	0	0.0
	Other analgesic	*n*<5	–
	Opioid replacement therapy	*n*<5	–
	Pharmaceutical stimulant	0	0.0
	Other medication	*n*<5	–

Characteristics of ambulance attendances for victims of community violence, differentiated by alcohol involvement, are presented in Table 23, and Figure 43 shows the type of violent behaviour. When alcohol was involved, attendances were more likely to be for males (72% vs 61%, $p<0.001$) and more likely to occur outdoors (54% vs 39%, $p<0.001$). Physical violence was more common in attendances that involved alcohol (94%) than those that did not involve alcohol (86%).

Table 23: Ambulance attendances for victims of community violence, by alcohol, Victoria						
		No alcohol involved (*n*=511)		Alcohol involved (*n*=406)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	314	61.4	294	72.4	13.83 (0.001)
	Female	197	38.6	111	27.3	
Age group	Under 18	36	7.0	19	4.7	3.04 (0.693)
	18 to 29	172	33.7	133	32.8	
	30 to 39	109	21.3	87	21.4	
	40 to 49	108	21.1	97	23.9	
	50 to 59	56	11.0	44	10.8	
	60 and over	30	5.9	26	6.4	
SES	Quintile 1 (most disadvantaged)	174	34.1	120	29.6	4.06 (0.398)
	Quintile 2	82	16.0	77	19.0	
	Quintile 3	84	18.4	76	18.7	
	Quintile 4	74	14.5	69	17.0	
	Quintile 5 (least disadvantaged)	82	16.0	57	14.0	
Location type	Private place	254	49.7	203	50.0	1.43 (0.490)
	Public place	242	47.4	196	48.3	
	Unknown	15	2.9	7	1.7	
Location	Indoors	204	39.9	108	26.6	22.52 (<0.001)
	Outdoors	201	39.3	219	53.9	
	Unknown	106	20.7	79	19.5	
Police co-attendance	Not stated	149	29.2	99	24.4	2.61 (0.106)
	Yes	365	70.8	307	75.6	
Transport to hospital	Not transported	180	35.2	102	25.1	10.84 (<0.001)
	Transported	331	64.8	304	74.9	

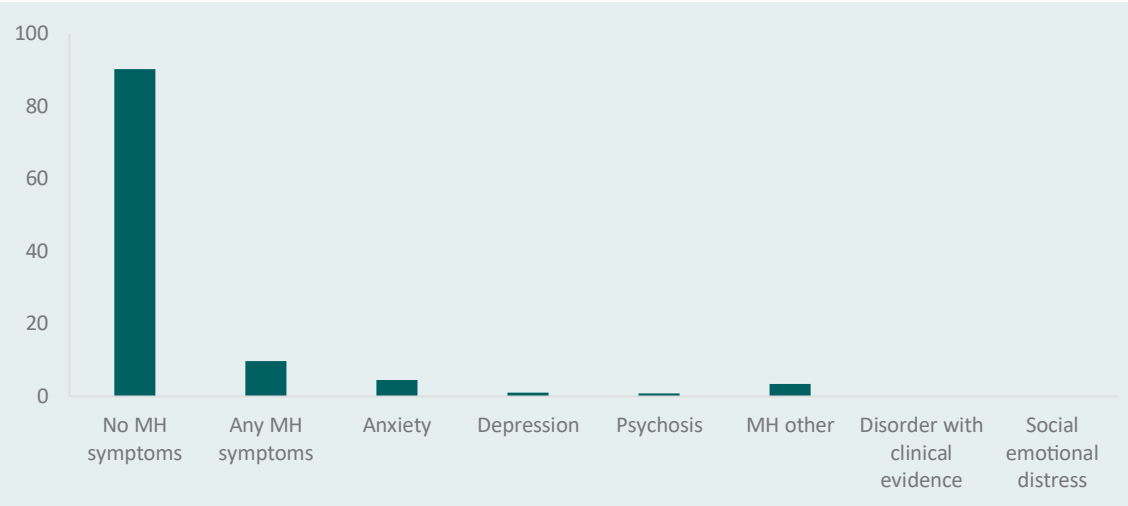
Figure 43: Ambulance attendances for victims of community violence, by type of violent behaviour and alcohol, Victoria



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for victims of community violence is presented in Figure 44. Less than 10 percent of these attendances involved current mental health symptoms for the victim of the violence. Where mental health symptoms were present, this was most commonly symptoms of anxiety (5%).

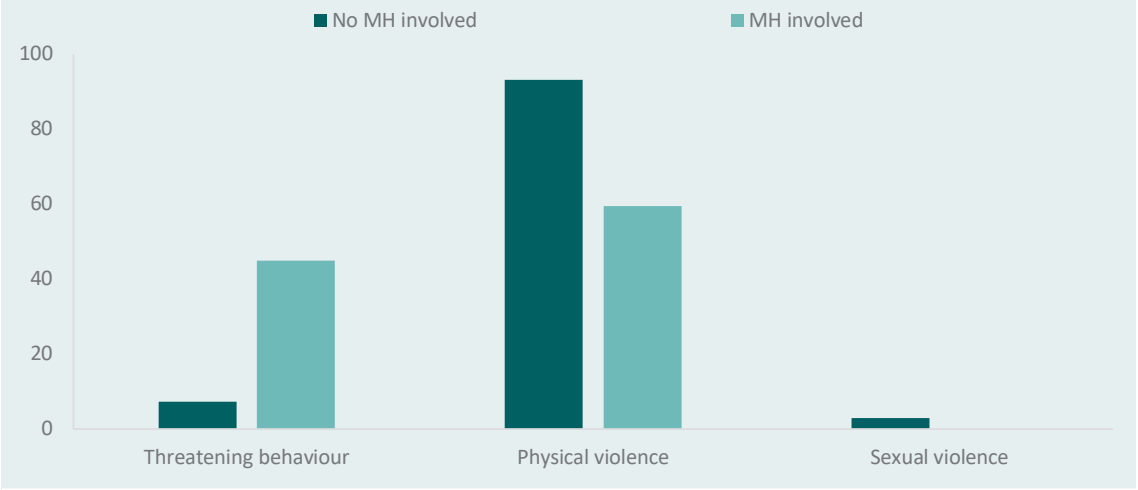
Figure 44: Ambulance attendances for victims of community violence, by current mental health symptoms, Victoria



Characteristics of ambulance attendances for victims of community violence, differentiated by current mental health symptoms, are presented in Table 24, and Figure 45 shows the type of violent behaviour. Where mental health symptoms were present, threatening behaviour was substantially higher (45%), compared with attendances where no mental health symptoms were present (7%). The percentage of female victims of community violence was higher when mental health symptoms were present (55% vs 31%, $p<0.001$).

Table 24: Characteristics of ambulance attendances for victims of community violence, by current mental health symptoms, Victoria						
		No mental health symptoms (*n*=828)		Mental health symptoms (*n*=89)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	568	68.6	40	44.9	20.42 (<0.001)
	Female	259	31.3	49	55.1	
Age group	Under 18	46	5.6	9	10.1	3.78 (0.581)
	18 to 29	277	33.5	28	31.5	
	30 to 39	175	21.1	21	23.6	
	40 to 49	187	22.6	18	20.2	
	50 to 59	91	11.0	9	10.1	
	60 and over	52	6.3	*n*<5	–	
SES	Quintile 1 (most disadvantaged)	261	31.5	33	37.1	4.69 (0.321)
	Quintile 2	147	17.8	12	13.5	
	Quintile 3	149	18.0	21	23.6	
	Quintile 4	130	15.7	13	14.6	
	Quintile 5 (least disadvantaged)	130	15.7	9	10.1	
Location type	Private place	404	48.8	53	59.6	4.61 (0.100)
	Public place	405	48.9	33	37.1	
	Unknown	19	2.3	*n*<5	–	
Location	Indoors	276	33.3	36	40.4	2.10 (0.350)
	Outdoors	385	46.5	35	39.3	
	Unknown	167	20.2	18	20.2	
Police co-attendance	Not stated	221	26.7	27	30.3	0.54 (0.462)
	Yes	607	73.3	62	69.7	
Transport to hospital	Not transported	255	30.8	27	30.3	0.01 (0.929)
	Transported	573	69.2	62	69.7	

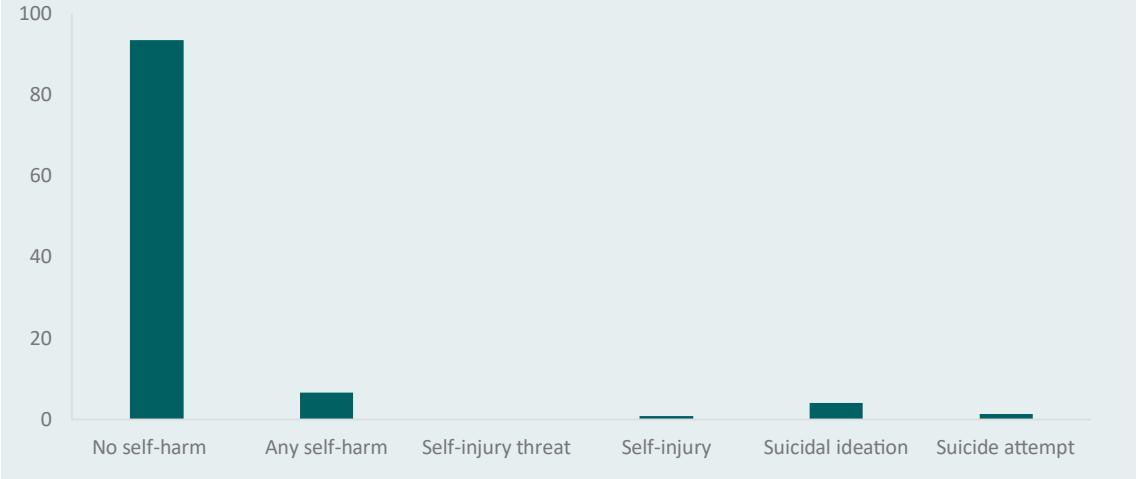
Figure 45: Ambulance attendances for victims of community violence, by type of violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in ambulance attendances for victims of community violence is shown in Figure 46. Less than 10 percent of these attendances involved self-harm for the victim of the violence. Where self-harm was present, this was most commonly suicidal ideation (4%).

Figure 46: Ambulance attendances for victims of community violence, by self-harm, Victoria



Characteristics of ambulance attendances for victims of community violence, differentiated by self-harm involvement, are shown in Table 25, and Figure 47 shows the type of violent behaviour. Where self-harm was observed in the victim of the violence, threatening behaviour was much higher (42%), compared with attendances where no self-harm was present (9%). The percentage of female victims of community violence was significantly higher when self-harm was observed in the victim of the violence (57% vs 32%, $p<0.001$). The percentage of attendances for people in the under 18 age group was also higher when self-harm was observed in victims of community violence (18% vs 5%, $p<0.001$). Almost all of those who were victims of community violence with co-occurring self-harm were transported to hospital (98% vs 67%, $p<0.001$).

Table 25: Characteristics of ambulance attendances for victims of community violence, by self-harm, Victoria

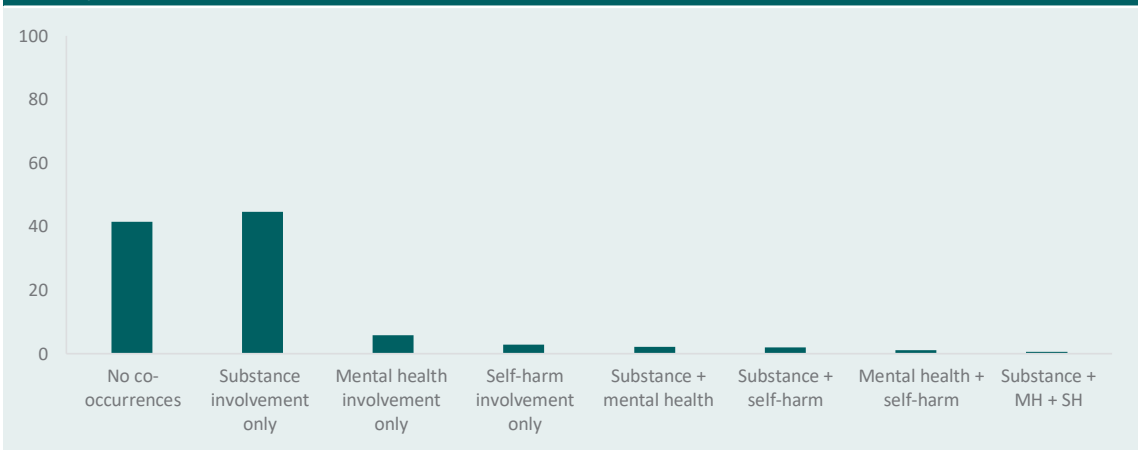
		No self-harm (*n*=857)		Self-harm (*n*=60)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	582	67.9	26	43.3	15.36 (<0.001)
	Female	274	32.0	34	56.7	
Age group	Under 18	44	5.1	11	18.3	28.05 (<0.001)
	18 to 29	283	33.0	22	36.7	
	30 to 39	190	22.2	6	10.0	
	40 to 49	187	21.8	18	30.0	
	50 to 59	97	11.3	*n*<5	–	
	60 and over	56	6.5	0	0.0	
SES	Quintile 1 (most disadvantaged)	272	31.7	22	36.7	2.33 (0.675)
	Quintile 2	147	17.2	12	20.0	
	Quintile 3	163	19.0	7	11.7	
	Quintile 4	133	15.5	10	16.7	
	Quintile 5 (least disadvantaged)	130	15.2	9	15.0	
Location type	Private place	431	50.3	26	43.3	5.49 (0.064)
	Public place	408	47.6	30	50.0	
	Unknown	18	2.1	*n*<5	–	
Location	Indoors	291	34.0	21	35.0	1.23 (0.540)
	Outdoors	396	46.2	24	40.0	
	Unknown	170	19.8	15	25.0	
Police co-attendance	Not stated	227	26.5	21	35.0	2.06 (0.151)
	Yes	630	73.5	39	65.0	
Transport to hospital	Not transported	281	32.8	*n*<5	–	25.50 (<0.001)
	Transported	576	67.2	59	98.3	

Figure 47: Ambulance attendances for victims of community violence, by type of violent behaviour and self-harm, Victoria

Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for victims of community violence are shown in Figure 48. Just under 60 percent of these attendances had co-occurring AOD misuse, mental health symptomology or self-harm also involved in the attendance. Where there were co-occurring issues, this was most commonly AOD involvement only (ie no mental health symptoms or self-harm), and this represented over 40 percent of these attendances.

Figure 48: Ambulance attendances for victims of community violence, by co-occurring issues, Victoria



Community violence—aggressors

The following tables and figures describe ambulance attendances for aggressors in community violence. These attendances relate to harms experienced by a person who was the aggressor in violence against a person who was not a family member or intimate partner. This could be a third party known to the patient, a stranger, a member of the police, or a paramedic. The data will thus not capture all violence perpetration, only cases where the aggressor in the violence had experienced harm and required treatment by paramedics. There were 2,602 ambulance attendances in Victoria in the 2016–17 financial year for aggressors in community violence. Of those 2,602, 50 (2%) were coded as being both the aggressor and the victim in the violence. A case study of this type of attendance is provided in Box 6.

Box 6: Case study of an ambulance attendance for an aggressor of community violence

Male Patient, Age 62

Attended outdoors, Police Co-attended

Patient with history of schizophrenia, chronic back pain, previous episodes of aggression and in-patient treatment for mental health.

Attended patient on scene with police following assault, stating he now feels weak and about to faint. Upon arrival patient was seated in his electric wheelchair. Noted to be extremely agitated and pouring water over his head. Patient immediately demanded pain relief and became hostile when advised that assessment would need to be done first. Patient continued to verbally abuse and physically threaten ambulance and police officers on scene, would not allow any observations to be taken and would not answer any questions. Patient continued to abuse ambulance officers during treatment, on arrival at hospital patient deliberately punched ambulance service laptop causing it to strike officer in the face, patient was warned that any further violence would result in security and police being called and patient being restrained. When taken in to hospital for assessment patient continued to be abusive toward staff and ambulance officers. Patient was assessed by emergency department and mental health staff prior to offload.

Overview

For ambulance attendances for aggressors of community violence, Figure 49 presents the relationship of the patient to the third party involved in the violent incident. ‘Other known third parties’ were the predominant third party in attendances for aggressors of community violence, followed by paramedics. The types of violent behaviour in ambulance attendances for aggressors of community violence are presented in Figure 50. Approximately three-quarters of this type of ambulance attendance involved threat of violence.

Figure 49: Ambulance attendances for the aggressors of community violence, by the relationship of the patient to the third party involved, Victoria

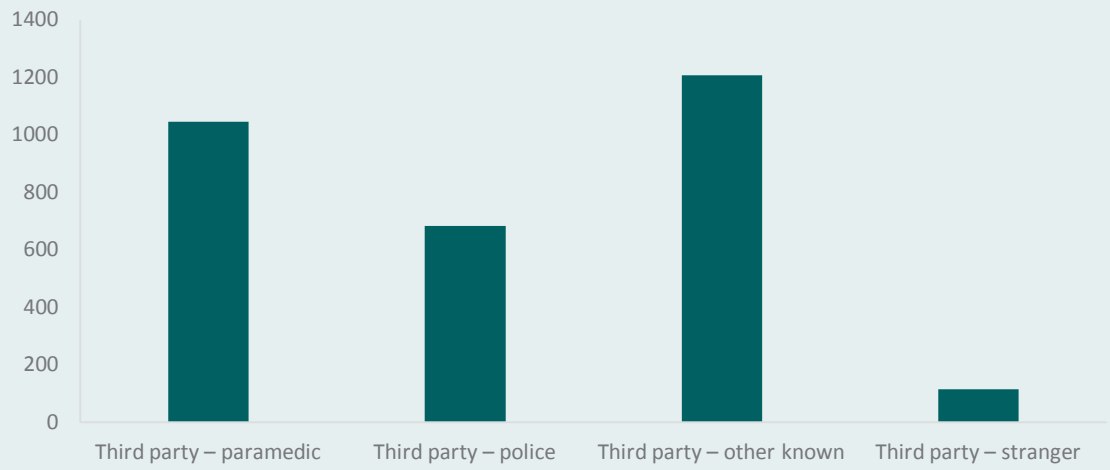
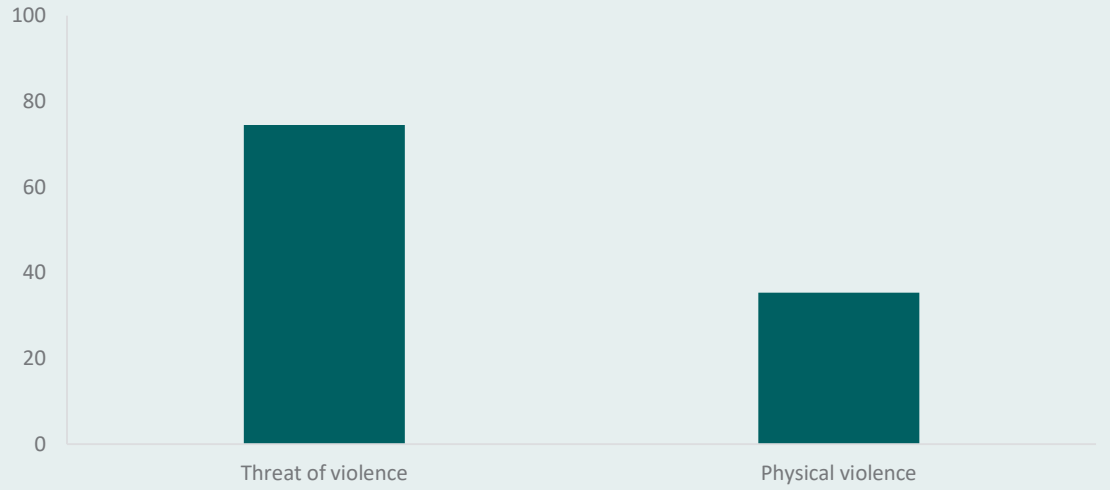


Figure 50: Ambulance attendances for the aggressors of community violence, by type of violent behaviour, Victoria



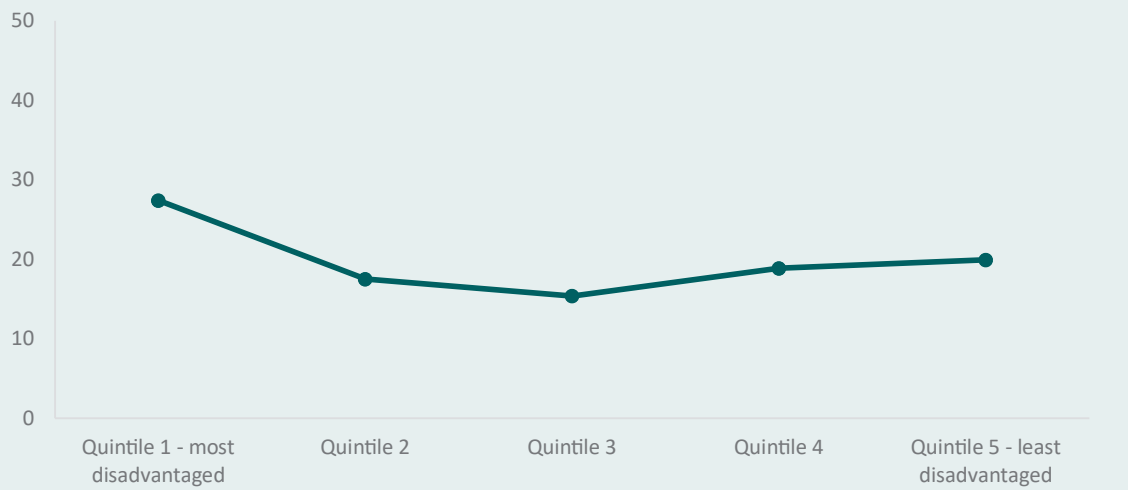
The characteristics of ambulance attendances for aggressors in community violence are presented in Table 26. Males make up approximately 60 percent of attendances for aggressors of community violence. The two age groups with the highest percentages of aggression in community violence are those aged 18 to 29 (23%), and 60 and over (22%). Just over half of these attendances occurred in a public place, with police co-attending approximately two-thirds of attendances.

The high proportion of attendances for those aged over 60 was an unexpected result; upon additional analysis, it was found to be associated with medically induced mental health symptoms. This sub-group is therefore analysed separately in the sub-section *Ambulance attendances featuring violence and medically induced mental health symptoms.*

Table 26: Characteristics of ambulance attendances for aggressors of community violence, Victoria			
		n	%
Gender	Male	1,593	61.2
	Female	1,005	38.6
	Other/unknown	*n*<5	–
Age group	Under 18	206	7.9
	18 to 29	589	22.6
	30 to 39	454	17.4
	40 to 49	517	19.9
	50 to 59	254	9.8
	60 and over	582	22.4
Location type	Private place	1,186	45.6
	Public place	1,316	50.6
	Unknown	99	3.8
Location	Indoors	1,392	53.5
	Outdoors	736	28.3
	Unknown	473	18.2
Police co-attendance	Not stated	849	32.6
	Yes	1,753	67.4
Transport to hospital	Not transported	453	17.4
	Transported	2,149	82.6

The socio-economic status in ambulance attendances for aggressors in community violence is presented in Figure 51. Although those in the lowest SES quintile form the largest proportion (27%) of ambulance attendances for aggressors in community violence, there is no clear SES gradient, with the remaining upper four quintiles approximately evenly represented.

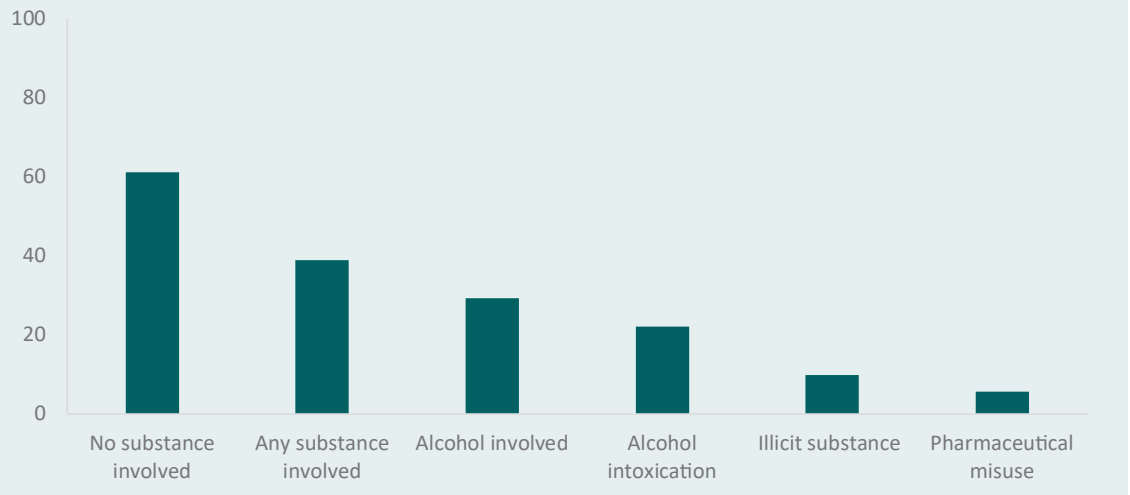
Figure 51: Ambulance attendances for aggressors of community violence, by socio-economic status (SES), Victoria



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for aggressors in community violence is presented in Figure 52. Almost 40 percent of these ambulance attendances involved a substance. Where AOD was involved, this was predominantly alcohol involvement (29%), with illicit substances and pharmaceutical misuse both representing less than 10 percent of these ambulance attendances. The sub-group of medically induced mental health symptoms showed a very low involvement of AOD (*n*=9); because they were not affecting the overall trends, they have been analysed together.

Figure 52: Ambulance attendances for aggressors of community violence, by AOD, Victoria



Where these ambulance attendances involved either illicit or pharmaceutical drugs, the specific substances are presented in Table 27. The most common illicit substances associated with ambulance attendances for aggressors in community violence were amphetamines (4%) and cannabis (3%). Benzodiazepines (3%) and anti-psychotics (1%) were the most commonly misused pharmaceuticals in these attendances.

Table 27: Ambulance attendances for aggressors of community violence, by individual substance, Victoria

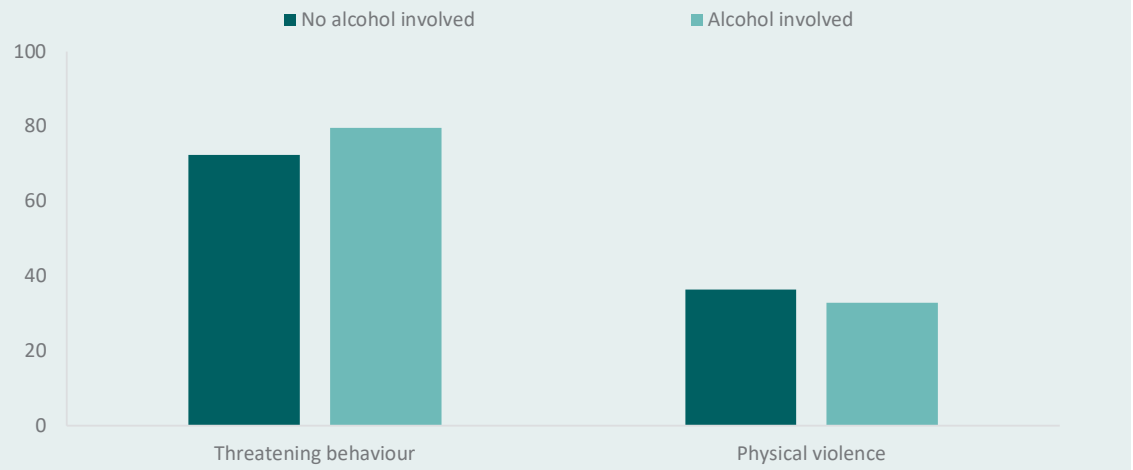
		n	%
Illicit drugs	No illicit substance	2,344	90.1
	Any illicit substance	258	9.9
	Amphetamine	108	4.2
	Cannabis	80	3.1
	Synthetic cannabinoids	14	0.5
	Cocaine	8	0.3
	Ecstasy	16	0.6
	GHB	26	1.0
	Heroin	27	1.0
	Ketamine	*n*<5	–
	LSD	9	0.3
	Inhalants	7	0.3
Pharmaceutical type	No pharmaceutical misuse	2,454	94.3
	Any pharmaceutical misuse	148	5.7
	Anti-convulsant	5	0.2
	Anti-depressant	15	0.6
	Anti-psychotic	27	1.0
	Benzodiazepine	66	2.5
	Opioid analgesic	13	0.5
	Other analgesic	23	0.9
	Opioid replacement therapy	11	0.4
	Pharmaceutical stimulant	*n*<5	–
	Other medication	30	1.2

Characteristics of ambulance attendances for aggressors in community violence, differentiated by alcohol involvement, are presented in Table 28, and Figure 53 shows the type of violent behaviour. When alcohol was involved, the percentage of attendances involving threatening behaviour was higher (80%), compared with attendances where no alcohol was involved (72%). Similarly, the percentage of males was higher when alcohol was involved in the attendance (65% vs 60%, p=0.033). Younger age groups had a higher percentage when there was alcohol involved; however, the over 60 age group proportions more than doubled when no alcohol was involved (11% to 27%, p<0.001). More violence occurred in a private place when alcohol was involved (57% vs 41%, p<0.001).

Table 28: Characteristics of ambulance attendances for aggressors of community violence, by alcohol, Victoria

		No alcohol involved (*n*=1,841)		Alcohol involved (*n*=761)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	1,100	59.8	493	64.8	6.81 (0.033)
	Female	739	40.1	266	35.0	
Age group	Under 18	183	9.9	23	3.0	147.83 (<0.001)
	18 to 29	399	21.7	190	25.0	
	30 to 39	298	16.2	156	20.5	
	40 to 49	308	16.7	209	27.5	
	50 to 59	154	8.4	100	13.1	
	60 and over	499	27.1	83	10.9	
SES	Quintile 1 (most disadvantaged)	498	27.1	215	28.3	6.00 (0.199)
	Quintile 2	330	17.9	125	16.4	
	Quintile 3	277	15.0	123	16.2	
	Quintile 4	337	18.3	154	20.2	
	Quintile 5 (least disadvantaged)	386	21.0	132	17.3	
Location type	Private place	752	40.8	434	57.0	65.38 (<0.001)
	Public place	999	54.3	317	41.7	
	Unknown	89	4.8	10	1.3	
Location	Indoors	1,070	58.1	322	42.3	84.96 (<0.001)
	Outdoors	426	23.1	310	40.7	
	Unknown	344	18.7	129	17.0	
Police co-attendance	Not stated	641	34.8	208	27.3	13.73 (<0.001)
	Yes	1,200	65.2	553	72.7	
Transport to hospital	Not transported	281	15.3	172	22.6	20.17 (<0.001)
	Transported	1,560	84.7	589	77.4	

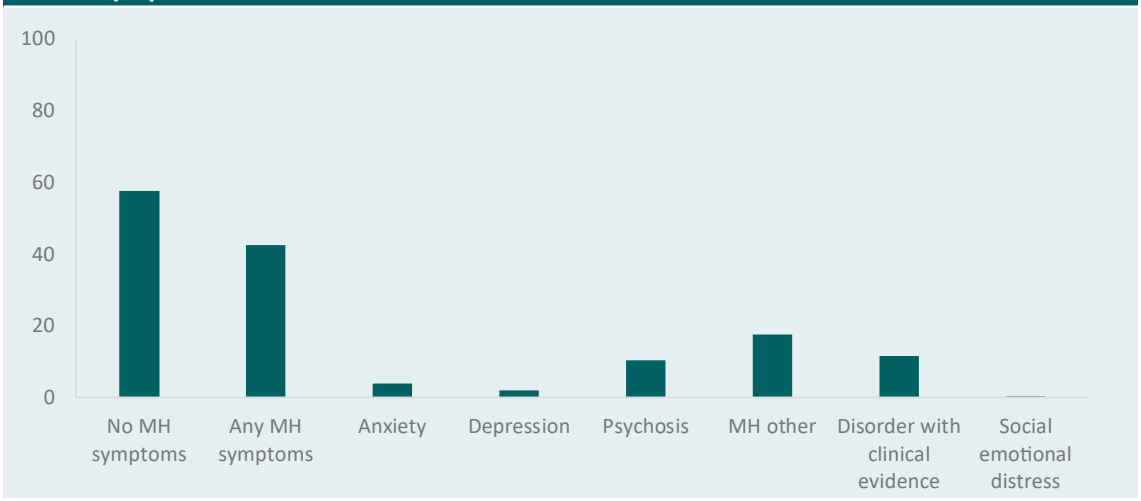
Figure 53: Ambulance attendances for aggressors of community violence, by type of violent behaviour and alcohol, Victoria



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for aggressors of community violence is presented in Figure 54. In approximately half of these attendances, no current mental health symptoms were observed in the aggressor of the violence. Where mental health symptoms were present, this was most commonly unspecified mental health symptoms (17%), followed by medically induced mental health symptoms (12%).

Figure 54: Ambulance attendances for aggressors of community violence, by current mental health symptoms, Victoria

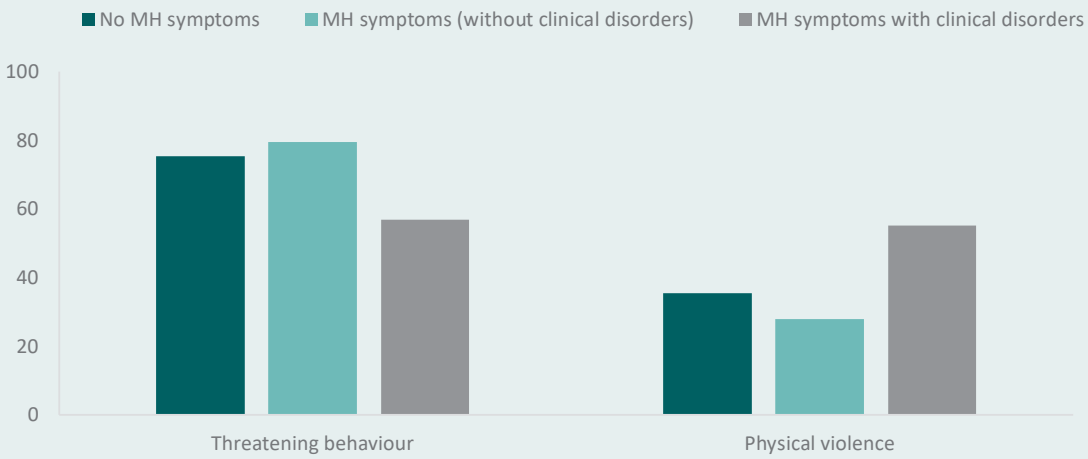


Characteristics of ambulance attendances for aggressors in community violence, differentiated by current mental health symptoms, are shown in Table 29, and Figure 55 shows the type of violent behaviour. Compared with attendances with no mental health symptoms involved, the presence of non-medically induced mental health symptoms did not affect the type of community violence; however, the presence of medically induced mental health symptoms was associated with a higher proportion of physical violence (55% vs 35%). When medically induced mental health symptoms were present, this was primarily related to those aged over 60. Police co-attendance was significantly lower with medically induced mental health symptoms (32%), compared with attendances with no mental health symptoms or non-medically induced mental health symptoms (70% and 75% respectively, $p<0.001$).

Table 29: Characteristics of ambulance attendances for aggressors of community violence, by current mental health symptoms (MHS), Victoria

		No MHS (*n*=1,497)		MHS—not medically induced (*n*=804)		Medically induced MHS (*n*=301)		
		n	%	*n*	%	*n*	%	χ^2 (*p* value)
Gender	Male	945	63.1	465	57.8	183	60.8	7.05 (0.133)
	Female	549	36.7	338	42.0	118	39.2	
Age group	Under 18	133	8.9	62	7.7	11	3.7	733.70 (<0.001)
	18 to 29	375	25.1	199	24.8	15	5.0	
	30 to 39	299	20.0	149	18.5	6	2.0	
	40 to 49	312	20.8	199	24.8	6	2.0	
	50 to 59	152	10.2	89	11.1	13	4.3	
	60 and over	226	15.1	106	13.2	250	83.1	
SES	Quintile 1 (most disadvantaged)	398	26.6	238	29.6	77	25.6	8.30 (0.404)
	Quintile 2	275	18.4	132	16.4	48	15.9	
	Quintile 3	232	15.5	126	15.7	42	14.0	
	Quintile 4	275	18.4	145	18.0	71	23.6	
	Quintile 5 (least disadvantaged)	296	19.8	159	19.8	63	20.9	
Location type	Private place	732	48.9	416	51.7	38	12.6	153.23 (<0.001)
	Public place	715	47.8	361	44.9	240	79.7	
	Unknown	50	3.3	26	3.2	23	7.6	
Location	Indoors	719	48.0	428	53.2	245	81.4	129.59 (<0.001)
	Outdoors	495	33.1	229	28.5	12	4.0	
	Unknown	283	18.9	146	18.2	44	14.6	
Police co-attendance	Not stated	447	29.9	198	24.6	204	67.8	197.77 (<0.001)
	Yes	1,050	70.1	606	75.4	97	32.2	
Transport to hospital	Not transported	348	23.2	64	8.0	41	13.6	88.40 (<0.001)
	Transported	1,149	76.8	740	92.0	260	86.4	

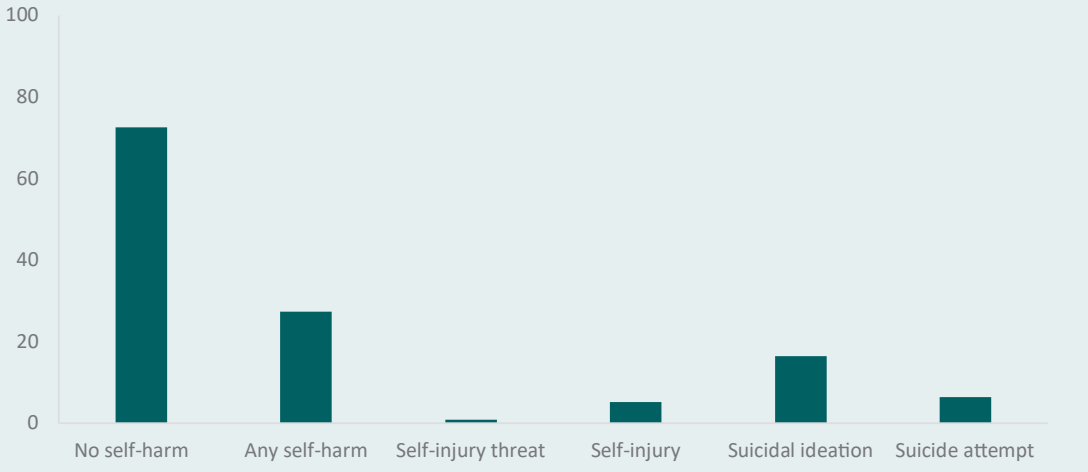
Figure 55: Ambulance attendances for aggressors of community violence, by type of violent behaviour and current mental health symptoms, Victoria



Self-harm involvement

The involvement of self-harm in ambulance attendances for aggressors in community violence is presented in Figure 56. Less than one-third of these attendances involved self-harm for the aggressor in the violence. Where self-harm was present, this was most commonly suicidal ideation (16%). The sub-group of those with medically induced mental health symptoms had a very low involvement of self-harm (*n*=11); because they were not affecting the overall trends, they have been analysed together.

Figure 56: Ambulance attendances for aggressors of community violence, by self-harm, Victoria

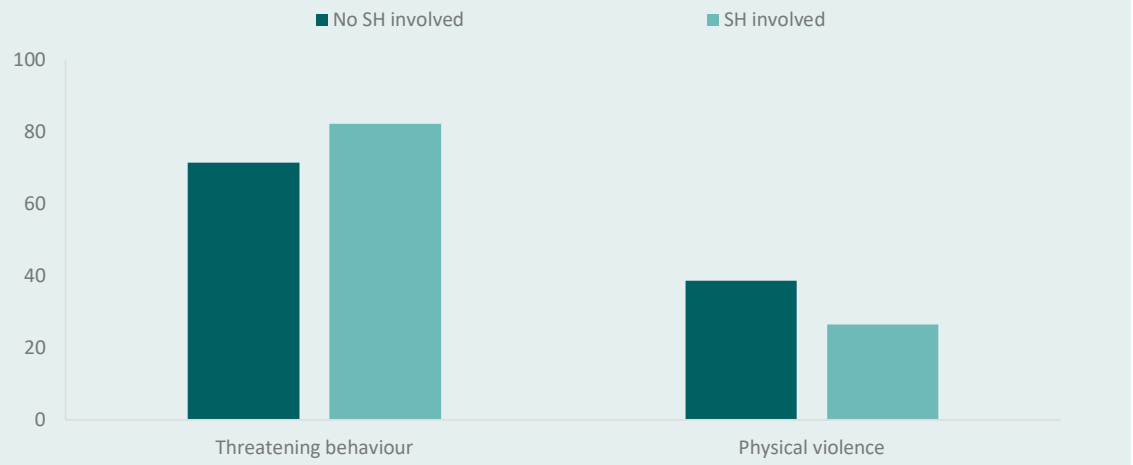


Characteristics of ambulance attendances for aggressors in community violence, differentiated by the presence of self-harm, are presented in Table 30, and Figure 57 shows the type of violent behaviour. When self-harm was present, the percentage of threatening behaviour was higher (82%), compared with attendances where no self-harm was present (72%). Similarly, the percentage of attendances for females was higher when self-harm was present (48% vs 35%, $p<0.001$). The percentage of attendances for those in younger age groups was higher when self-harm was present ($p<0.001$), as was the percentage of attendances that occurred in a private place (57% vs 41%, $p<0.001$).

Table 30: Characteristics of ambulance attendances for aggressors of community violence, by self-harm, Victoria

		No self-harm (*n*=1,889)		Self-harm (*n*=713)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	1,221	64.6	372	52.2	34.40 (<0.001)
	Female	666	35.3	339	47.5	
Age group	Under 18	108	5.7	98	13.7	159.32 (<0.001)
	18 to 29	395	20.9	194	27.2	
	30 to 39	316	16.7	138	19.4	
	40 to 49	354	18.7	163	22.9	
	50 to 59	185	9.8	69	9.7	
	60 and over	531	28.1	51	7.2	
SES	Quintile 1 (most disadvantaged)	520	27.5	193	27.1	1.13 (0.890)
	Quintile 2	334	17.7	121	17.0	
	Quintile 3	286	15.1	114	16.0	
	Quintile 4	364	19.3	127	17.8	
	Quintile 5 (least disadvantaged)	372	19.7	146	20.5	
Location type	Private place	779	41.2	407	57.1	53.94 (<0.001)
	Public place	1,037	54.9	279	39.1	
	Unknown	72	3.8	27	3.8	
Location	Indoors	1,038	54.9	354	49.6	10.69 (0.005)
	Outdoors	534	28.3	202	28.3	
	Unknown	316	16.7	157	22.0	
Police co-attendance	Not stated	721	38.2	128	18.0	96.23 (<0.001)
	Yes	1,168	61.8	585	82.0	
Transport to hospital	Not transported	401	21.2	52	7.3	69.91 (<0.001)
	Transported	1,488	78.8	661	92.7	

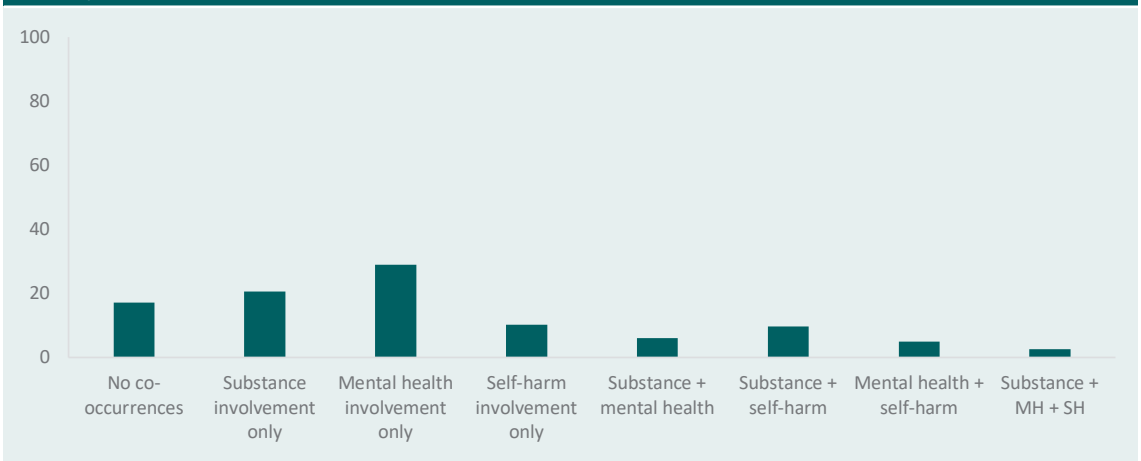
Figure 57: Ambulance attendances for aggressors of community violence, by type of violent behaviour and self-harm, Victoria



Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for aggressors of other family violence are shown in Figure 58. More than 80 percent of these attendances had co-occurring substance use, mental health or self-harm for the aggressor in the violence. Where there were co-occurring issues, this was most commonly mental health involvement only (29%; ie no substance involvement or self-harm), followed by AOD involvement only (21%).

Figure 58: Ambulance attendances for aggressors of community violence, by co-occurring issues, Victoria



Tasmania

Summary of results

In the 2016–17 financial year, the National Ambulance Project dataset contains 7,191 ambulance attendances in Tasmania. Of those, 560 (8%) were related to violence.

The violence types in the 560 violence-related ambulance attendances in Tasmania were:

- 121 (22%) coded as intimate partner violence;
- 133 (24%) coded as other family violence; and
- 327 (58%) coded as community violence.

The violent behaviours in the 560 violence-related ambulance attendances in Tasmania were:

- 235 (42%) coded as threatening behaviour;
- 355 (63%) coded as physical violence; and
- 0 (0%) coded as sexual violence.

The roles in violence in the 560 violence-related ambulance attendances in Tasmania were:

- 285 (51%) for an attendance for a victim in violence;
- 249 (45%) for an attendance for an aggressor in violence; and
- 26 (5%) for an attendance where the individual was both the victim and aggressor in violence.

Co-occurring issues in violence in the 560 violence-related ambulance attendances in Tasmania were:

- 202 (36%) also involved AOD use;
- 122 (22%) also involved mental health symptoms; and
- 82 (15%) also involved self-harm.

The gender of individuals in the 560 violence-related ambulance attendances in Tasmania were:

- 312 (56%) male;
- 247 (44%) female; and
- Less than 5, where gender was other or unspecified.

Intimate partner violence—victims

The following tables and figures describe ambulance attendances for victims of intimate partner violence. There were 87 ambulance attendances for victims of intimate partner violence in Tasmania in the 2016–17 financial year. Of those 87, fewer than five attendances were coded as being both the victim and aggressor in the violence. A case study of this type of attendance is provided in Box 7.

Box 7: Case study of an ambulance attendance for a victim of intimate partner violence

Female Patient, Age 32

Attended at Public Place, patient in private vehicle. Police co-attended.

History of self-harm and suicide attempts, anxiety and depression on background of domestic violence.

Patient non-communicative but compliant with patient's friend being the sole source of information. Friend states the patient was sexually and physically abused by romantic partner last night and has today made several suicide attempts by hanging. Patient has stated ongoing suicidal ideation to friend who has then contacted police to help locate patient. Some drug use indicated. Ambulance requested, patient sectioned by police due to suicidal ideation.

Overview

The types of violent behaviour in ambulance attendances for victims of intimate partner violence are presented in Figure 59. The majority (90%) of these attendances involved physical violence.

Figure 59: Ambulance attendances for victims of intimate partner violence, by type of violent behaviour, Tasmania

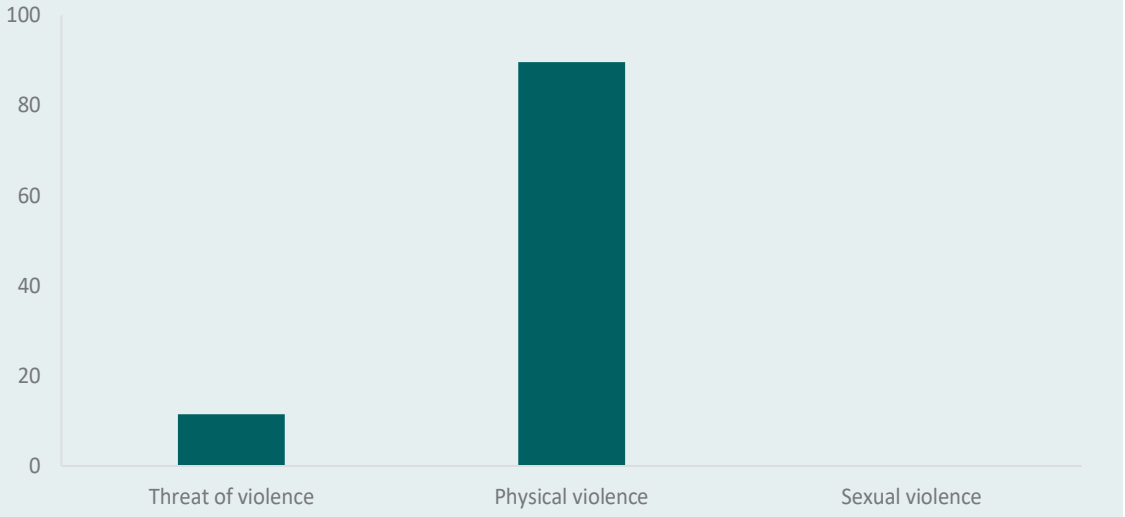


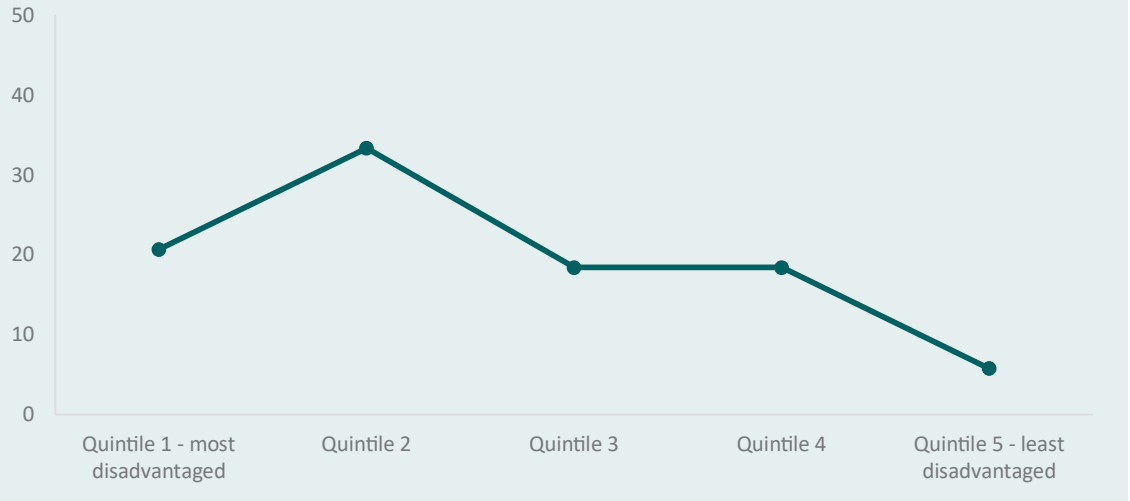
Table 31 presents the characteristics of ambulance attendances for victims of intimate partner violence. The majority (81%) of these ambulance attendances were for females. Most of these attendances occurred in a private location (82%) and indoors (84%). Police co-attended slightly less than half of these attendances.

Table 31: Characteristics of ambulance attendances for victims of intimate partner violence, Tasmania

		n	%
Gender	Male	17	19.5
	Female	70	80.5
	Other/unknown	8	9.2
Age group	Under 18	*n*<5	–
	18 to 29	32	36.8
	30 to 39	25	28.7
	40 to 49	14	16.1
	50 to 59	9	10.3
	60 and over	*n*<5	–
Location type	Private place	71	81.6
	Public place	15	17.2
	Unknown	*n*<5	–
Location	Indoors	73	83.9
	Outdoors	13	14.9
	Unknown	*n*<5	–
Police co-attendance	Not stated	47	54.0
	Yes	40	46.0
Transport to hospital	Not transported	31	35.6
	Transported	56	64.4

The socio-economic status in ambulance attendances for victims of intimate partner violence is presented in Figure 60. There is a slight SES gradient, and those in the lowest two socio-economic quintiles comprised just over half of these ambulance attendances.

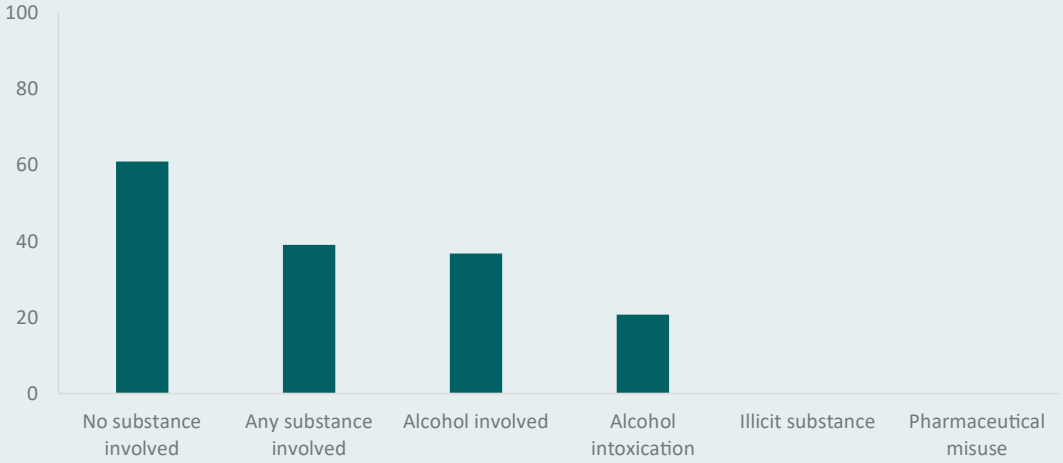
Figure 60: Ambulance attendances for victims of intimate partner violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for victims of intimate partner violence is presented in Figure 61. Fewer than 40 percent of these ambulance attendances also involved a substance. Where AOD was involved, this was predominantly alcohol involvement (37%).

Figure 61: Ambulance attendances for victims of intimate partner violence, by AOD, Tasmania



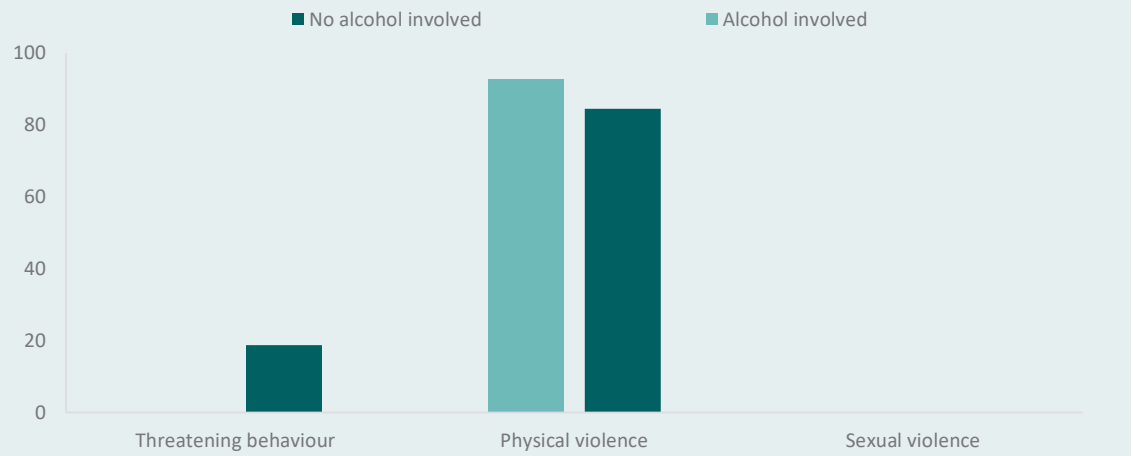
Numbers of attendances were too low to enable investigation of the specific substances involved; where ambulance attendances involved either illicit or pharmaceutical drugs, no substance had an $n \geq 5$.

Characteristics of ambulance attendances for victims of intimate partner violence, differentiated by alcohol involvement, are shown in Table 32, and Figure 62 shows the type of violent behaviour. There were no significant differences in characteristics based on the presence of alcohol.

Table 32: Characteristics of ambulance attendances for victims of intimate partner violence, by alcohol, Tasmania

		No alcohol involved (*n*=55)		Alcohol involved (*n*=32)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	10	18.2	7	21.9	0.18 (0.675)
	Female	45	81.8	25	78.1	
Age group	Under 18	*n*<5	–	0	0.0	9.52 (0.090)
	18 to 29	20	36.4	12	37.5	
	30 to 39	14	25.5	11	34.4	
	40 to 49	11	20.0	*n*<5	–	
	50 to 59	*n*<5	–	6	18.8	
	60 and over	*n*<5	–	0	0.0	
SES	Quintile 1 (most disadvantaged)	12	21.8	6	18.8	1.15 (0.886)
	Quintile 2	17	30.9	12	37.5	
	Quintile 3	10	18.2	6	18.8	
	Quintile 4	11	20.0	5	15.6	
	Quintile 5 (least disadvantaged)	*n*<5	–	*n*<5	–	
Location type	Private place	42	76.4	29	90.6	2.90 (0.234)
	Public place	12	21.8	*n*<5	–	
	Unknown	*n*<5	–	0	0.0	
Location	Indoors	48	87.3	25	78.1	2.41 (0.299)
	Outdoors	6	10.9	7	21.9	
	Unknown	*n*<5	–	*n*<5	–	
Police co-attendance	Not stated	28	50.9	19	59.4	0.58 (0.445)
	Yes	27	49.1	13	40.6	
Transport to hospital	Not transported	22	40.0	9	28.1	1.24 (0.265)
	Transported	33	60.0	23	71.9	

Figure 62: Ambulance attendances for victims of intimate partner violence, by violent behaviour and alcohol, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for victims of intimate partner violence was investigated; however, less than 10 percent of these attendances involved current mental health symptoms for the victim of the violence. Numbers were too small to enable investigation of the specific type of mental health symptoms involved in these attendances or differentiation of attendances on the basis of current mental health symptoms.

Self-harm involvement

The involvement of self-harm in ambulance attendances for victims of intimate partner violence was investigated; however, less than five percent of these attendances involved self-harm for the victim of the violence. Numbers were too small to enable investigation of the specific type of mental health symptoms involved in these attendances or differentiation of attendances on the basis of the presence of self-harm.

Interactions between co-occurrences

The interactions between co-occurring issues (violence, substance use, mental health symptoms and self-harm) in ambulance attendances for victims of intimate partner violence were analysed. Approximately two-thirds of these attendances had no co-occurring issues for the victim of the violence. Where there were co-occurring issues, this was most commonly AOD involvement only (32%; ie no mental health symptoms or self-harm), and no other co-occurring issues had $n \geq 5$.

Intimate partner violence—aggressors

The following tables and figures describe ambulance attendances for aggressors in intimate partner violence. These attendances relate to harms experienced by a person who was the aggressor in violence against their intimate partner. The data will thus not capture all violence perpetration, only cases where the aggressor in the violence had experienced harm and required treatment by paramedics. There were 36 ambulance attendances in Tasmania in the 2016–17 financial year associated with aggressors in intimate partner violence. Of those 36, fewer than five attendances were coded as being both the aggressor and victim in the violence. A case study of this type of attendance is provided in Box 8.

Box 8: Case study of an ambulance attendance for an aggressor of intimate partner violence

Male Patient, Age 50

Attended at police station.

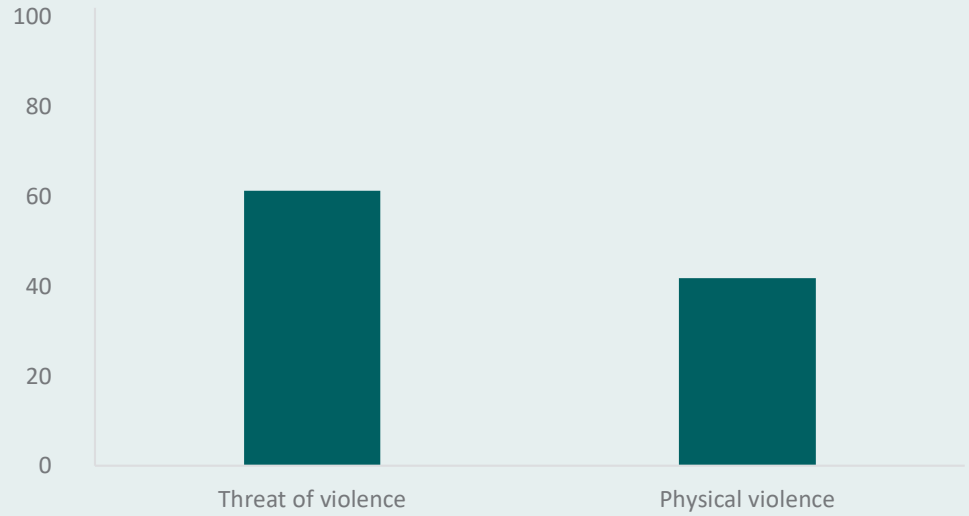
Patient with history of bipolar disorder

Police were called to a male patient having a disagreement with his partner tonight, patient taken into custody. Patient has been manic in police care and allegedly made threatening and violent statements and has been placed under section. Appears elevated and states has not slept in four days. Patient states he tried to strangle his partner today and she didn't die, and now he wants to kill himself. Patient's breath smells of alcohol, states he has had 10 scotches tonight. Patient refusing to answer most questions during assessment and is verbally abusive to ambulance crew.

Overview

The types of violent behaviour within ambulance attendances for aggressors in intimate partner violence are shown in Figure 63. The majority (61%) of these ambulance attendances involved threat of violence, and the remainder involved physical violence.

Figure 63: Ambulance attendances for aggressors of intimate partner violence, by violent behaviour, Tasmania



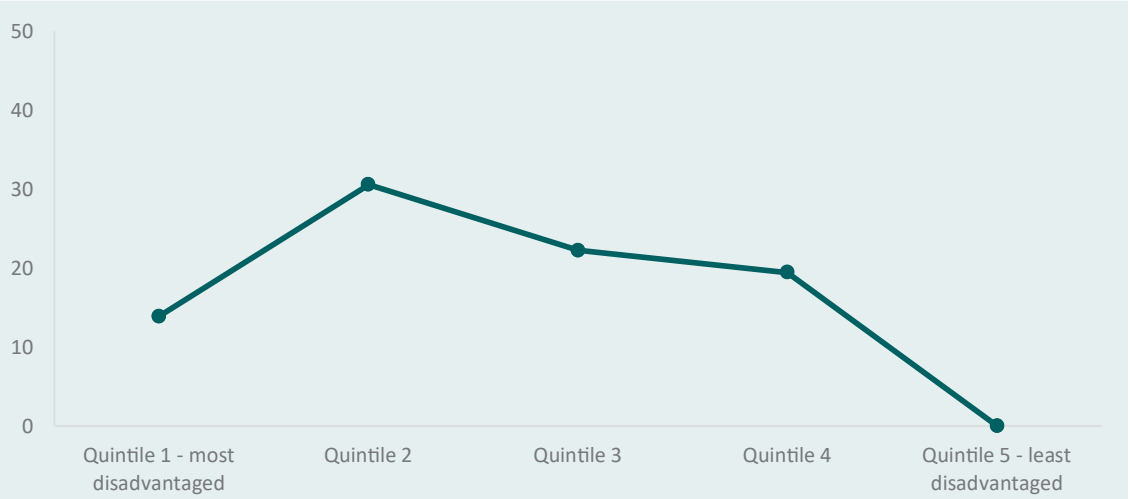
The characteristics of ambulance attendances for aggressors in intimate partner violence are presented in Table 33.

Table 33: Characteristics of ambulance attendances for aggressors in intimate partner violence, Tasmania

		n	%
Gender	Male	14	38.9
	Female	22	61.1
	Other/unknown	0	0.0
Age group	Under 18	*n*<5	–
	18 to 29	7	19.4
	30 to 39	7	19.4
	40 to 49	6	16.7
	50 to 59	*n*<5	–
	60 and over	10	27.8
Location type	Private place	33	91.7
	Public place	*n*<5	–
	Unknown	*n*<5	–
Location	Indoors	32	88.9
	Outdoors	*n*<5	–
	Unknown	*n*<5	–
Police co-attendance	Not stated	22	61.1
	Yes	14	38.9
Transport to hospital	Not transported	8	22.2
	Transported	28	77.8

The socio-economic status in ambulance attendances for aggressors in intimate partner violence is presented in Figure 64. There is no clear SES gradient evident, with those in quintile 2 representing approximately 30 percent of these attendances.

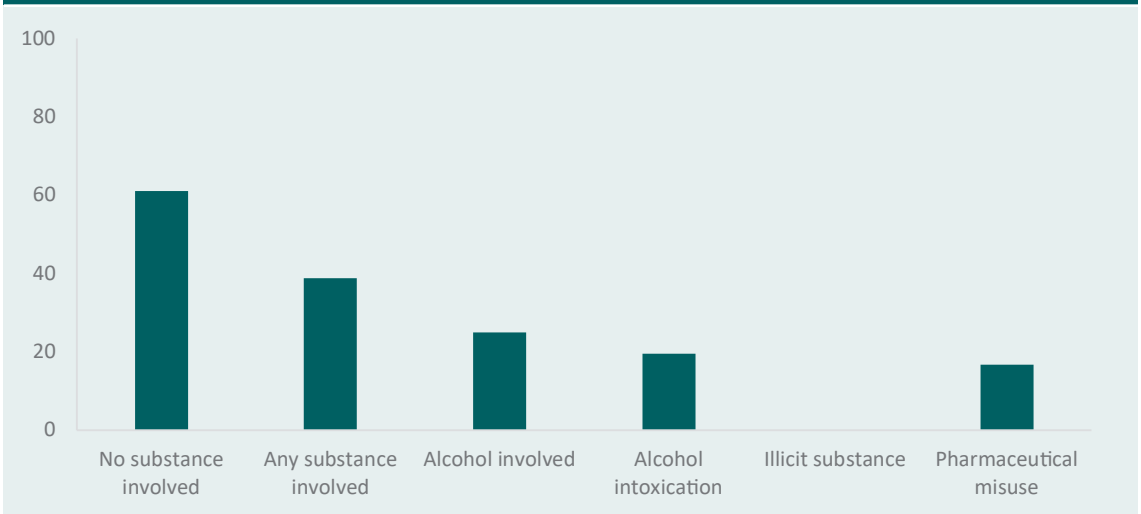
Figure 64: Ambulance attendances for aggressors of intimate partner violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) for the aggressor in the violence is shown in Figure 65. Just over one-third of these ambulance attendances involved a substance, predominantly alcohol (25%), with pharmaceutical misuse in approximately 16 percent of these attendances.

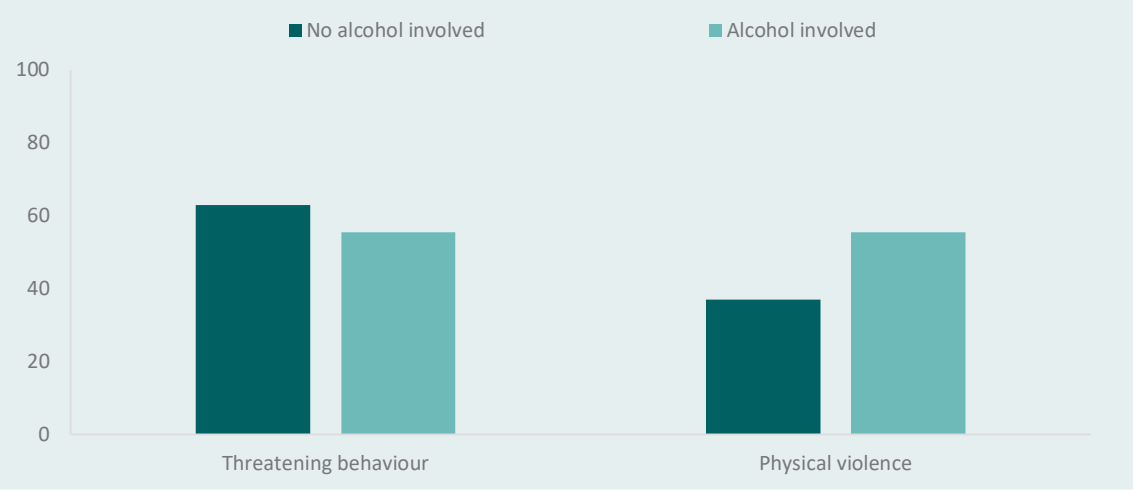
Figure 65: Ambulance attendances for aggressors of intimate partner violence, by AOD, Tasmania



Numbers of attendances were too low to investigate the specific substances involved; where ambulance attendances involved either illicit or pharmaceutical drugs, no substance had an $n \geq 5$.

Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by alcohol involvement, could not be analysed because numbers were too low. The type of violence is shown in Figure 66. Physical violence among aggressors of intimate partner violence was more prevalent in attendances involving alcohol, compared with attendances where no alcohol was involved (56% vs 37%, respectively).

Figure 66: Ambulance attendances for aggressors of intimate partner violence, by type of violent behaviour and AOD, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for aggressors in intimate partner violence is shown in Figure 67. Approximately half of these attendances involved current mental health symptoms for the aggressor in the violence, most commonly unspecified mental health symptoms (22%).

Figure 67: Ambulance attendances for aggressors of intimate partner violence, by current mental health symptoms, Tasmania

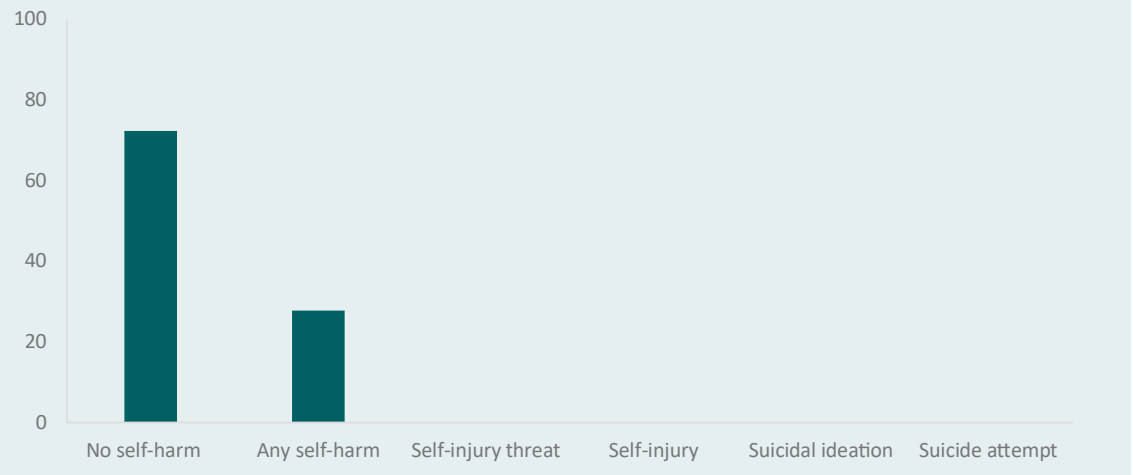
Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by current mental health symptoms, could not be analysed because numbers were too low. The type of violence is shown in Figure 68. Mental health symptoms had a limited effect on the type of violence; however, the percentage of attendances for females was higher when mental health symptoms were present (68% vs 53%).

Figure 68: Ambulance attendances for aggressors of intimate partner violence, by type of violent behaviour and current mental health symptoms, Tasmania

Self-harm involvement

The involvement of self-harm in ambulance attendances for aggressors in intimate partner violence is presented in Figure 69. Approximately one-quarter of these attendances involved self-harm for the aggressor in the violence. Numbers were too low to enable analysis of the specific type of self-harm involved in these attendances.

Figure 69: Ambulance attendances for aggressors of intimate partner violence, by self-harm, Tasmania



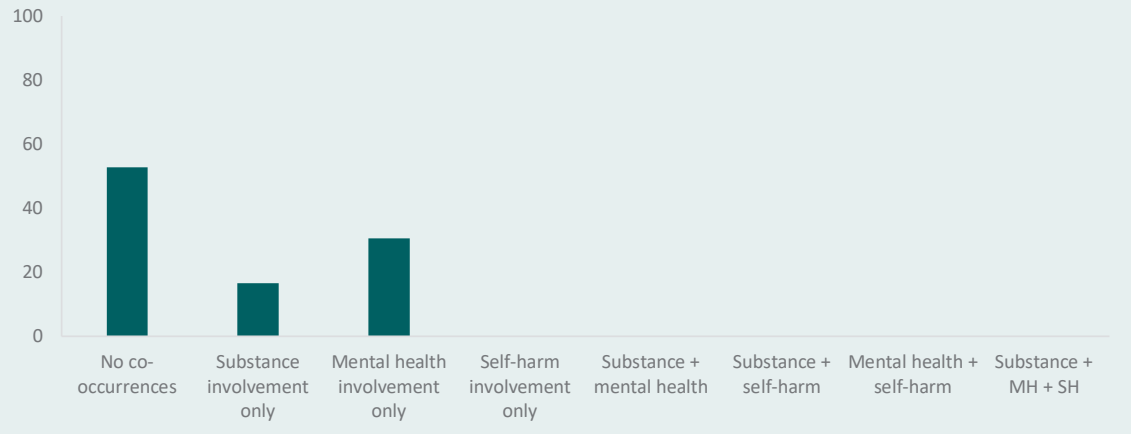
Characteristics of ambulance attendances for aggressors in intimate partner violence, differentiated by self-harm involvement, could not be analysed because numbers were too low. The type of violence is shown in Figure 70. The proportion of physical violence was higher when self-harm was present (50%), compared with attendances where no self-harm was present (39%). The proportion of attendances for males was higher when self-harm was present (50% vs 35%).

Figure 70: Ambulance attendances for aggressors of intimate partner violence, by type of violent behaviour and self-harm, Tasmania

Interactions between co-occurring issues

The interactions between co-occurring issues (violence, substance use, mental health symptoms and self-harm) in ambulance attendances for aggressors of intimate partner violence are shown in Figure 71. Approximately half of these attendances had co-occurring issues for the aggressor in the violence, most commonly mental health involvement only (31%; ie no substance involvement or self-harm), followed by AOD involvement only (17%).

Figure 71: Ambulance attendances for aggressors of intimate partner violence, by co-occurring issues, Tasmania



Other family violence—victims

The following tables and figures describe ambulance attendances for victims of other family violence. These attendances relate to harms experienced by a person who was the victim of violence by a family member who was not an intimate partner. This could be a parent, child, minor child or other family member. There were 82 of these ambulance attendances in Tasmania in the 2016–17 financial year for victims of other family violence, and fewer than five were coded as being both the victim and the aggressor in the violence. A case study of this type of attendance is provided in Box 9.

Box 9: Case study of an ambulance attendance for a victim of other family violence

Male Patient, Age 50

Attended at Private Residence, Outdoors, Police co-attended

Patient with no relevant medical or mental health history.

Patient was celebrating his mother's birthday with family this evening was returning to home address to continue celebrations before patient and another family member allegedly had a verbal and physical altercation. Patient reports he was punched repeatedly in the head and at one point was face down, pinned, having head punched causing him to become incontinent. No other family members witnessed event and simply heard the commotion and found patient and family member in a fight. Ambulance and police requested by family. Patient reports drinking since 2200hrs, consuming beer and bourbon (unknown exact quantity). Superficial parietal and eyebrow lacerations, dried blood, nil active bleeding during assessment. Speaking with police out front of address on arrival.

Overview

For ambulance attendances for victims of other family violence, Figure 72 presents the relationship of the patient to the third party involved in the violent incident. 'Other family members' were the predominant third parties in attendances for victims of other family violence, followed by child of the person being attended. The types of violent behaviour within ambulance attendances for victims of other family violence are shown in Figure 73. The majority of ambulance attendances (95%) were for victims of physical violence.

Figure 72: Ambulance attendances for victims of other family violence, by the relationship of the patient to the third party involved, Tasmania

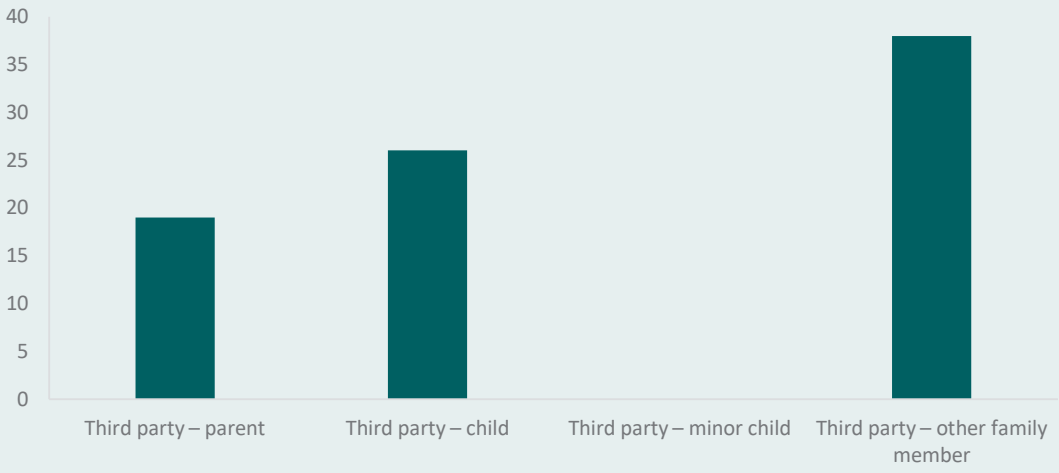
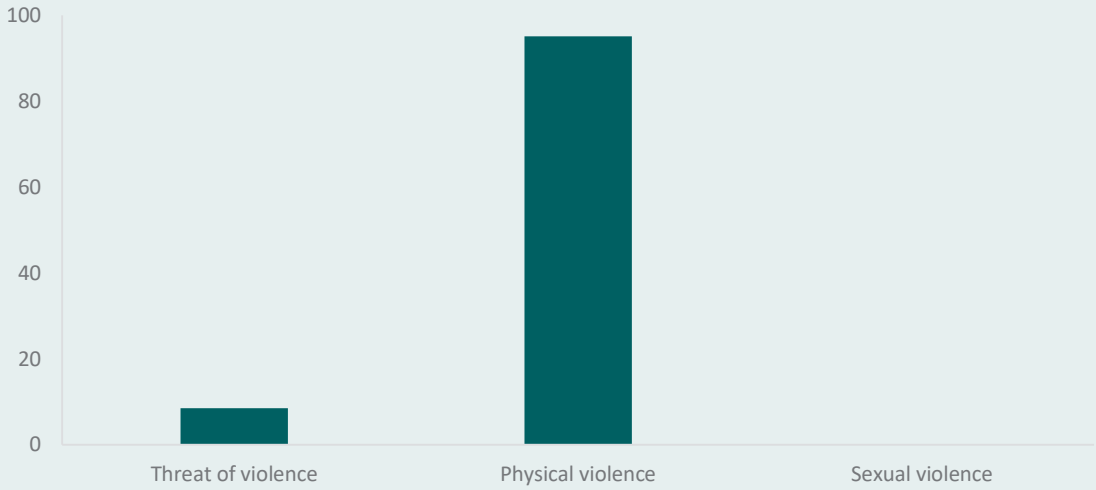


Figure 73: Ambulance attendances for victims of other family violence, by type of violent behaviour, Tasmania



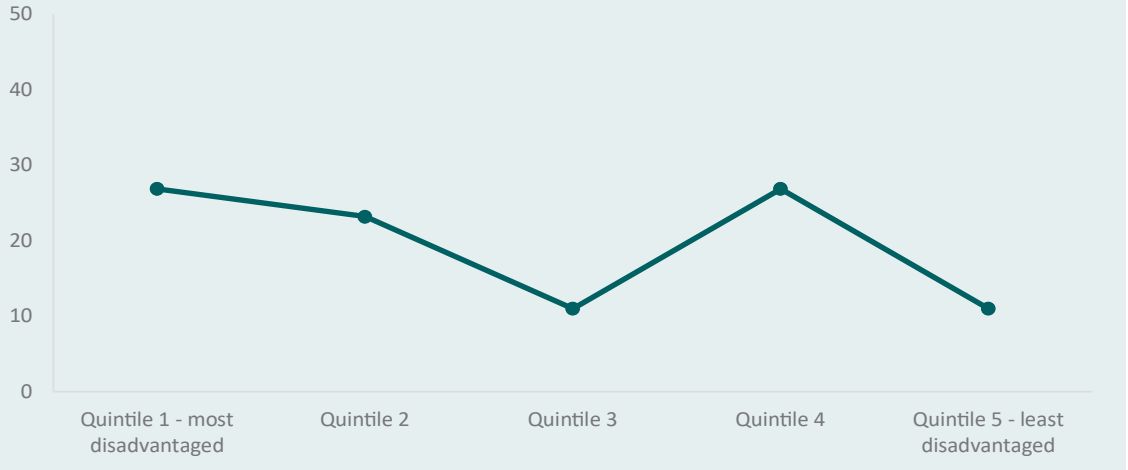
The characteristics of ambulance attendances for victims of other family violence are presented in Table 34. The two youngest age groups (under 18, and 18 to 29) each made up approximately one-quarter of these attendances. Police co-attended approximately half of these attendances, with just under two-thirds of victims of other family violence transported to hospital.

Table 34: Characteristics of ambulance attendances for victims of other family violence, Tasmania

		n	%
Gender	Male	42	51.2
	Female	40	48.8
	Other/unknown	0	0.0
Age group	Under 18	21	25.6
	18 to 29	21	25.6
	30 to 39	8	9.8
	40 to 49	12	14.6
	50 to 59	8	9.8
	60 and over	12	14.6
Location type	Private place	68	82.9
	Public place	13	15.9
	Unknown	*n*<5	–
Location	Indoors	64	78.0
	Outdoors	16	19.5
	Unknown	*n*<5	–
Police co-attendance	Not stated	42	51.2
	Yes	40	48.8
Transport to hospital	Not transported	28	34.1
	Transported	54	65.9

The socio-economic status in ambulance attendances for victims of other family violence is presented in Figure 74. There is a slight SES gradient evident overall, although quintile 4 has a percentage equal to that of quintile 1.

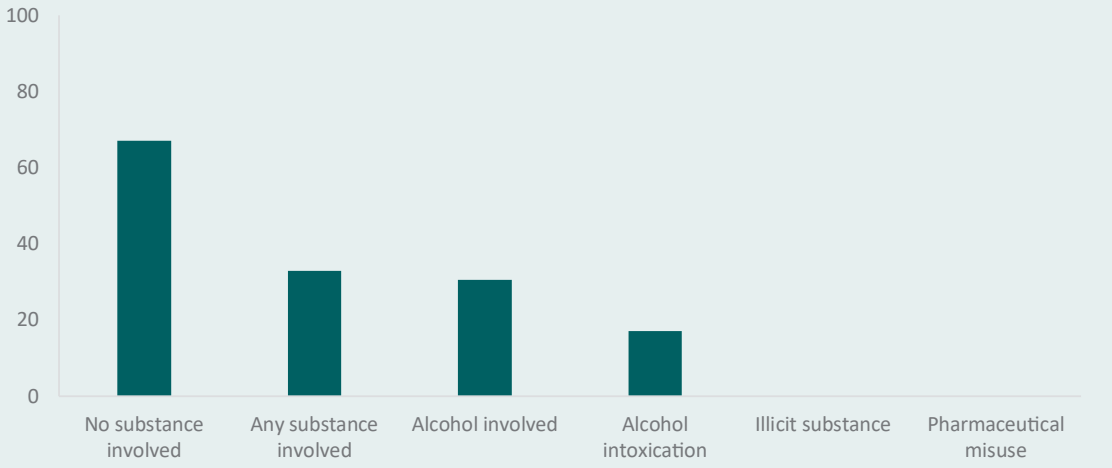
Figure 74: Ambulance attendances for victims of other family violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for victims of other family violence is shown in Figure 75. Just under one-third of these ambulance attendances involved a substance, predominantly alcohol (31%).

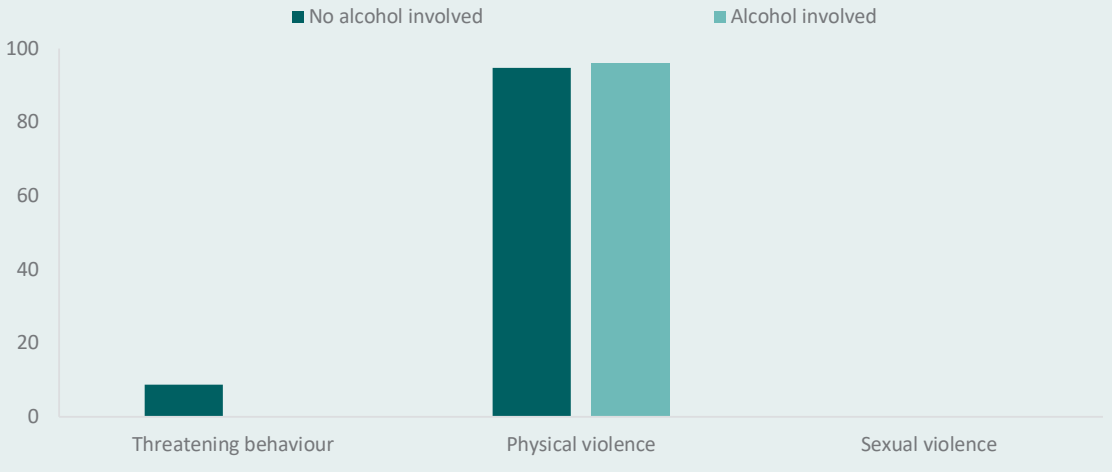
Figure 75: Ambulance attendances for victims of other family violence, by AOD, Tasmania



Numbers of attendances were too low to enable investigation of the specific substances involved; where ambulance attendances involved either illicit or pharmaceutical drugs, no substance had an $n \geq 5$.

Characteristics of ambulance attendances for victims of other family violence, differentiated by alcohol involvement, could not be analysed because numbers were too low. The type of violence is shown in Figure 76. Alcohol involvement had minimal effect on the type of violent behaviour or the gender of victims of other family violence.

Figure 76: Ambulance attendances for victims of other family violence, by type of violent behaviour and alcohol involvement, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for victims of other family violence was analysed, and just over 10 percent of these attendances involved current mental health symptoms for the victim of the violence. However, numbers were too low to enable investigation of the specific type of mental health symptoms or differentiation of attendances on the basis of current mental health symptoms. This includes the medically induced mental health symptom sub-group.

Self-harm involvement

The involvement of self-harm in ambulance attendances for victims of other family violence was analysed, and less than five percent of these attendances involved self-harm for the victim of the violence; for this reason, they could not be further analysed.

Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for victims of other family violence are shown in Figure 77. Just over 40 percent of these attendances had co-occurring issues for the victim of the violence, most commonly AOD involvement only (31%; ie no mental health symptoms or self-harm), followed by mental health involvement only (10%).

Figure 77: Ambulance attendances for victims of other family violence, by co-occurring issues, Tasmania

Other family violence—aggressors

The following tables and figures describe ambulance attendances for aggressors in other family violence. These attendances relate to harms experienced by a person who was the aggressor in violence against a family member who was not an intimate partner. This could be a parent, child, minor child, or other family member. The data will thus not capture all violence perpetration, only cases where the aggressor in the violence had experienced harm and required treatment by paramedics. There were 51 violence-related ambulance attendances in Tasmania in the 2016–17 financial year associated with aggressors in other family violence. Of those 51, fewer than five were coded as being both the aggressor and victim in the violence. A case study of this type of attendance is provided in Box 10.

Box 10: Case study of an ambulance attendance for an aggressor in other family violence

Male Patient, Age 24

Attended at Police Station

History of previous suicide attempts

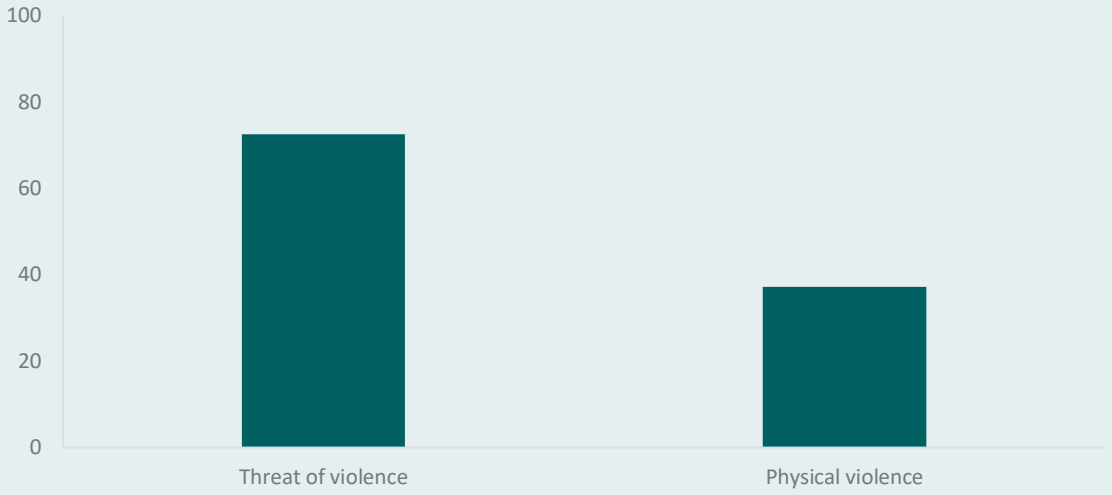
24-year-old had an altercation with his brother tonight culminating in patient striking his brother with fists. Patient picked up by police and taken to station. Patient also in need of emergency accommodation. Patient now states he wants to hurt himself, states to ambulance officers that he didn't want to be around by the end of the week. Not aggressive with ambulance or police.

Overview

For ambulance attendances for aggressors of other family violence, Figure 78 presents the relationship of the patient to the third party involved in the violent incident. Parents were the predominant third party in these attendances, followed by an 'other family member'. The types of violent behaviour within ambulance attendances for aggressors of other family violence are shown in Figure 79. The majority (73%) of these ambulance attendances involved the threat of violence.

Figure 78: Ambulance attendances for aggressors of other family violence by the relationship of the patient to the third party involved, Tasmania

Figure 79: Ambulance attendances for aggressors of other family violence, by type of violent behaviour, Tasmania



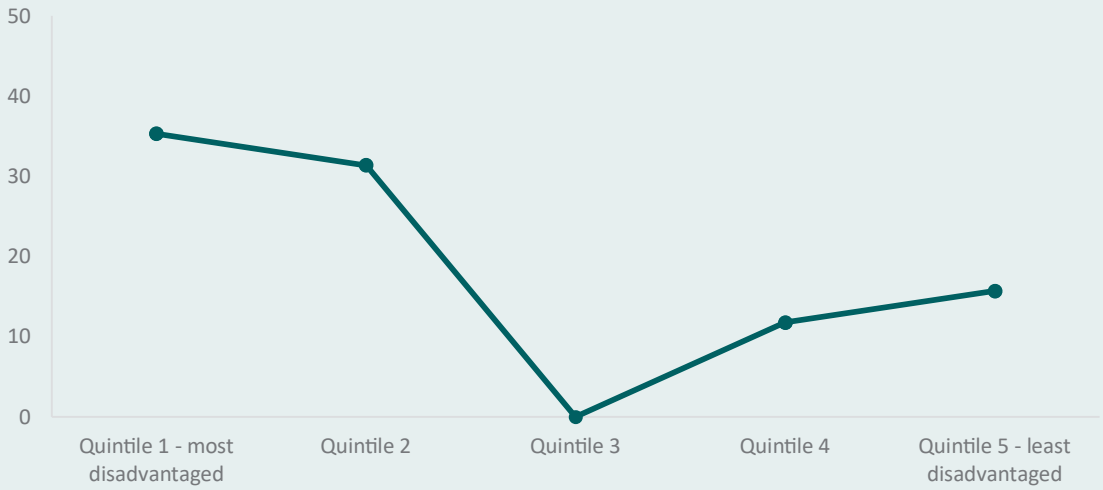
The characteristics of ambulance attendances for aggressors of other family violence are presented in Table 35. Those aged under 18 make up almost one-third of attendances for aggressors in other family violence, followed by those aged 18 to 29; collectively, these two age groups make up approximately 60 percent of all these attendances.

Table 35: Characteristics of ambulance attendances for aggressors of other family violence, Tasmania

		n	%
Gender	Male	31	60.8
	Female	20	39.2
	Other/unknown	0	0.0
Age group	Under 18	17	33.3
	18 to 29	15	29.4
	30 to 39	6	11.8
	40 to 49	5	9.8
	50 to 59	*n*<5	–
	60 and over	6	11.8
Location type	Private place	41	80.4
	Public place	9	17.6
	Unknown	*n*<5	–
Location	Indoors	45	88.2
	Outdoors	5	9.8
	Unknown	*n*<5	–
Police co-attendance	Not stated	19	37.3
	Yes	32	62.7
Transport to hospital	Not transported	6	11.8
	Transported	45	88.2

The socio-economic status in ambulance attendances for aggressors of other family violence is presented in Figure 80. There is a clear SES gradient evident, with those in the lowest quintile making up approximately one-third of these attendances.

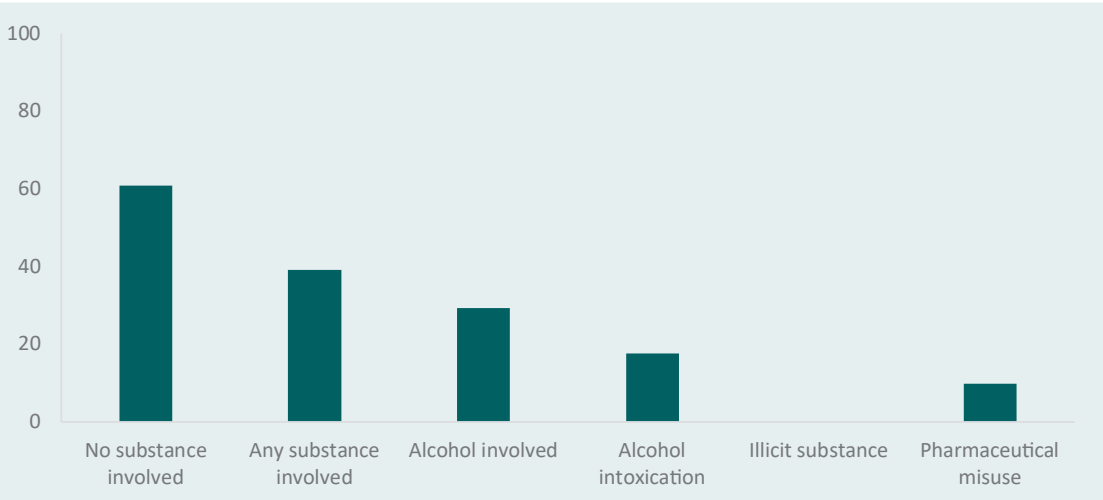
Figure 80: Ambulance attendances for aggressors of other family violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

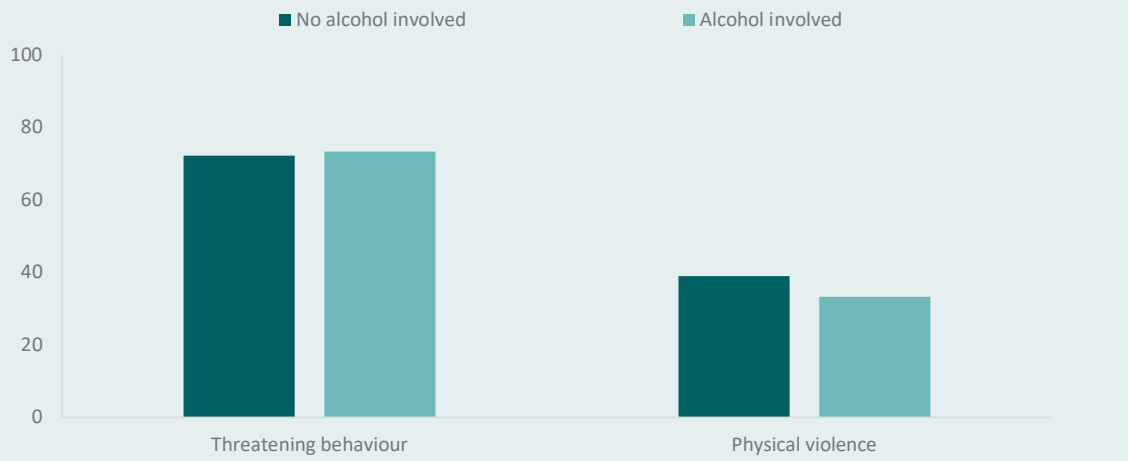
AOD involvement (including alcohol, illicit substances, and pharmaceutical misuse) for ambulance attendances for aggressors of other family violence is shown in Figure 81. Just over one-third of these ambulance attendances also involved a substance, predominantly alcohol (29%), with pharmaceutical misuse in approximately 10 percent of these attendances.

Figure 81: Ambulance attendances for aggressors of other family violence, by AOD, Tasmania



Characteristics of ambulance attendances for aggressors of other family violence, differentiated by alcohol involvement, could not be analysed because numbers were too low. The type of violence is shown in Figure 82. The proportion of attendances for males was higher when alcohol was involved (67%), compared with attendances without alcohol involvement (58%).

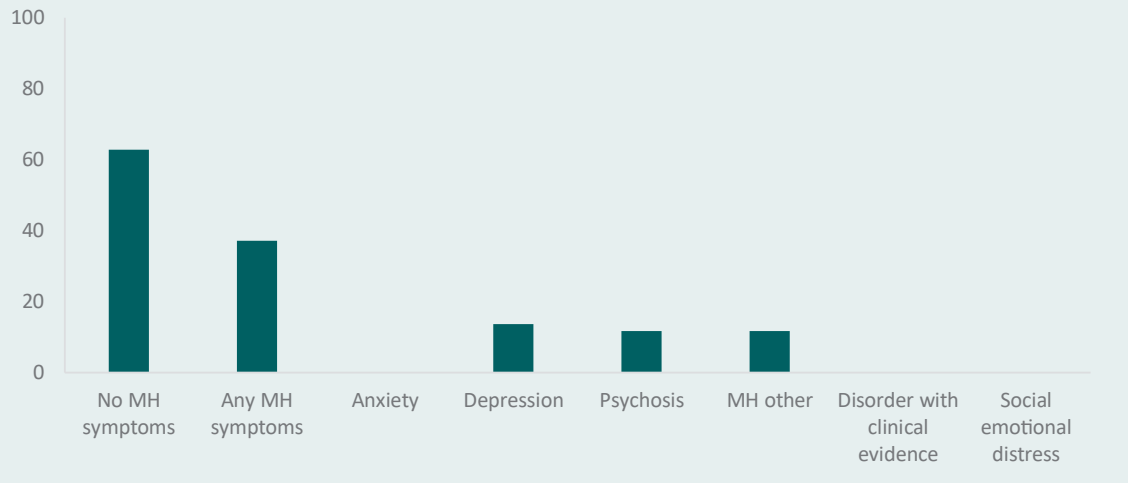
Figure 82: Ambulance attendances for aggressors of other family violence, by violent behaviour and alcohol involvement, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for aggressors of other family violence is shown in Figure 83. Approximately one-third of these attendances involved current mental health symptoms for the aggressor of the violence, most commonly symptoms of depression (14%).

Figure 83: Ambulance attendances for aggressors of other family violence, by current mental health symptoms, Tasmania



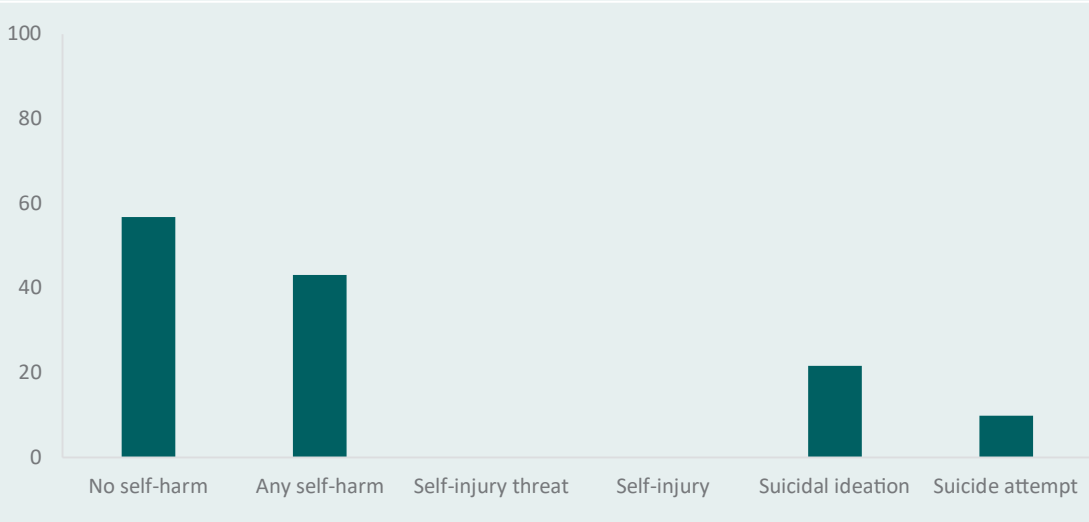
Characteristics of ambulance attendances for aggressors of other family violence, differentiated by current mental health symptom involvement, could not be analysed because numbers were too low. The type of violent behaviour is shown in Figure 84. The proportion of attendances for females was higher when mental health symptoms were present (53% vs 31%), as was the proportion of attendances for threatening behaviour (84% vs 66%). Because numbers were low, the medically induced mental health symptom sub-group was not separately analysed.

Figure 84: Ambulance attendances for aggressors of other family violence, by type of violent behaviour and current mental health symptoms, Tasmania

Self-harm involvement

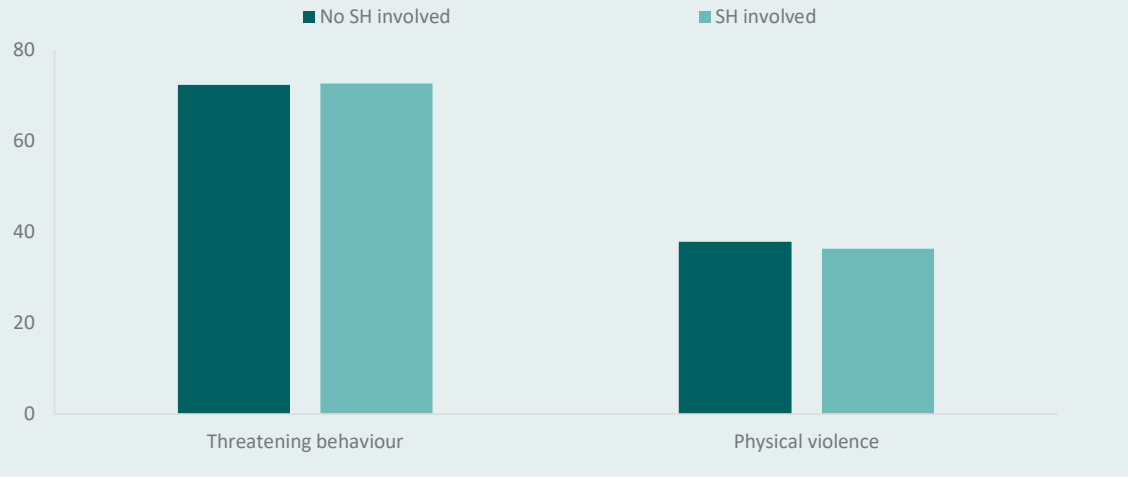
The involvement of self-harm in ambulance attendances for aggressors of other family violence is presented in Figure 85. Just under half of these attendances involved self-harm, most commonly suicidal ideation (22%).

Figure 85: Ambulance attendances for aggressors of other family violence, by self-harm, Tasmania



Characteristics of ambulance attendances for aggressors of other family violence, differentiated by self-harm involvement, could not be analysed because numbers were too low; however, the type of violence is shown in Figure 86. The proportion of attendances for females was higher when self-harm was present (50% vs 31%), but type of self-harm had a limited effect on the type of violent behaviour.

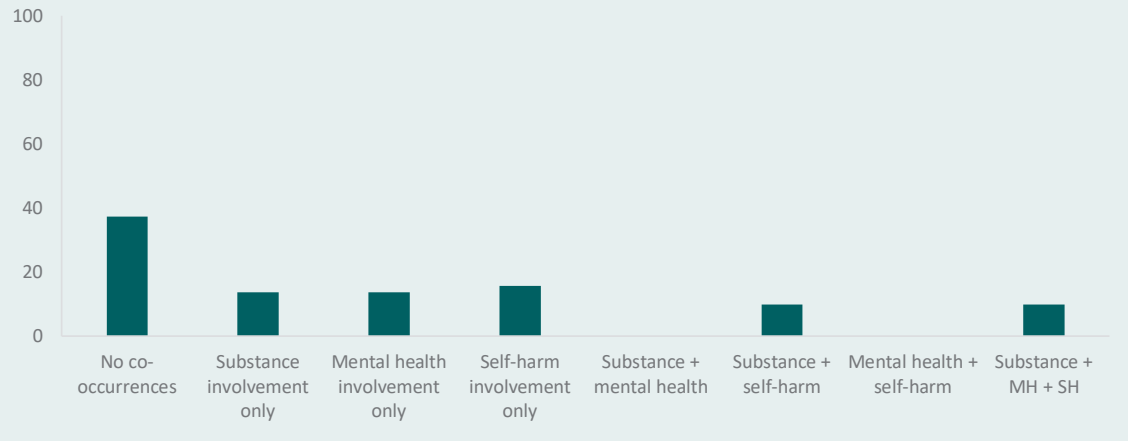
Figure 86: Ambulance attendances for aggressors of other family violence, by type of violent behaviour and self-harm, Tasmania



Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for aggressors of other family violence are shown in Figure 87. Just under two-thirds of these attendances had co-occurring issues for the aggressor in the violence, most commonly (16%) self-harm involvement only (ie no AOD involvement or current mental health symptoms).

Figure 87: Ambulance attendances for aggressors of other family violence, by co-occurring issues, Tasmania



Community violence—victims

The following tables and figures describe ambulance attendances for victims of community violence. These attendances relate to harms experienced by a person who was the victim of violence by a person who was not a family member or intimate partner. This could be a third party who was known to them or a stranger. There were 136 ambulance attendances for victims of community violence in Tasmania in the 2016–17 financial year. Of those 136, eight (6%) were coded as being both the victim and aggressor in the violence. A case study of this type of attendance is provided in Box 11.

Box 11: Case study of an ambulance attendance for a victim of community violence

Male Patient, Age 22

Attended at Public Place, Outdoors

Patient with no relevant medical or mental health history.

22 year-old male out drinking and intoxicated with friends. Patient states was assaulted by five men. Multiple punches to the face and left arm twisted behind patient's back—query loss of consciousness and/or head strike. Patient complaining of pain the left arm and face, bruising to right eye and epistaxis resolved before ambulance arrived. Patient spinally immobilised with collar on stretcher due to alcohol intoxication.

Overview

For ambulance attendances for victims of community violence, Figure 88 presents the relationship of the patient to the third party involved in the violent incident. 'Other known third party' was the predominant third party in attendances for victims of community violence, followed by a stranger to the person being attended. The types of violent behaviour in ambulance attendances for victims of community violence are shown in Figure 89. The majority of ambulance attendances were for victims of physical community violence (96%).

Figure 88: Ambulance attendances for victims of community violence, by the relationship of the patient to the third party involved, Tasmania

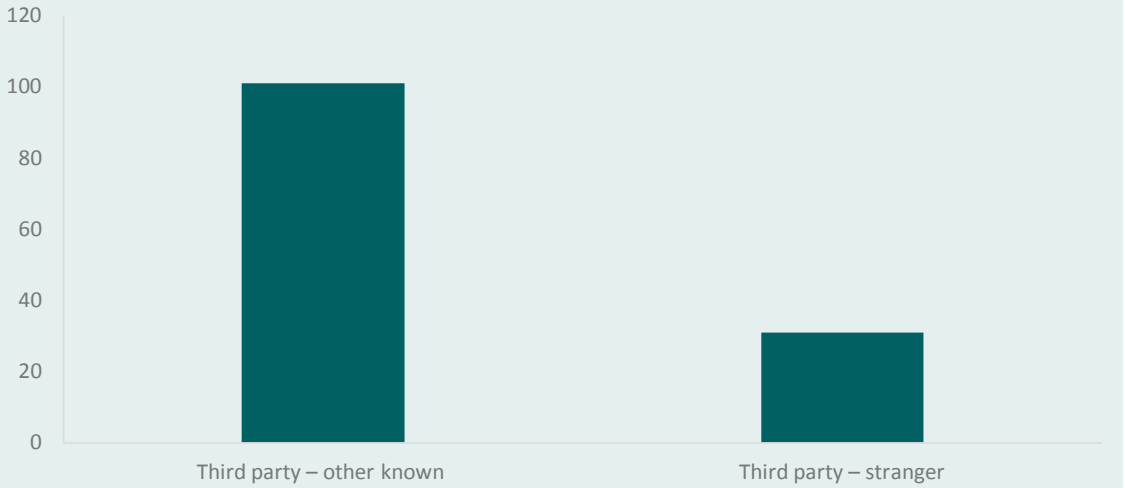
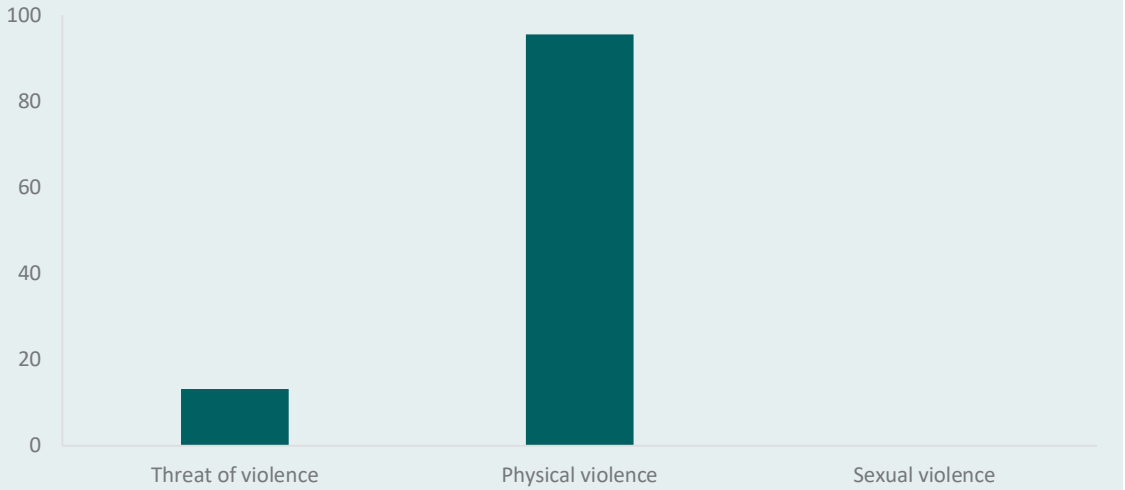


Figure 89: Ambulance attendances for victims of community violence, by type of violent behaviour, Tasmania

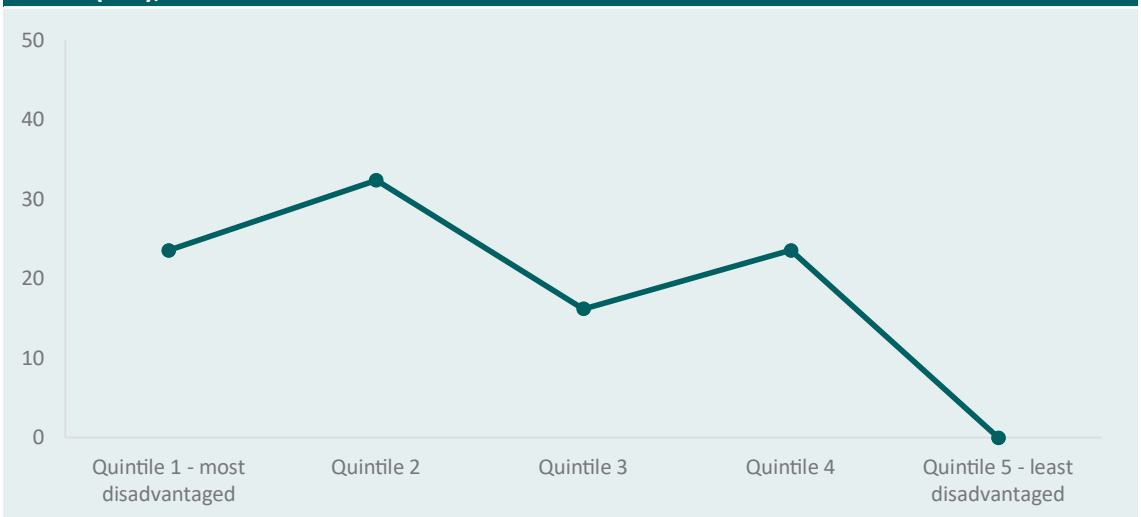


The characteristics of ambulance attendances for victims of community violence are presented in Table 36. Most victims of community violence were male (73%), with the 18 to 29 and 30 to 39 age groups forming the largest proportions (27% and 25%, respectively).

Table 36: Characteristics of ambulance attendances for victims of community violence, Tasmania			
		n	%
Gender	Male	99	72.8
	Female	37	27.2
	Other/unknown	0	0.0
Age group	Under 18	18	13.2
	18 to 29	36	26.5
	30 to 39	34	25.0
	40 to 49	24	17.6
	50 to 59	14	10.3
	60 and over	10	7.4
Location type	Private place	89	65.4
	Public place	47	34.6
	Unknown	0	0.0
Location	Indoors	91	66.9
	Outdoors	40	29.4
	Unknown	5	3.7
Police co-attendance	Not stated	66	48.5
	Yes	70	51.5
Transport to hospital	Not transported	42	30.9
	Transported	94	69.1

The socio-economic status in ambulance attendances for victims of community violence is presented in Figure 90. There is an overall SES gradient observed.

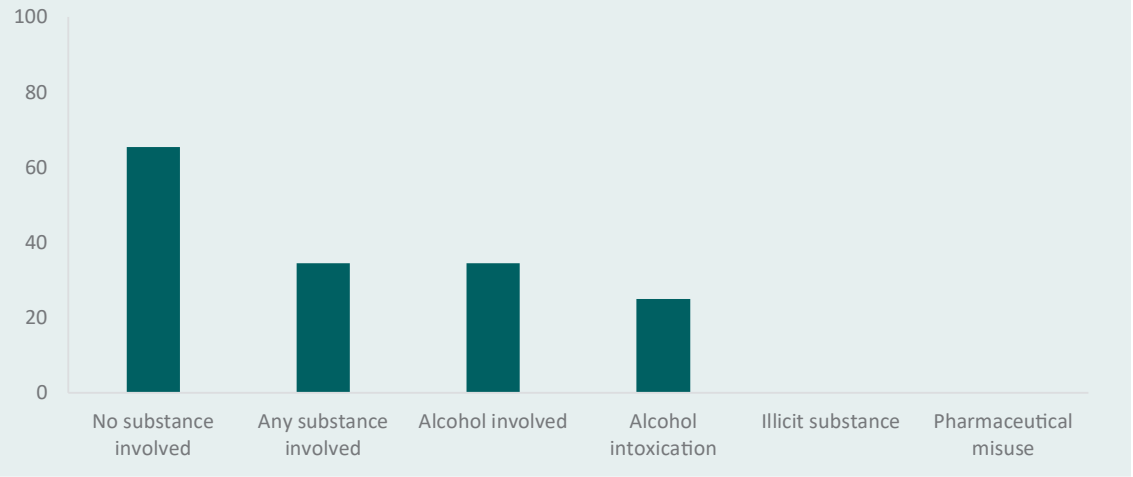
Figure 90: Ambulance attendances for victims of community violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

AOD involvement (including alcohol, illicit substances and pharmaceutical misuse) in ambulance attendances for victims of community violence is presented in Figure 91. Just over one-third of these ambulance attendances involved a substance—predominantly alcohol (35%). All of the attendances that involved AOD involved alcohol.

Figure 91: Ambulance attendances for victims of community violence, by AOD, Tasmania



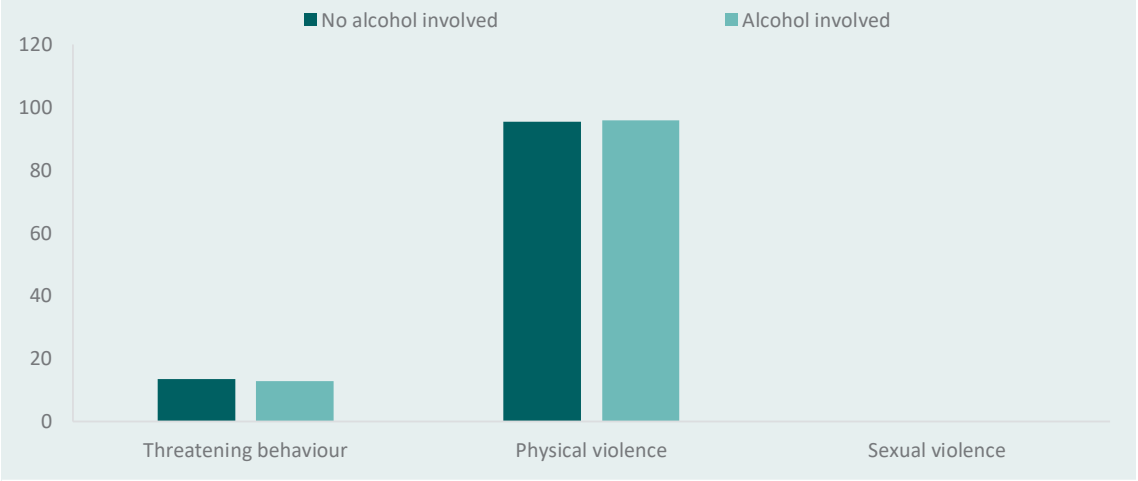
Numbers of attendances were too low to enable investigation of the specific substances involved; where ambulance attendances involved either illicit or pharmaceutical drugs, no substance had an $n \geq 5$.

Characteristics of ambulance attendances for victims of community violence, differentiated by alcohol involvement, are presented in Table 37, and Figure 92 shows the type of violent behaviour. Where alcohol was present, the percentage of those in the 18 to 29-year-old age group more than doubled (19% to 40%, $p=0.003$). Transport to hospital was higher when alcohol was involved (81% vs 63%, $p=0.031$).

Table 37: Characteristics of ambulance attendances for victims of community violence, by alcohol involvement, Tasmania

		No alcohol involved (*n*=89)		Alcohol involved (*n*=47)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	62	69.7	37	78.7	1.27
	Female	27	30.3	10	21.3	(0.259)
Age group	Under 18	18	20.2	0	0.0	17.63
	18 to 29	17	19.1	19	40.4	(0.003)
	30 to 39	19	21.3	15	31.9	
	40 to 49	17	19.1	7	14.9	
	50 to 59	11	12.4	*n*<5	–	
	60 and over	7	7.9	*n*<5	–	
SES	Quintile 1 (most disadvantaged)	22	24.7	10	21.3	1.18
	Quintile 2	29	32.6	15	31.9	(0.881)
	Quintile 3	14	15.7	8	17.0	
	Quintile 4	21	23.6	11	23.4	
	Quintile 5 (least disadvantaged)	*n*<5	–	0	0.0	
Location type	Private place	59	66.3	30	63.8	0.08
	Public place	30	33.7	17	36.2	(0.774)
	Unknown	0	0.0	0	0.0	
Location	Indoors	62	69.7	29	61.7	4.86
	Outdoors	22	24.7	18	38.3	(0.088)
	Unknown	5	5.6	0	0.0	
Police co-attendance	Not stated	45	50.6	21	44.7	0.43
	Yes	44	49.4	26	55.3	(0.514)
Transport to hospital	Not transported	33	37.1	9	19.1	4.63
	Transported	56	62.9	38	80.9	(0.031)

Figure 92: Ambulance attendances for victims of community violence, by type of violent behaviour and alcohol involvement, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for victims of community violence was analysed, and less than five percent of these attendances involved current mental health symptoms for the victim of the violence. Numbers were too low to enable investigation of the specific type of mental health symptoms or differentiation of attendances on the basis of current mental health symptoms. This includes the medically induced mental health symptom sub-group.

Self-harm involvement

Less than three percent of victims of community violence-related ambulance attendances also involved self-harm for the victim of the violence, and no further analysis of these attendances was performed.

Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for victims of community violence are shown in Figure 93. Approximately one-third of these attendances had co-occurring issues for the victim of the violence, most commonly AOD involvement only (ie no mental health symptoms or self-harm).

Figure 93: Ambulance attendances for victims of community violence, by co-occurring issues, Tasmania

Community violence—aggressors

The following tables and figures describe ambulance attendances for aggressors in community violence. These attendances relate to harms experienced by a person who was the aggressor in violence against a person who was not a family member or intimate partner. This could be a third party who was known to them, a stranger, a member of the police, or a paramedic. There were 198 violence-related ambulance attendances in Tasmania in the 2016–17 financial year associated with aggressors in community violence. Of those 198, eight (4%) were coded as being both the aggressor and the victim in the violence. A case study of this type of attendance is provided in Box 12.

Box 12: Case study of an ambulance attendance for an aggressor of community violence

Male Patient, Age 66

Attended at Supported Accommodation, Indoors, Police Co-attended

Patient with history of schizo-affective disorder, previous episodes of aggression and threatening behaviour, particularly towards ambulance officers.

66-year-old male, from supported accommodation. Assessment order completed by mental health clinician on scene for transfer to hospital. Patient has a strong history of schizo-affective disorder with numerous events of aggression and agitation towards other people over the last month. Patient stopped receiving his electro-convulsive therapy just prior to this as he was being threatening towards ambulance staff/taxi drivers and refusing to go. Staff state patient has thought others at the accommodation were there to harm him. Patient has not been eating or drinking for the past two days, causing significant weight loss. Patient physically aggressive towards accommodation staff members, swinging elbows and kicking them, police called to assist with transfer.

Overview

For ambulance attendances for aggressors of community violence, Figure 94 presents the relationship of the patient to the third party involved in the violent incident. Paramedics were the predominant third party in attendances for aggressors of community violence, followed by 'other known third party'. The types of violent behaviour within ambulance attendances for aggressors in community violence are shown in Figure 95. More than 80 percent of these attendances involved a threat of violence.

Figure 94: Ambulance attendances for aggressors of community violence by the relationship of the patient to the third party involved, Tasmania

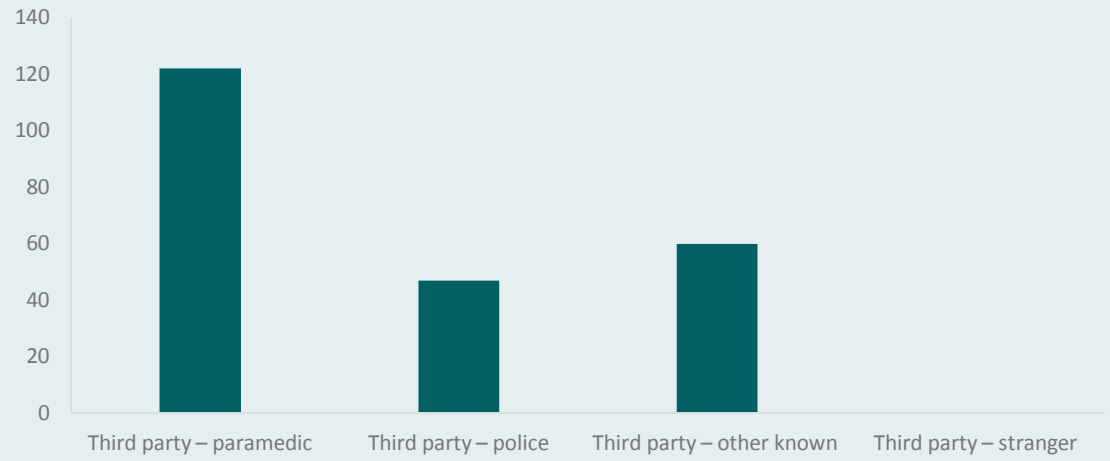
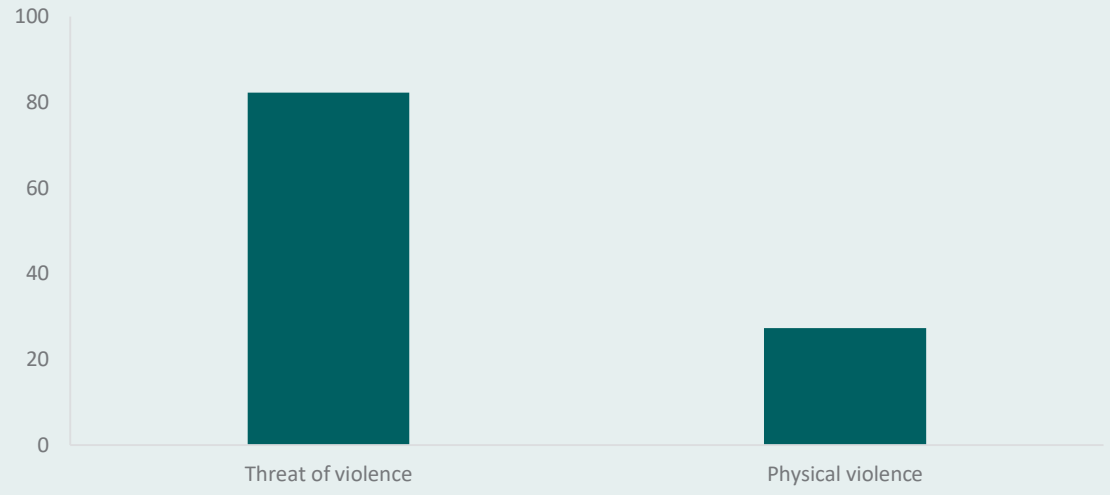


Figure 95: Ambulance attendances for aggressors of community violence, by type of violent behaviour, Tasmania



The characteristics in ambulance attendances for aggressors in community violence are presented in Table 38. Males make up approximately 60 percent of attendances where an individual was the aggressor in community violence. The two age groups with the highest percentages of being the aggressor in community violence are 18 to 29 years (28%) and 60 years and over (22%). Police co-attended just over 40 percent of these attendances.

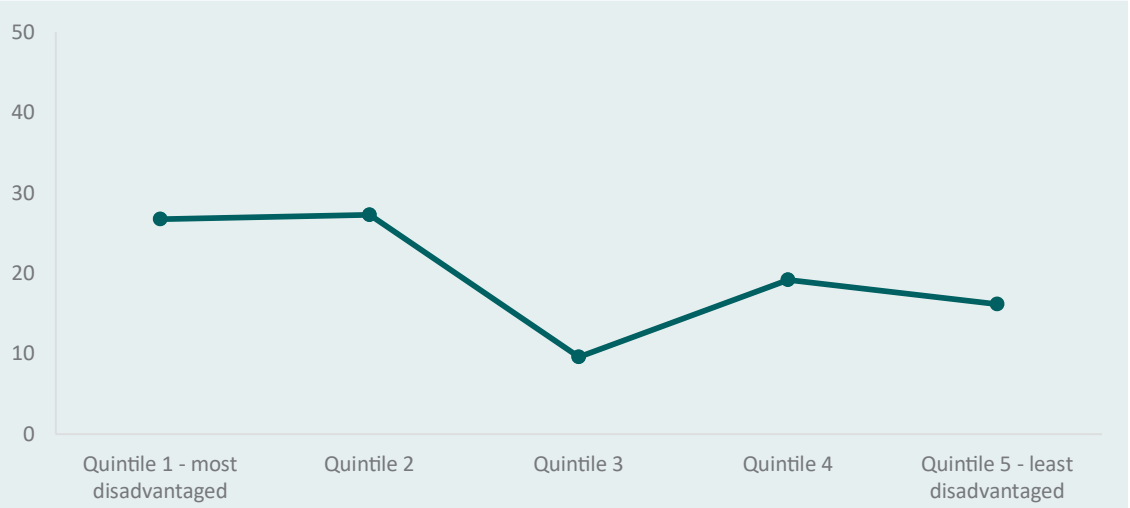
The high proportion of attendances for those aged over 60 years was an unexpected result. Upon additional analysis, it was found to be associated with medically induced mental health symptoms. This sub-group is, therefore, analysed separately in the sub-section titled *Ambulance attendances featuring violence and medically induced mental health symptoms.*

Table 38: Characteristics of ambulance attendances for aggressors of community violence, Tasmania

		n	%
Gender	Male	124	62.6
	Female	73	36.9
	Other/unknown	*n*<5	–
Age group	Under 18	13	6.6
	18 to 29	56	28.3
	30 to 39	31	15.7
	40 to 49	26	13.1
	50 to 59	28	14.1
	60 and over	44	22.2
Location type	Private place	127	64.1
	Public place	66	33.3
	Unknown	5	2.5
Location	Indoors	157	79.3
	Outdoors	34	17.2
	Unknown	7	3.5
Police co-attendance	Not stated	116	58.6
	Yes	82	41.4
Transport to hospital	Not transported	57	28.8
	Transported	141	71.2

The socio-economic status in ambulance attendances for aggressors in community violence is presented in Figure 96. There is a slight SES gradient visible in these attendances.

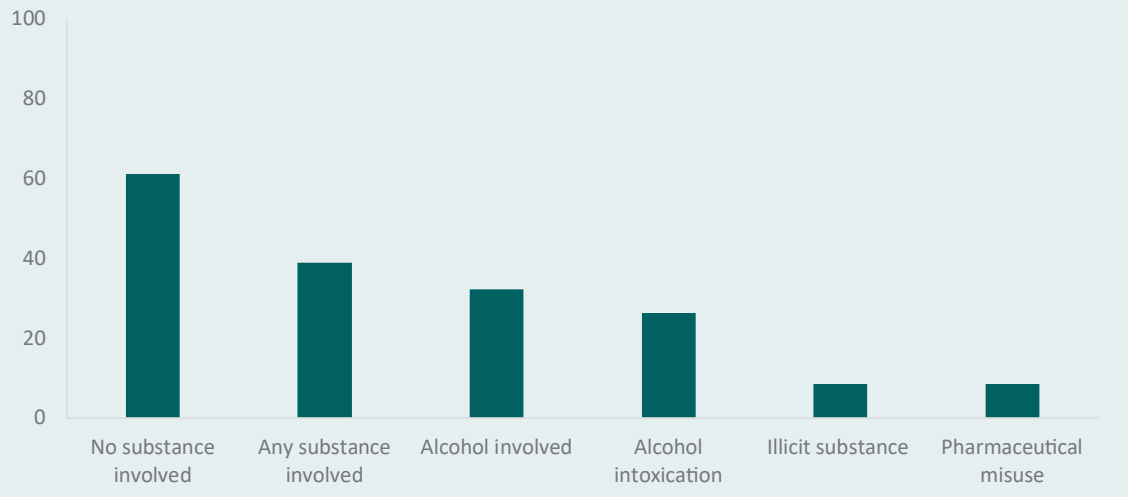
Figure 96: Ambulance attendances for aggressors of community violence, by socio-economic status (SES), Tasmania



Alcohol and other drug involvement

AOD involvement (alcohol, illicit substances and pharmaceutical misuse) for ambulance attendances for aggressors in community violence is presented in Figure 97. Just under 40 percent of these ambulance attendances involved AOD, predominantly alcohol (32%), with illicit substances and pharmaceutical misuse both involved in less than 10 percent of these ambulance attendances. The sub-group of medically induced mental health symptoms had a very low involvement of AOD (*n*<5); because they were not affecting the overall trends, they have been analysed together.

Figure 97: Ambulance attendances for aggressors of community violence, by AOD involvement, Tasmania



Where ambulance attendances for aggressors in community violence involved either illicit or pharmaceutical drugs, the specific substances involved are shown in Table 39. The most common illicit substances associated with ambulance attendances for aggressors in community violence were amphetamines (5%) and cannabis (3%). Benzodiazepines were the most commonly misused pharmaceuticals in these attendances (3%).

Table 39: Ambulance attendances for aggressors of community violence, by individual substances, Tasmania

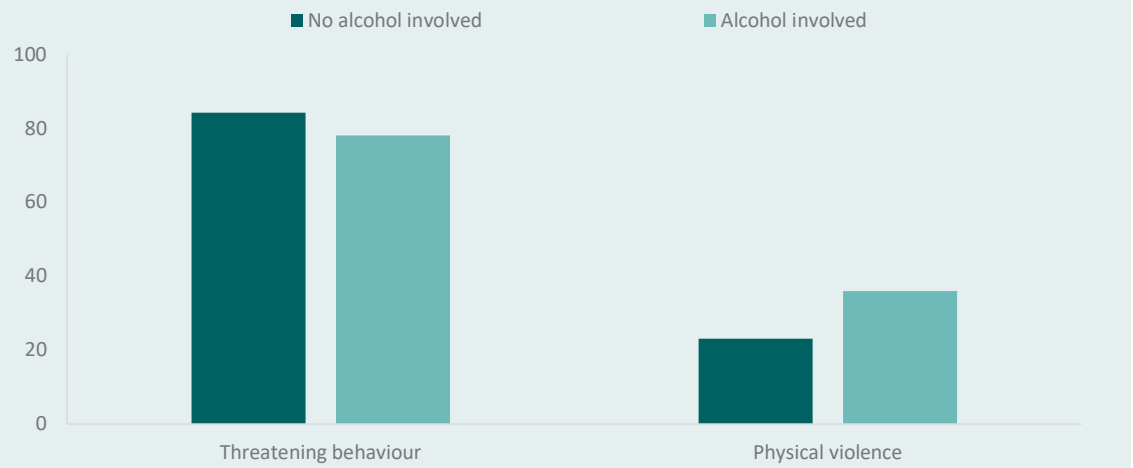
		n	%
Illicit drugs	No illicit substance	181	91.4
	Any illicit substance	17	8.6
	Amphetamine	9	4.5
	Cannabis	6	3.0
	Synthetic cannabinoids	0	0.0
	Cocaine	0	0.0
	Ecstasy	*n*<5	–
	GHB	0	0.0
	Heroin	0	0.0
	Ketamine	0	0.0
	LSD	0	0.0
	Inhalants	0	0.0
Pharmaceutical drugs	No pharmaceutical misuse	181	91.4
	Any pharmaceutical misuse	17	8.6
	Anti-convulsant	*n*<5	–
	Anti-depressant	*n*<5	–
	Anti-psychotic	*n*<5	–
	Benzodiazepine	6	3.0
	Opioid analgesic	*n*<5	–
	Other analgesic	*n*<5	–
	Opioid replacement therapy	0	0.0
	Pharmaceutical stimulant	0	0.0
	Other medication	*n*<5	–

Characteristics of ambulance attendances for aggressors in community violence, differentiated by alcohol involvement, are presented in Table 40, and Figure 98 shows the type of violence. The proportion of physical violence was higher when alcohol was involved (36%), compared with attendances with no alcohol involvement (23%). The 60 and over age group percentage was higher when no alcohol was involved (29% vs 8%, p=0.005).

Table 40: Characteristics of ambulance attendances for aggressors of community violence, by alcohol involvement, Tasmania

		No alcohol involved (*n*=134)		Alcohol involved (*n*=64)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	84	62.7	40	62.5	0.49
	Female	49	36.6	24	37.5	(0.783)
Age group	Under 18	11	8.2	*n*<5	–	16.55
	18 to 29	35	26.1	21	32.8	(0.005)
	30 to 39	20	14.9	11	17.2	
	40 to 49	15	11.2	11	17.2	
	50 to 59	14	10.4	14	21.9	
	60 and over	39	29.1	5	7.8	
SES	Quintile 1 (most disadvantaged)	39	29.1	14	21.9	2.23
	Quintile 2	34	25.4	20	31.3	(0.693)
	Quintile 3	11	8.2	8	12.5	
	Quintile 4	26	19.4	12	18.8	
	Quintile 5 (least disadvantaged)	22	16.4	10	15.6	
Location type	Private place	83	61.9	44	68.8	1.04
	Public place	47	35.1	19	29.7	(0.595)
	Unknown	*n*<5	–	*n*<5	–	
Location	Indoors	111	82.8	46	71.9	4.08
	Outdoors	18	13.4	16	25.0	(0.130)
	Unknown	5	3.7	*n*<5	–	
Police co-attendance	Not stated	83	61.9	33	51.6	1.92
	Yes	51	38.1	31	48.4	(0.166)
Transport to hospital	Not transported	43	32.1	14	21.9	2.20
	Transported	91	67.9	50	78.1	(0.138)

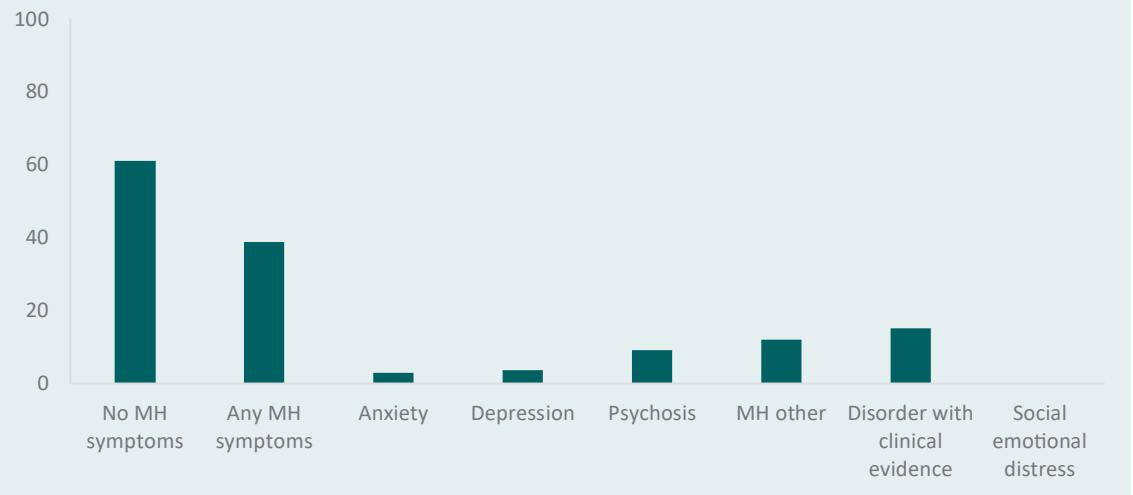
Figure 98: Ambulance attendances for aggressors of community violence, by type of violent behaviour and alcohol involvement, Tasmania



Mental health involvement

The involvement of current mental health symptoms in ambulance attendances for aggressors in community violence is presented in Figure 99. Less than 40 percent of these attendances involved current mental health symptoms for the aggressor of the violence, most commonly medically induced mental health symptoms (15%) or unspecified mental health symptoms (12%).

Figure 99: Ambulance attendances for aggressors of community violence, by current mental health symptoms, Tasmania

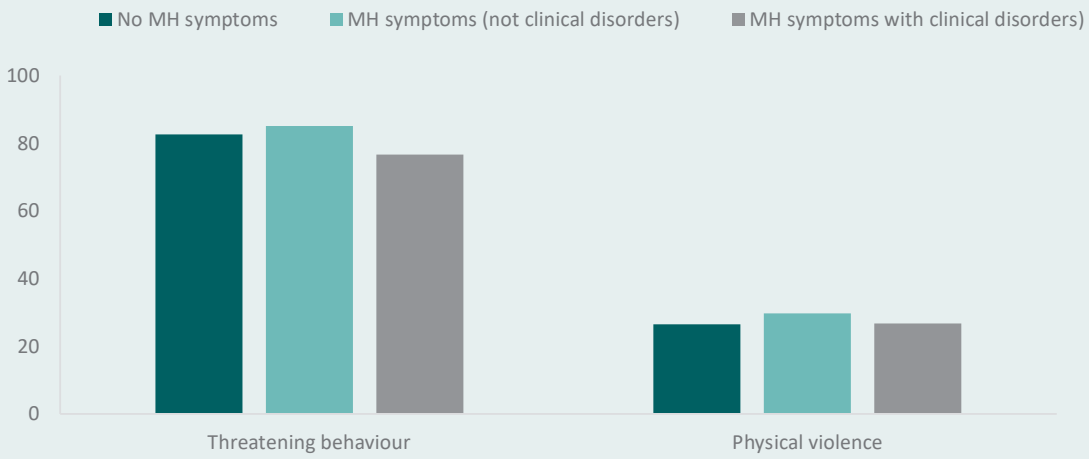


Characteristics of ambulance attendances for aggressors in community violence, differentiated by current mental health symptom involvement, are shown in Table 41. Figure 100 shows the type of violent behaviour. Current mental health symptoms, including medically induced symptoms, had a limited effect on the type of violent behaviour, but the percentage of attendances for people in the 60 and over age group was higher when medically induced mental health symptoms were present (73% vs 18% and 13%, p=0.006).

Table 41: Characteristics of ambulance attendances for aggressors of community violence, by current mental health symptom (MHS), Tasmania

		No MHS (*n*=121)		MHS—not medically induced (*n*=47)		Medically induced MHS (*n*=30)		
		n	%	*n*	%	*n*	%	χ^2 (*p* value)
Gender	Male	78	64.5	24	51.1	22	73.3	7.00 (0.136)
	Female	43	35.5	22	46.8	8	26.7	
Age group	Under 18	10	8.3	*n*<5	–	*n*<5	–	24.54 (0.006)
	18 to 29	37	30.6	15	31.9	*n*<5	–	
	30 to 39	20	16.5	8	17.0	*n*<5	–	
	40 to 49	13	10.7	10	21.3	*n*<5	–	
	50 to 59	19	15.7	6	12.8	*n*<5	–	
	60 and over	22	18.2	6	12.8	22	73.3	
SES	Quintile 1 (most disadvantaged)	35	28.9	10	21.3	8	26.7	9.33 (0.315)
	Quintile 2	33	27.3	15	31.9	6	20.0	
	Quintile 3	12	9.9	6	12.8	*n*<5	–	
	Quintile 4	21	17.4	11	23.4	6	20.0	
	Quintile 5 (least disadvantaged)	19	15.7	*n*<5	–	9	30.0	
Location type	Private place	81	66.9	34	72.3	12	40.0	14.11 (0.007)
	Public place	35	28.9	13	27.7	18	60.0	
	Unknown	5	4.1	0	0.0	0	0.0	
Location	Indoors	91	75.2	42	89.4	24	80.0	4.89 (0.299)
	Outdoors	24	19.8	5	10.6	5	16.7	
	Unknown	6	5.0	0	0.0	*n*<5	–	
Police co-attendance	Not stated	73	60.3	22	46.8	21	70.0	4.45 (0.108)
	Yes	48	39.7	25	53.2	9	30.0	
Transport to hospital	Not transported	49	40.5	*n*<5	–	5	16.7	21.75 (<0.001)
	Transported	72	59.5	44	93.6	25	83.3	

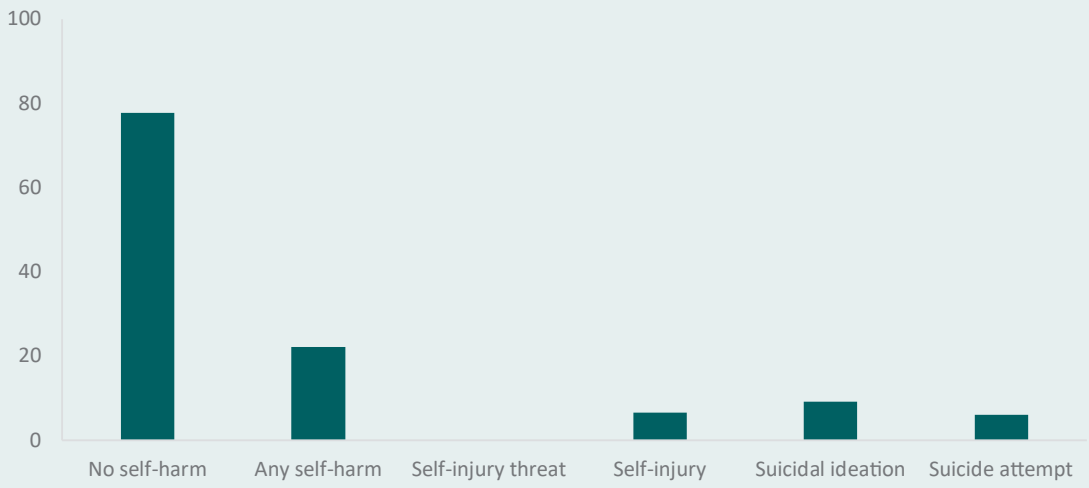
Figure 100: Ambulance attendances for aggressors of community violence, by type of violent behaviour and current mental health symptoms, Tasmania



Self-harm involvement

The involvement of self-harm in ambulance attendances for aggressors in community violence is presented in Figure 101. Less than one-quarter of these attendances involved self-harm; of these, the most common was suicidal ideation (9%). The sub-group of medically induced mental health symptoms had no self-harm (*n*=0).

Figure 101: Ambulance attendances for aggressors of community violence, by self-harm, Tasmania



Characteristics of ambulance attendances for aggressors in community violence, differentiated by self-harm involvement, are presented in Table 42, and Figure 102 shows the type of violent behaviour. The percentage of females was higher when self-harm was present (48% vs 34%, *p*=0.034), but the presence of self-harm had a limited effect on the type of violent behaviour. Proportions of police co-attendance were higher when self-harm was present (61% vs 36%, *p*=0.002), as was transport to hospital (96% vs 64%, *p*<0.001), compared with attendances with no self-harm.

Table 42: Characteristics of ambulance attendances for aggressors of community violence, by self-harm, Tasmania

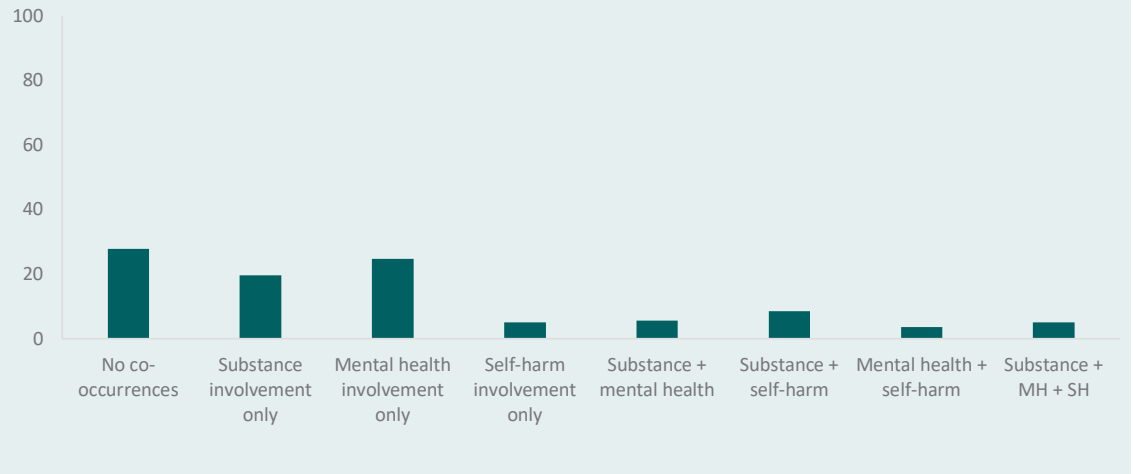
		No self-harm (*n*=154)		Self-harm (*n*=44)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	102	66.2	22	50.0	6.75
	Female	52	33.8	21	47.7	(0.034)
Age group	Under 18	9	5.8	*n*<5	–	14.95
	18 to 29	44	28.6	12	27.3	(0.011)
	30 to 39	23	14.9	8	18.2	
	40 to 49	15	9.7	11	25.0	
	50 to 59	21	13.6	7	15.9	
	60 and over	42	27.3	*n*<5	–	
SES	Quintile 1 (most disadvantaged)	46	29.9	7	15.9	5.81
	Quintile 2	40	26.0	14	31.8	(0.213)
	Quintile 3	12	7.8	7	15.9	
	Quintile 4	28	18.2	10	22.7	
	Quintile 5 (least disadvantaged)	26	16.9	6	13.6	
Location type	Private place	95	61.7	32	72.7	7.59
	Public place	57	37.0	9	20.5	(0.022)
	Unknown	*n*<5	–	*n*<5	–	
Location	Indoors	122	79.2	35	79.5	2.14
	Outdoors	28	18.2	6	13.6	(0.344)
	Unknown	*n*<5	–	*n*<5	–	
Police co-attendance	Not stated	99	64.3	17	38.6	9.28
	Yes	55	35.7	27	61.4	(0.002)
Transport to hospital	Not transported	55	35.7	*n*<5	–	16.22
	Transported	99	64.3	42	95.5	(<0.001)

Figure 102: Ambulance attendances for aggressors of community violence, by violent behaviour and self-harm, Tasmania

Interactions between co-occurring issues

The interactions between co-occurring issues (violence, AOD use, mental health symptoms and self-harm) in ambulance attendances for aggressors of community violence are shown in Figure 103. Just over 75 percent of aggressors in community violence-related ambulance attendances had co-occurring issues for the aggressor in the violence, most commonly mental health involvement only (25%; ie no AOD involvement or self-harm), followed by AOD involvement only (20%).

Figure 103: Ambulance attendances for aggressors of community violence, by co-occurring issues, Tasmania



Ambulance attendances featuring violence and medically induced mental health symptoms

Individuals who were the aggressor of violence, in the context of medically induced mental health symptoms, have been further analysed as a sub-group, because they present distinct differences in demographics and violence characteristics. People in this group were identified as experiencing a medically induced mental health symptom, and this may include transient symptoms (eg delirium associated with a fever, or symptoms arising from hypoxia) or symptoms associated with a chronic disorder (eg dementia) or neurodevelopmental disorder (eg autism spectrum disorder). This analysis has been completed using Victorian data only, because of low numbers in the Tasmanian dataset, but patterns are similar between the states.

It cannot be definitively stated that the mental health symptoms are causal to the violence; they are simply co-occurring within an attendance.

Ambulance attendances for aggressors of intimate partner violence

Of the 383 ambulance attendances for aggressors of intimate partner violence, 39 (10%) were for individuals who were identified as having a medically induced mental health symptom. Characteristics of the attendance, comparing those with and without a medically induced mental health symptom, are shown in Table 43.

The proportion of males who were the aggressor in intimate partner violence was higher when medically induced mental health symptoms were present (67% vs 54%, p=0.003), and the majority in this group (90%) were aged over 60 (p<0.001). Medically induced mental health symptoms did not affect the violent behaviour type; however, there were very few co-occurrences of AOD or self-harm in this group. The majority (82%) had a history of dementia, and most (62%) attendances occurred indoors, in a private residence. Police co-attendance was lower when medically induced mental health were present (44% vs 73%, p<0.001).

Table 43: Characteristics of ambulance attendances for aggressors in intimate partner violence, by medically induced mental health symptoms (MHS), Tasmania						
		No medically induced MHS (*n*=344)		Medically induced MHS (*n*=39)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	184	53.5	26	66.7	11.86
	Female	160	46.5	12	30.8	(0.003)
Age group	Under 18	12	3.5	*n*<5	–	92.13
	18 to 29	91	26.5	*n*<5	–	(<0.001)
	30 to 39	83	24.1	0	0.0	
	40 to 49	57	16.6	0	0.0	
	50 to 59	36	10.5	*n*<5	–	
	60 and over	65	18.9	35	89.7	
Violent behaviour	Threat of violence	239	69.5	26	66.7	N/A
	Physical violence	135	39.2	16	41.0	
Clinical history	Dementia	10	2.9	32	82.1	N/A
	Brain injury	7	2.0	*n*<5	–	
	Developmental disorder	11	3.2	*n*<5	–	
	Intellectual impairment	*n*<5	–	*n*<5	–	
Co-occurrences	Substance involved	137	39.8	*n*<5	–	N/A
	Self-harm involved	132	38.4	*n*<5	–	
Location type	School	*n*<5	–	0	0.0	14.00
	Vehicle	*n*<5	–	0	0.0	(0.667)
	Workplace	*n*<5	–	0	0.0	
	Hospital	*n*<5	–	*n*<5	–	
	Other	6	1.7	0	0.0	
	Custodial facility	*n*<5	–	0	0.0	
	General practice	10	2.9	*n*<5	–	
	Hospital A&E	*n*<5	–	0	0.0	
	Nursing home/Supported care	*n*<5	–	*n*<5	–	
	Police station	16	4.7	0	0.0	
	Private residence	58	16.9	8	20.5	
	Private—indoors	159	46.2	24	61.5	
	Private—outdoors	50	14.5	*n*<5	–	
	Public place	24	7.0	*n*<5	–	
	Public transport	*n*<5	–	0	0.0	
	Sporting facility	*n*<5	–	0	0.0	
	Street/car park	7	2.0	0	0.0	
	Psychiatric facility	*n*<5	–	0	0.0	
Police co-attendance	Not stated	93	27.0	22	56.4	14.39
	Yes	251	73.0	17	43.6	(<0.001)
Transport to hospital	Not transported	69	20.1	*n*<5	N/A	3.51
	Transported	275	79.9	36	92.3	(0.061)

Ambulance attendances for aggressors of other family violence

Of the 999 ambulance attendances for aggressors of other family violence, 49 (5%) were for individuals who were identified as having medically induced mental health symptoms. Characteristics of the attendance, comparing those with and without medically induced mental health symptoms, are presented in Table 44.

When medically induced mental health symptoms were present, two age groups were predominant: those aged under 18 (43%) and over 60 (43%) (p<0.001). The presence of medically induced mental health symptoms increased the percentage of physical violence (43% vs 35%); however, there were very few occurrences of AOD or self-harm in this group. Large proportions had a history of developmental disorder (47%) or dementia (39%). Violence against a child was higher when medically induced mental health symptoms were present (25% vs 14%), although violence against a parent was the largest proportion of these attendances (45%). The majority (53%) of attendances occurred indoors in a private residence. Police co-attendance was lower when medically induced mental health symptoms were present (61% vs 78%, p=0.08).

Table 44: Characteristics of ambulance attendances for aggressors in other family violence, by medically induced mental health symptoms (MHS), Tasmania

		No medically induced MHS (n=950)		Medically induced MHS (n=49)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	538	56.6	29	59.2	0.22
	Female	410	43.2	20	40.8	(0.898)
Age group	Under 18	292	30.7	21	42.9	103.56
	18 to 29	283	29.8	*n*<5	–	(<0.001)
	30 to 39	172	18.1	*n*<5	–	
	40 to 49	94	9.9	*n*<5	–	
	50 to 59	53	5.6	*n*<5	–	
	60 and over	56	5.9	21	42.9	
Violent behaviour	Threat of violence	680	71.6	31	63.3	N/A
	Physical violence	334	35.2	21	42.9	
Clinical history	Dementia	9	0.9	19	38.8	N/A
	Brain injury	19	2.0	*n*<5	–	
	Developmental disorder	146	15.4	23	46.9	
	Intellectual impairment	41	4.3	*n*<5	–	
Co-occurrences	Substance involved	209	22.0	*n*<5	–	N/A
	Self-harm involved	371	39.1	*n*<5	–	
Third party	Parent	552	58.1	22	44.9	N/A
	Child	129	13.6	12	24.5	
	Minor child	44	4.6	0	0.0	
	Other family	381	40.1	16	32.7	

Table 44: Characteristics of ambulance attendances for aggressors in other family violence, by medically induced mental health symptoms (MHS), Tasmania (Cont.)

		No medically induced MHS (*n*=950)		Medically induced MHS (*n*=49)		
		n	%	*n*	%	χ^2 (*p* value)
Location type	School	6	0.6	0	0.0	46.53
	Workplace	*n*<5	–	*n*<5	–	(<0.001)
	Hospital	*n*<5	–	0	0.0	
	Other	8	0.8	*n*<5	–	
	Custodial facility	*n*<5	–	0	0.0	
	General practice	12	1.3	0	0.0	
	Hospital A&E	*n*<5	–	0	0.0	
	Nursing home/Supported care	6	0.6	*n*<5	–	
	Police station	35	3.7	0	0.0	
	Private residence	144	15.2	12	24.5	
	Private—indoors	541	56.9	26	53.1	
	Private—outdoors	119	12.5	*n*<5	–	
	Public place	39	4.1	*n*<5	–	
	Public transport	*n*<5	–	0	0.0	
	Sporting facility	*n*<5	–	0	0.0	
	Street/car park	24	2.5	0	0.0	
Police co-attendance	Not stated	213	22.4	19	38.8	6.99
	Yes	737	77.6	30	61.2	(0.008)
Transport to hospital	Not transported	125	13.2	11	22.4	3.42
	Transported	825	86.8	38	77.6	(0.064)

Ambulance attendances for aggressors of community violence

Of the 2,602 ambulance attendances for aggressors of community violence, 301 (12%) were for those experiencing medically induced mental health symptoms. Characteristics of the attendance, comparing those with and without medically induced mental health symptoms, are shown in Table 45.

When medically induced mental health symptoms were present, the predominant age group was those aged over 60 (83%, $p<0.001$). The presence of medically induced mental health symptoms was related to a higher percentage of physical violence (55% vs 33%); however, there were very few co-occurrences of AOD or self-harm in this group. Almost all had a history of dementia (97%). Almost all of these attendances involved violence against a third party who was known to them (97%). The majority (71%) of attendances occurred in a nursing home or supported residence. Police co-attendance was significantly lower when medically induced mental health symptoms associated were present (32% vs 72%, $p<0.001$).

Table 45: Characteristics of ambulance attendances for aggressors in community violence, by medically induced mental health symptoms (MHS) Tasmania

		No medically induced MHS (*n*=2,301)		Medically induced MHS (*n*=301)		
		n	%	*n*	%	χ^2 (*p* value)
Gender	Male	1,410	61.3	183	60.8	0.56 (0.755)
	Female	887	38.5	118	39.2	
Age group	Under 18	195	8.5	11	3.7	726.82 (<0.001)
	18 to 29	574	24.9	15	5.0	
	30 to 39	448	19.5	6	2.0	
	40 to 49	511	22.2	6	2.0	
	50 to 59	241	10.5	13	4.3	
	60 and over	332	14.4	250	83.1	
Violent behaviour	Threat of violence	1,768	76.8	171	56.8	N/A
	Physical violence	755	32.8	166	55.1	
Clinical history	Dementia	63	2.7	243	80.7	N/A
	Brain injury	91	4.0	21	7.0	
	Developmental disorder	125	5.4	21	7.0	
	Intellectual impairment	97	42	11	3.7	
Co-occurrences	Substance involved	1,002	43.5	9	3.0	N/A
	Self-harm involved	702	30.5	11	3.7	
Third party	Known person	969	42.1	292	97.0	N/A
	Stranger	114	5.0	*n*<5	–	
	Police	717	31.2	14	4.7	
	Paramedic	1,038	45.1	54	17.9	
Location type	School	36	1.6	*n*<5	–	643.46 (<0.001)
	Vehicle	*n*<5	–	0	0.0	
	Workplace	11	0.5	*n*<5	–	
	Hospital	32	1.4	8	2.7	
	Other	76	3.3	23	7.6	
	Custodial facility	11	0.5	0	0.0	
	General practice	40	1.7	*n*<5	–	

Table 45: Characteristics of ambulance attendances for aggressors in community violence, by medically induced mental health symptoms (MHS) Tasmania (Cont.)						
		No medically induced MHS (*n*=2,301)		Medically induced MHS (*n*=301)		
		n	%	*n*	%	χ^2 (*p* value)
Location type (Cont.)	Hospital A&E	17	0.7	*n*<5	–	
	Nursing home/Supported care	288	12.5	214	71.1	
	Police station	105	4.6	*n*<5	–	
	Private residence	298	13.0	17	5.6	
	Private—indoors	628	27.3	18	6.0	
	Private—outdoors	221	9.6	*n*<5	–	
	Public place	314	13.6	6	2.0	
	Public transport	53	2.3	*n*<5	–	
	Sporting facility	8	0.3	0	0.0	
	Street/car park	131	5.7	*n*<5	–	
	Psychiatric facility	*n*<5	–	0	0.0	
Police co-attendance	Not stated	645	28.0	204	67.8	191.26 (<0.001)
	Yes	1,656	72.0	97	32.2	
Transport to hospital	Not transported	412	17.9	41	13.6	3.40 (0.065)
	Transported	1,889	82.1	260	86.4	

Conclusion

This study piloted and established coded ambulance records as a robust, detailed data source for population surveillance of family and community violence. This methodology could be routinely used to capture information about violence across society. The data can provide details of ambulance patients who were affected by (victims), or were the perpetrator (aggressor) in, a violent incident. These data limit the problems generated by recall bias. Because of the universal nature of ambulance services, they are more likely to capture vulnerable and hard-to-reach populations. Nevertheless, limitations to this means of data collection exist. Data are based on the coding of clinical records, which are collected for operational, not research, purposes; this may influence the results. For example, recording of information is dependent on paramedics' professional judgement of patients' treatment needs. Further, information about similar cases may not be consistently recorded by different paramedics or over time. Additionally, because the incident has required emergency treatment, these data may represent a severe level of harm, and findings should be considered within this frame. As in all surveillance systems, the nature of the data means that causality cannot be established. However, where violence, mental health and AOD issues are identified, they can be recognised as acutely co-occurring issues.

For this pilot study, ambulance attendance data from both Victoria and Tasmania were used. These were reported separately for the majority of the report, because the relatively small numbers in Tasmania (because of its smaller population size) would be dominated by numbers in Victoria if the results were pooled. The benefit of this approach is that it allowed comparison of ambulance attendance data between states that did and did not undertake primary filtering before data were coded. The patterns of attendances were highly consistent between Victoria and Tasmania, with similar percentages of attendances coded as related to AOD, mental health, self-harm or violence across the jurisdictions. This suggests that the primary filtering undertaken in Victoria did not substantially skew the violence-related ambulance attendance data.

In Victoria and Tasmania, in the 2016–17 financial year, we found that eight percent of ambulance attendances in the dataset were violence-related, and a large proportion of violence-related ambulance attendances involved one or more of the following factors: AOD, mental health or self-harm. However, the degree to which these factors co-occurred, and the relative involvement of each, differed on the basis of violence type. Across both states and all violence types (intimate partner, other family, or community violence), attendances for victims of violence were typically related to violence only or to violence with co-occurring AOD use. This suggests that, while being the victim of violence may be chronically associated with increased risk of mental health issues and/or self-harm (Devries et al. 2013; Rees et al. 2014), these issues do not commonly acutely co-occur in ambulance attendances. How AOD use relates to violence victimisation is complicated, because the relationship is bi-directional; nevertheless, there is a distinct positive association between AOD use and being a victim of violence (Cafferky et al. 2018; Devries et al. 2014). In contrast, ambulance attendances to treat aggressors in violence were highly complex, with multiple co-occurring issues commonly found. This highlights the complexity of violence, with large numbers of ambulance attendances to treat individuals who perpetrated violence and who were themselves also experiencing acute harm. Ambulance attendances for aggressors were often for a threat of violence rather than physical violence. This is likely to reflect management of co-occurring aggression and mental health issues in the community, rather than actual physical injury having been inflicted.

Consistent with other data sources (eg Australian Bureau of Statistics 2017; Miller et al. 2016), victims of intimate partner violence were most commonly female and were the victim of physical violence. However, this report also highlights the relative contribution of other family violence, which had a higher number of attendances than intimate partner violence, and in which males and females were approximately equally represented. Therefore, with the increased focus and resources directed towards interventions for family violence (eg *Free From Violence,* Victorian Government 2017), it is important that these efforts concentrate on other types of family violence in addition to intimate partner violence.

This study found that the largest proportion of violence-related ambulance attendances was for community violence. Approximately half of ambulance attendances for community violence occurred in a private location (eg a private residence or home), and police co-attended between half and three-quarters of all community violence-related attendances. This is higher than was previously reported (Miller et al. 2016), but that may reflect the more serious harms that are captured by ambulance attendances and/or the policies in jurisdictional ambulance services regarding reporting to police.

Nevertheless, these findings highlight the issue that community violence (between non-family members) may be underestimated by using existing data sources, such as police data. In both Victoria and Tasmania, there was a surprisingly high number of attendances to treat the aggressor of community violence, compared with victims of community violence. In the former type of violence, paramedics and police were the principal group of victims, predominantly of the threat of violence, rather than actual physical violence. These findings highlight the risk of violence for these frontline services and reinforce approaches that seek to effectively reduce the incidence of occupational violence. This finding also reflects the complexity of attendances to treat aggressors of violence. Mental health issues, AOD use and self-harm were frequently present in these attendances, suggesting that violence may be occurring in the context of police and paramedics attending a person who is experiencing acute psychiatric harms and/or is affected by AOD. This interplay needs to be clearly considered in frontline services' models of care.

Where AOD use co-occurred within violence-related attendances, this was predominantly related to alcohol, with illicit drug use and pharmaceutical misuse making smaller contributions to the data; this may reflect the greater availability and consumption of alcohol, compared with these other drugs (Australian Institute of Health and Welfare 2017). In male attendances for all violence types (intimate partner, other family, and community), alcohol consumption by the ambulance patient was associated with a significantly increased proportion of males who were victims of violence, compared with instances when alcohol was not consumed by the patient. In cases of both intimate partner violence and community violence, victims of violence were significantly more likely to be transported to hospital when alcohol had been consumed by the victim. Collectively, these findings reinforce the well documented connection between alcohol and violence victimisation (Cafferky et al. 2018; Devries et al. 2014) and support calls to address alcohol use as part of a suite of policy approaches aiming to reduce violence-related harms and impacts on frontline services.

Overall, the percentage of mental health symptoms co-occurring for victims of violence was relatively low across all violence types. However, it is noteworthy that, across all violence types, females were significantly more likely to experience co-occurring mental health symptoms within attendances related to being the victim of violence. In contrast, mental health symptoms were more common in attendances to treat aggressors of violence. In particular, the over 60-year-old group was significantly over-represented in attendances to treat the aggressor in the violence. This was found to be associated with a particular subset of patients, who were experiencing medically induced mental health symptoms (eg dementia). For these patients, the violence was predominantly threatening behaviour and was frequently directed towards those who were providing care (both familial and non-familial carers). This highlights the fact that, regardless of intent, violence associated with particular medical conditions is elevated in an ageing population, with clear impacts on both service providers and carers.

Within attendances for aggressors in violence, self-harm frequently co-occurred (most commonly, suicidal ideation). This association was more common in intimate partner violence or other family violence than with community violence. In both the other family violence and the community violence categories, women were significantly more likely to have an ambulance attendance involving both being the aggressor of violence and experiencing self-harm, although this association was not present for intimate partner violence.

For all types of violence, when aggression of violence co-occurred with self-harm, the patient was significantly more likely to be transported to hospital by paramedics. Although the relationship between violence and self-harm has been previously described (Conner et al. 2001), the cause and moderators of this association are less well understood. This report shows that self-harm and aggression of violence towards others frequently acutely co-occur in ambulance attendances. This finding provides an opportunity to examine the relationship between aggression of violence and self-harm, using a new data source.

Future work

This study established the feasibility of using coded ambulance data for violence surveillance, and this methodology could be expanded to other jurisdictions. There are already available datasets that capture violence-related information, including police family violence and assault data, injury surveillance systems (emergency department or hospital data), mortality data and specific coronial datasets capturing violent death (Scott & Faulkner 2019). These data sources provide valuable details, although each is restricted by the information available and the coding structure. For example, injury surveillance data generally focuses on health-related consequences, and they often do not capture the co-occurring role of AOD in the incident. Deaths data are a source of detailed information but suffer significant time delays of up to three years before public release, and then only provide information on fatalities (Studdert et al. 2016). Police data provide rich information, but, as seen in our data, police only attend between half and three-quarters of violent incidents.

We have demonstrated that coded ambulance data identify and characterise a wide range of violence-related information, particularly the complex acute associations between AOD, mental health, self-harm and violence—information that is not provided by other currently available data sources. Further, this data would capture a broader component of the population than data obtained from police and hospital records and could be available for analysis three months after a violent incident. Coded ambulance data could also be linked with other data sources (eg police, injury surveillance or deaths data) to enable better understanding of the impacts of violence and associated AOD use, mental health and self-harm. Data linkage may also provide a means of exploring these relationships longitudinally, in order to test causality and monitor trends over time. This information would be valuable in developing and implementing interventions for violence.

Routine coding and reporting of ambulance data could be a valuable source of information, sitting alongside (or being linked to) health, police, coronial and survey data. This unique dataset would help to explain the complex nature of violence and would guide the development and evaluation of public policy and interventions aimed at reducing violence. Ambulance attendance data provide a unique and versatile tool to measure violence, and the context in which that violence occurs, at a population level.

References

Arseneault L, Moffitt TE, Caspi A, Taylor PJ & Silva PA 2000. Mental disorders and violence in a total birth cohort: Results from the Dunedin Study. *Archives of General Psychiatry* 57(10): 979–986

Australian Bureau of Statistics 2017. *Personal Safety Survey 2016.* Canberra: Australian Bureau of Statistics

Australian Bureau of Statistics 2008. *2007 National Survey of Mental Health and Wellbeing.* Canberra: Australian Bureau of Statistics

Australian Institute of Criminology 2003. *Crime Facts Info No 50: Costs of crime.* Canberra: Australian Institute of Criminology

Australian Institute of Health and Welfare 2017. *National Drug Strategy Household Survey (NDSHS) 2016: Key findings.* Canberra: Australian Institute of Health and Welfare

Boles SM & Miotto K 2003. Substance abuse and violence: A review of the literature. *Aggression and Violent Behavior* 8(2): 155–174

Butchart A & Mikton C 2014. *Global status report on violence prevention 2014*. Luxembourg: World Health Organization

Cafferky BM, Mendez M, Anderson JR & Stith SM 2018. Substance use and intimate partner violence: A meta-analytic review. *Psychology of Violence* 8(1): 110–131

Christoffersen MN, Soothill K & Francis B 2005. Who is most at risk of becoming a convicted rapist? The likelihood of a rape conviction among the 1966 birth cohort in Denmark. *Journal of Scandinavian Studies in Criminology and Crime Prevention* 6(1): 39–56

Collins JJ & Messerschmidt PM 1993. Epidemiology of alcohol-related violence. *Alcohol Research and Health* 17(2): 93

Conner KR et al. 2001. Violence, alcohol, and completed suicide: a case-control study. *American Journal of Psychiatry* 158(10): 1701–1705

Council of Australian Governments 2011. *The National Plan to Reduce Violence Against Women and Their Children 2010 – 2022.* Canberra: Department of Social Services. https://www.dss.gov.au/women/programs-services/reducing-violence/the-national-plan-to-reduce-violence-against-women-and-their-children-2010-2022

Cox S, Martin R, Somaia P & Smith K 2013. The development of a data-matching algorithm to define the 'case patient'. *Australian Health Review* 37(1): 54–59

Crossin R et al. 2018. Acute harms associated with inhalant misuse: Co-morbidities and trends relative to age and gender among ambulance attendees. *Drug and Alcohol Dependence* 190: 46–53

Cunradi CB, Caetano R & Schafer J 2002. Socioeconomic predictors of intimate partner violence among White, Black, and Hispanic couples in the United States. *Journal of Family Violence* 17(4): 377–389

Dahlberg LL & Krug EG 2002. Violence: A global public health problem. In: EG Krug, LL Dahlberg, JA Mercy, AB Zwi & R Lozano (eds), *World Report on Violence and Health*. Geneva, Switzerland: World Health Organization

Department of Health and Human Services 2015. *Ice Action Plan.* Melbourne: Department of Health and Human Services

Devries KM et al. 2014. Intimate partner violence victimization and alcohol consumption in women: A systematic review and meta-analysis. *Addiction* 109(3): 379–391

Devries KM et al. 2013. Intimate partner violence and incident depressive symptoms and suicide attempts: A systematic review of longitudinal studies. *PLoS Medicine* 10(5):e1001439. DOI: 10.1371/journal.pmed.1001439

Dietze P, Cvetkovski S, Rumbold G & Miller P 1998. *Non-fatal heroin overdose in Melbourne: Establishment and analysis of a database of Ambulance Service records*. Project Report 1997/1998. Melbourne: Turning Point Alcohol and Drug Centre

Dietze P, Fry C, Rumbold G & Gerostamoulos J 2001. The context, management and prevention of heroin overdose in Victoria, Australia: The promise of a diverse approach. *Addiction Research & Theory* 9(5): 437–458

Elbogen EB & Johnson SC 2009. The intricate link between violence and mental disorder: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry* 66(2): 152–161

Fitterer JL, Nelson TA & Stockwell T 2015. A review of existing studies reporting the negative effects of alcohol access and positive effects of alcohol control policies on interpersonal violence. *Frontiers in Public Health* 3 (253): 1–11

Fulu E et al. 2013. *Why do some men use violence against women and how can we prevent it. Quantitative findings from the United Nations multi-country study on men and violence in Asia and the Pacific.* Bangkok: United Nations Development Programme, United Nations Population Fund.

Galanter M et al. (eds) 1997. *Recent developments in alcoholism Volume 13: Alcohol and Violence: Epidemiology, neurobiology, psychology, family Issues*. Boston: Springer Science

Graham K, Bernards S, Wilsnack SC & Gmel G 2011. Alcohol may not cause partner violence but it seems to make it worse: A cross national comparison of the relationship between alcohol and severity of partner violence. *Journal of Interpersonal Violence* 26(8): 1503–1523

Heilbronn C, Lloyd B, McElwee P, Eade A & Lubman DI 2013. Trends in quetiapine use and non-fatal quetiapine-related ambulance attendances. *Drug and Alcohol Review* 32(4): 405–411

Hser YI 1993. Population estimation of illicit drug users in Los Angeles County. *Journal of Drug Issues* 23(2): 323–334

Klostermann K & Fals-Stewart W 2006. Intimate partner violence and alcohol use: Exploring the role of drinking in partner violence and its implications for intervention. *Aggression and Violent Behavior* 11(6): 587–597

Krug EG, Mercy JA, Dahlberg LL & Zwi AB 2002. The world report on violence and health. *The Lancet* 360(9339): 1083–1088

Laslett A-M et al. 2015. *The hidden harm: Alcohol's impact on children and families*. Canberra: Foundation for Alcohol Research and Education

Lemstra M et al. 2008. A meta-analysis of marijuana and alcohol use by socio-economic status in adolescents aged 10–15 years. *Canadian Journal of Public Health* 99(3): 172–177

Lloyd B, Gao CX, Heilbronn C & Lubman DI 2015. *Self-harm and mental health-related ambulance attendances in Australia: 2013 data.* Fitzroy: Turning Point

Lloyd B, Matthews S, Gao CX, Heilbronn C & Beck D 2015. *Trends in alcohol and drug related ambulance attendances in Victoria: 2013/14.* Fitzroy: Turning Point

McKetin R et al. 2014. Does methamphetamine use increase violent behaviour? Evidence from a prospective longitudinal study. *Addiction* 109(5): 798–806

McNiel DE & Binder RL 2007. Effectiveness of a mental health court in reducing criminal recidivism and violence. *American Journal of Psychiatry* 164(9): 1395–1403

Menéndez P, Weatherburn D, Kypri K & Fitzgerald J 2015. *Lockouts and last drinks: The impact of the January 2014 liquor licence reforms on assaults in NSW, Australia.* Crime and Justice Bulletin 183. Sydney: NSW Bureau of Crime Statistics and Research

Miczek KA, DeBold JF, Haney M, Tidey J, Vivian J & Weerts EM 1994. Alcohol, drugs of abuse, aggression, and violence. In AJ Reiss & JA Roth (eds), *Understanding and Preventing Violence Volume 3: Social Influences*. Washington: The National Academy Press

Miller P et al. 2016. *Alcohol/drug-involved family violence in Australia (ADIVA)*. National Drug Law Enforcement Research Fund monograph no. 68. Canberra: Australian Institute of Criminology. https://aic.gov.au/publications/ndlerf/monographs

Morenoff JD, Sampson RJ & Raudenbush SW 2001. Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. *Criminology* 39(3): 517–558

Nathanson AM, Shorey RC, Tirone V & Rhatigan DL 2012. The prevalence of mental health disorders in a community sample of female victims of intimate partner violence. *Partner Abuse* 3(1): 59.

Neigh GN, Ritschel LA & Nemeroff CB 2010. Biological consequences and transgenerational impact of violence and abuse. *Psychiatric Times* 27(11): 49–52

Rees S et al. 2014. Onset of common mental disorders and suicidal behavior following women's first exposure to gender based violence: A retrospective, population-based study. *BMC Psychiatry* 14(312). DOI: 10.1186/s12888-014-0312-x

Reingle JM, Jennings WG, Connell NM, Businelle MS & Chartier K 2014. On the pervasiveness of event-specific alcohol use, general substance use, and mental health problems as risk factors for intimate partner violence. *Journal of Interpersonal Violence* 29(16): 2951–2970

Scott D & Faulkner A 2019. The role, importance and challenges of data for a Public Health Model. In D Higgins, B Lonne, T Herronkohl & D Scott (eds), *Revisioning a public health approach to child protection.* Denver: Springer

Shorey RC, Febres J, Brasfield H & Stuart GL 2012. The prevalence of mental health problems in men arrested for domestic violence. *Journal of Family Violence* 27(8): 741–748

Smith PH, Homish GG, Leonard KE & Cornelius JR 2012. Intimate partner violence and specific substance use disorders: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychology of Addictive Behaviors* 26(2): 236–45

Sonenshone AW, Rubin DJ & Tran J 2017. *Orange County Women's Health Policy Brief: Domestic violence, mental health, and substance abuse.* Orange County, CA: Orange County Women's Health Project

Studdert D, Walter S, Kemp C & Sutherland G 2016. Duration of death investigations that proceed to inquest in Australia. *Injury Prevention* 22(5): 314–20

Taylor R, Page A, Morrell S, Carter G & Harrison J 2004. Socio-economic differentials in mental disorders and suicide attempts in Australia. The *British Journal of Psychiatry* 185(6): 486–493

Van Dorn R, Volavka J & Johnson N 2012. Mental disorder and violence: Is there a relationship beyond substance use? *Social Psychiatry and Psychiatric Epidemiology* 47(3): 487–503

Victorian Government 2017. *Free from Violence.* Melbourne: Victorian Government.

Vitoria-Estruch S, Romero-Martínez A, Lila M & Moya-Albiol L 2018. Differential cognitive profiles of intimate partner violence perpetrators based on alcohol consumption. *Alcohol* 70: 61–71

Waters H et al. 2004. *The economic dimensions of interpersonal violence*. Geneva: World Health Organization

Wilkinson RG & Marmot M 2003. *Social determinants of health: The solid facts*. Geneva: World Health Organization

Witt K, Hawton K & Fazel S 2014. The relationship between suicide and violence in schizophrenia: Analysis of the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) dataset. *Schizophrenia Research* 154(1): 61–67

Witt K & Lubman DI 2018. Effective suicide prevention: Where is the discussion on alcohol? *Australian & New Zealand Journal of Psychiatry* 52(6): 507–508

World Health Organization 2003. Global Burden of Disease (GBD) 2000: Version 3 estimates. Geneva: World Health Organization. Retrieved from https://www.who.int/healthinfo/global_burden_disease/estimates_regional_2000_v3/en/

Yates S 2017. *A critical frame analysis of gender in Victoria's Royal Commission into Family Violence.* Lausanne: 5th European Conference on Politics and Gender

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