A Public Health Approach to Suicide Prevention 5

Addressing key risk factors for suicide at a societal level

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A public health approach to suicide prevention recognises the powerful influence of social determinants. In this paper—the fifth in a Series on a public health approach to suicide prevention—we consider four major risk factors for suicide (alcohol use, gambling, domestic violence and abuse, and suicide bereavement) and examine how their influence on suicide is socially determined. Cultural factors and societal responses have an important role in all four risk factors. In the case of alcohol use and gambling, commercial entities are culpable. This Series paper describes a range of universal, selective, and indicated interventions that might address these risk factors, and focuses particularly on key universal interventions that are likely to yield substantial population-level benefits.

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Introduction

A public health approach to suicide prevention recognises that although some risk factors might manifest at an individual level, the underlying causes of these risk factors are social determinants (ie, "the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness… [which] are, in turn, shaped by political, social, and economic forces", according to the Commission on Social Determinants of Health).[1]

This *Lancet Public Health* Series paper focuses on four risk factors for suicide: alcohol use, gambling, domestic violence and abuse, and suicide bereavement. All four risk factors are linked to social determinants, cultural factors, and societal responses, and can be addressed by society-level approaches. In the cases of alcohol use and gambling, commercial determinants (ie, the subset of social determinants comprising "the systems, practices, and pathways through which commercial actors drive health"[2]) are crucial. We emphasise broad, upstream preventive interventions that can be delivered at a population level, but we also refer to interventions that target individuals whose risk of suicide is heightened by alcohol use, gambling, domestic violence and abuse, or suicide bereavement. In public health terms (figure), population-level interventions equate to universal interventions (targeting the population as a whole), and individual-level interventions equate to selective interventions (targeting those at high risk of suicide) or indicated interventions (targeting those who are suicidal).

We emphasise universal interventions for several reasons. First, many social determinants of suicide play out at a societal level (eg, policies and regulations that promote the widespread availability of alcohol and gambling, systems that dehumanise those who seek help for domestic violence and abuse, and cultural norms that stigmatise suicide bereavement), so addressing these determinants at the same societal level is important. Second, population-wide universal interventions do not rely on identifying individuals at risk for suicide, which means that individuals within a population who are at high risk will be exposed to the intervention, but also that individuals who are at low risk, but might still have suicidal thoughts and behaviours, will benefit. This group is missed by selective and indicated interventions. Third, reducing the population prevalence of these risk factors is often likely to be helpful. Finally, as we explain later in this Series paper, universal interventions are often the most effective approach.

We could have focused on various other risk factors, some of which are an extension of ones we have covered here (eg, alcohol use is one form of substance use). Others are addressed elsewhere in the Series (eg, financial hardship is addressed in the third paper).[3] Addressing all risk factors was beyond the scope of this Series paper, but the four selected examples each can have a major effect on suicide (eg, they can substantially elevate risk and are common in the population) and are amenable to society-level interventions.

Alcohol use

Alcohol use and misuse are important contributors to suicide risk,[4,5] with potential mechanisms including disinhibition, impulsiveness, impaired judgement, social isolation, and depression.[6] The literature distinguishes between the risk conferred by acute alcohol use and alcohol use disorder (ie, chronic use that meets diagnostic criteria).[4–8] Cohort studies have shown that alcohol consumption commonly precedes suicidal behaviour; one meta-analysis of 30 cohort studies showed risk ratios of 1·65 for suicide and 2·10 for suicide attempts associated with alcohol consumption in general.[4] Alcohol use disorder is also strongly associated with suicide; another meta-analysis found a risk ratio of 3·23 for suicide for people with this disorder.[5] Most of the studies on the relationship between acute alcohol use and alcohol use disorder and suicide have been done in high-income countries (HICs), but evidence also suggests that acute alcohol use and alcohol use disorder are associated with suicide in low-income and middle-income countries (LMICs).[7] An analysis of nationally representative survey data from 336 287 participants in 55 LMICs estimated that 63% of males and 37% of females engage in heavy episodic drinking.[8]

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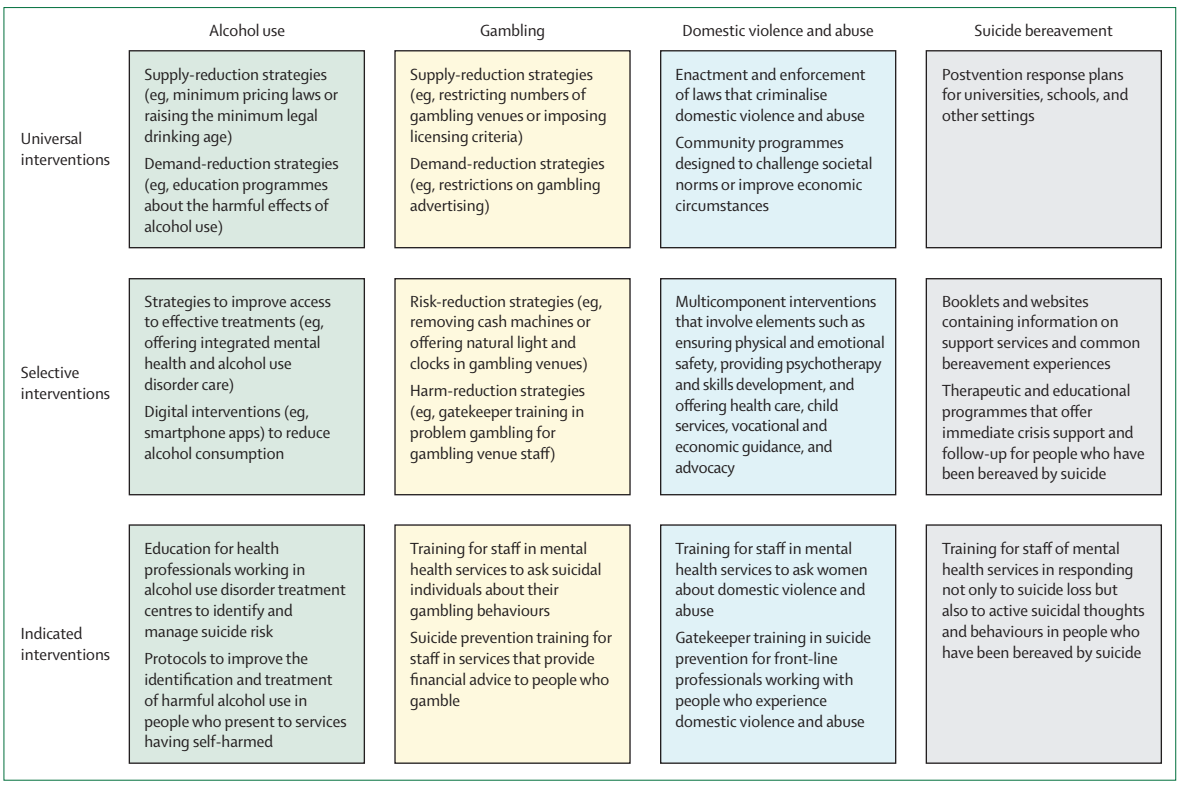


Figure: **Interventions that might reduce suicide-related effects of four key risk factors**

Approaches to prevention

Various universal interventions to restrict alcohol consumption can reduce suicide rates.[9,10] Key among these are supply-reduction strategies, recommended by WHO as one of the most cost-effective ways to reduce alcohol-related harm, including suicide.[11] These interventions include legislation and policies to reduce access to alcohol by increasing alcohol prices (eg, through minimum pricing laws or taxes), limiting alcohol outlet density and trading hours, raising the minimum legal drinking age, and restricting marketing.[9] Evidence from ecological studies suggests that these supply-side strategies can be effective in preventing suicide.[12] For example, a US study showed that setting the minimum legal drinking age at 18 years rather than 21 years is associated with a 10% increase in suicides.[13] Similarly, Alaskan Native suicide rates declined in communities that prohibited alcohol sales but allowed importation for personal use; these declines were not seen in other communities.[14]

Universal interventions that emphasise demand reduction might also be effective, although the evidence is less strong compared with evidence supporting supply-side interventions.[15] These interventions include efforts to shift societal norms in regards to alcohol consumption, campaigns to promote health literacy, and education programmes about alcohol's harmful effects.[9] Most of these interventions focus on general safety (eg, not driving while intoxicated) rather than suicide prevention. Sometimes these interventions are delivered alongside supply-side strategies.

Particular selective interventions can also be helpful, including interventions designed to improve diagnosis of and access to effective treatments for alcohol use disorder (eg, offering integrated care for mental health and alcohol use disorder), which are more common in HICs.[16] These interventions also include digital interventions (eg, smartphone apps) to reduce alcohol consumption.[17] Sensors on smartphones provide a novel way of detecting harmful alcohol use,[18] which could also inform at-risk individuals about sources of effective treatments.

Indicated interventions that target people with alcohol use disorder who are experiencing suicidal thoughts and behaviours have also been developed. These interventions include education for health professionals in alcohol use disorder treatment centres to identify and manage suicide risk and protocols to improve the identification and treatment of harmful alcohol use in people who present to services having self-harmed. These protocols might recommend access to brief alcohol interventions for suicidal patients with harmful alcohol use. Such interventions can reduce alcohol consumption[19] and have been shown to be acceptable to particular patient groups (eg, adolescents) and to improve their understanding of how their alcohol use

might be related to their suicidal thoughts and behaviours.[20]

Gambling

Gambling is receiving increasing attention as a risk factor for suicide.[21,22] Multiple population surveys have shown an association between gambling and suicidal thoughts and behaviours; a 2024 meta-analysis found that, compared with people without gambling problems, people with gambling problems had 2·17-times higher odds of lifetime suicidal ideation and 2·81-times higher odds of lifetime suicide attempts.[21] Ecological studies suggest that high gambling rates and high suicide rates co-occur; a 2022 review found an association between area-level amounts spent on gambling and suicide rates.[23] Individual-level studies using coronial records have found evidence of gambling behaviour before death in substantial numbers of those who die by suicide[21,23] (eg, 4·2% of 4788 individuals in an Australian study[24]). These individuals tend to be male, be the most socioeconomically disadvantaged,[24] and have financial problems.[23] Some are also depressed, although less than half of individuals with a gambling history who die by suicide have any psychiatric history.[23] A 2022 systematic review of qualitative studies suggested that the connection between gambling and suicidal behaviour is linked to indebtedness and shame, not mental illness.[22]

The relationship between gambling and suicide is worrying because of gambling's pervasiveness. In HICs, 8·7% of the population engage in any risk gambling, and 1·41% engage in problematic gambling.[25] Online options make gambling available to increasingly younger individuals.[25,26] Estimates from 202 studies done between 1975 and 2012 indicate a higher prevalence of problem gambling in Asia than in Europe, Australasia, or North America.[27]

Approaches to prevention

Strategies for preventing gambling-related harms aim to address supply or demand or to reduce risk or harm.[28] The majority of these strategies are universal or selective interventions that address gambling in general; examples of indicated interventions that target suicidal people who gamble are rare. Therefore, evaluations of the interventions described in this Series paper tend to consider gambling-related behaviours as the outcome of these interventions instead of suicide-related behaviours; however, if these strategies can reduce gambling-related behaviours, they are also likely to be able to reduce suicide-related behaviours given the suicide risk associated with gambling.

Many supply-reduction strategies can be regarded as universal interventions designed to reduce the availability of gambling opportunities for the population. These strategies include restricting numbers of gambling venues and imposing licensing criteria on these venues, both of which have been shown to decrease overall gambling participation and the numbers of people who engage in frequent or problem gambling.[28] Universal interventions that use policy or regulations to reduce supply have the potential to achieve substantial reductions in gambling-related suicides because of their broad approach, and might also be complemented by selective interventions that involve targeted supply-reduction strategies, such as on-screen, limit-setting messages regarding time or money spent. These messages have strong evidence of effectiveness when delivered as pop-ups, rather than static messages, particularly if they are endorsed by relevant authorities.[29]

Demand-reduction strategies, which aim to reduce the desire to gamble and prevent problem gambling, also often constitute universal interventions. One such strategy is restricting gambling advertising. Although this strategy has received little evaluation attention, it is likely to be effective given that a review involving 74 studies found consistent support for a causal relationship between gambling advertising and gambling activity, with greater effects for those who were already at risk of gambling harms than those who were not at risk.[30] By contrast, another demand-reduction strategy—introducing campaigns and posters that inform people about the low likelihood of winning—has been shown to have little effect on gambling attitudes and behaviours.[28] Similarly, educational interventions designed to reduce demand—particularly school-based programmes promoting so-called responsible gambling—tend not to change behaviour, although some might increase knowledge about gambling harms.[28,31]

Risk-reduction strategies are designed to reduce gambling-related factors that increase vulnerability, including vulnerability to suicide. These strategies typically involve selective interventions, such as imposing monetary restrictions (eg, removing cash machines from gambling venues), which have been shown to be moderately effective.[28] Modifying the gambling environment (eg, offering natural lighting and clocks) is another risk-reduction strategy that could help by creating an awareness of time or interrupting the gambling process.[28] Considering alcohol restrictions in these venues could be important for preventing gambling-related suicide, given the disinhibitory effect of alcohol and its association with suicide.

Harm-reduction strategies support people who engage in problem gambling to manage and move beyond their gambling behaviours and develop relapse prevention strategies. Most of these strategies constitute selective interventions (because they address gambling in general, rather than suicidal thoughts and behaviours specifically), although some might involve indicated components that deal with suicidal crises. One harm-reduction strategy is gatekeeper training for gambling venue staff, which has been shown to change the staff's knowledge, attitudes, and confidence in dealing with people who engage in problem gambling. However, little

evidence is available on this strategy's effect on people who gamble,[32] and it should not be implemented in isolation because relying on industry staff in such settings to be the front line of suicide prevention would be inappropriate.[33] Crisis intervention (eg, gambling helplines) and targeted gambling treatment (eg, psychological, pharmacological, and self-help or peer support interventions) are other harm-reduction strategies that could be beneficial, at least in the short term.[31] Another harm-reduction strategy is gambling restrictions that are self-imposed by people who gamble, including pre-commitment (limiting gambling to a set amount of money or time) and self-exclusion (banning oneself from particular venues). These strategies are only effective if they are mandatory (not voluntary),[34] and they might be helpful for some individuals but counter-productive for others (eg, by leading to higher bets within short timeframes or gambling at alternative venues).[28]

Indicated interventions that target suicidal people who gamble are rare, but some might be explored, including encouraging staff in mental health services to ask suicidal individuals about their gambling behaviours[35] and training financial services staff who support indebted people who gamble in suicide prevention.[36]

Consideration needs to be given to how best to adapt successful interventions to online gambling. Some of the most effective interventions could be difficult to implement in online environments. Regulatory restrictions on local gambling sites might not offer protection against offshore options. Strategies such as site blocking might be required, although the effectiveness of these strategies might depend on their implementation.[37]

Domestic violence and abuse

Here, we distinguish between intimate partner violence (IPV) and domestic violence and abuse. We use IPV to refer to violence perpetrated by an intimate partner that includes physical, sexual, or emotional abuse (or a combination of these) and controlling behaviours.[38] We define domestic violence and abuse as any act of violence or abuse that causes physical, sexual, or psychological harm, perpetrated by any household family member against another individual in the household.[38] Domestic violence and abuse therefore includes but goes beyond IPV, especially in patriarchal societies with extended family households in which other family members might also be perpetrators.[39] Domestic violence and abuse can be perpetrated against and witnessed by both children and adults.

Women are far more likely to experience IPV than men, and although both men and women experience domestic violence and abuse, women are more likely to experience repeated, severe forms of violence and abuse.[40] A 2024 meta-analysis estimated the lifetime prevalence of IPV for women aged 16 years and older to be 37% and the 12-month prevalence of IPV for this group to be 24%.[41]

IPV and domestic violence and abuse are major risk factors for suicide,[41] and evidence suggests the relationship might be mediated by factors such as entrapment and post-traumatic stress disorder.[42,43] A 2017 systematic review found that past IPV was evident in up to 62·5% of female suicide cases.[44] Studies from across the world highlight that more than half of those who self-harm have experienced domestic violence and abuse.[45,46] Rates of suicide in domestic violence and abuse perpetrators are also high.[47]

Violence-supportive social norms that provide an environment for domestic violence and abuse perpetration increase the risk for women.[48] Gender inequality, female disempowerment, and alcohol misuse are linked to domestic violence and abuse.[49] High rates of suicide in women in LMICs have been correlated with gender inequity, as indicated by laws that discriminate against women.[50]

Approaches to prevention

Various universal, selective, and indicated interventions should be considered to address domestic violence and abuse and its influence on suicide.[49] Gains in addressing domestic violence and abuse are likely to be made by universal interventions that address the problem at a cultural or societal level. Policy and legislation reforms to ensure women's rights and eliminate violence against them can support women who experience violence in seeking help and can act as a deterrent for perpetration. Countries with laws that criminalise domestic violence and abuse are known to have lower rates of it than countries without these laws.[51] However, enforcement of these laws is needed to ensure that implementation on the ground supports the legal framework and does not have unintended consequences. In India, for example, a 53% increase in legal cases filed for domestic violence and abuse was documented between 2001 and 2018 (with domestic violence and abuse made legally punishable in 2005), but the mean number of people accused of these crimes being prosecuted decreased during the same period.[39] Not enough is known as to where the violence-supportive norms are located within our society, whether institutional and public structures reinforce these norms, and, if they do, how. These factors need to be studied to address contextual issues in implementation of relevant policies and legislation.[49]

Community-level universal interventions that are designed to challenge societal norms or improve economic circumstances show promise, including in LMICs.[52] For example, the Stepping Stones and Creating Futures intervention, which was trialled in settlements in South Africa's eThekwini Municipality, was effective in changing young men's self-reported perpetration of IPV and improving young women's livelihoods.[53] Similarly, a community mobilisation intervention known as SASA!, which was tested in communities in Kampala, Uganda, reduced the acceptability of IPV perpetration in men and

women and improved community responses to women experiencing violence.[54] Stepping Stones and Creative Futures did not have an effect on women's experiences of IPV, whereas SASA! did. Neither trial assessed suicidal behaviours, which is a limitation in other trials as well.[52]

Alcohol use disorder is associated with increased likelihood of perpetration of IPV.[55] The universal interventions designed to limit alcohol consumption outlined previously are likely to be useful in preventing IPV as a pathway to suicide, although the potential for alcohol interventions to reduce IPV has not been adequately tested.[56]

Selective interventions for those who experience domestic violence and abuse might also be beneficial. Many are delivered as multicomponent interventions that involve elements such as ensuring physical and emotional safety, providing psychotherapy and skills development, and offering health care, child services, vocational and economic guidance, and advocacy.[57] Key among these interventions are crisis or emergency accommodation services (sometimes called shelters or refuges). Evaluations of these services have shown that they are associated with reductions in depression and psychological distress, although suicide-related outcomes have not generally been examined.[58] Primary care providers and mental health professionals offer routes to these interventions, but they are not always equipped to recognise signs of domestic violence and abuse or aware of available services.[59] Training and resources are warranted here. In the UK, the Identification and Referral to Improve Safety programme is effective in supporting primary care providers to identify women experiencing domestic violence and abuse and refer them to support services,[60] although more data are needed to assess long-term cost-effectiveness in real-world settings.[61] Universal screening for IPV is not recommended,[62] but women who are in contact with mental health services should be asked about IPV to ensure appropriate referral and treatment.[49] Likewise, women who are in contact with IPV services should be asked about thoughts of suicide.

Indicated interventions that operate at the interface between domestic violence and abuse and suicide are rare. A 2023 systematic review identified only five studies of interventions that addressed suicidal behaviour among survivors of IPV.[63] Upskilling relevant professionals might be helpful here. For example, gatekeeper training and support for front-line professionals who support people who have experienced domestic violence or abuse might improve the capacity of these professionals to recognise and respond to suicidal thoughts and behaviours. Similar gatekeeper training might also be appropriate for those who work with perpetrators of domestic violence and abuse to reduce suicide risk in this group. Another approach is to encourage and support mental health staff who provide care for people who present having self-harmed to ask about domestic violence and abuse and respond appropriately.

Suicide bereavement

Suicide bereavement describes the grief and adjustment after a suicide that is experienced by family members, friends, and close contacts of the person who died.[64] The lifetime prevalence of losing a family member to suicide is 3·9%, and the lifetime prevalence of losing a friend to suicide is 14·5%.[65] The suicide of a relative triples an individual's odds of suicide or suicide attempt, and the suicide of a friend or acquaintance increases these odds by a factor of 2·5.[66] A nationwide case–control study in Denmark indicated that 60% of suicides among people bereaved by suicide might be averted if addressing the factors elevating their risk was possible.[67] Estimates from LMICs are scarce, but as 77% of suicides worldwide in 2019 occurred in these countries,[68] the effects of suicide bereavement are likely to affect millions of people.

Mechanisms that contribute to suicide risk after suicide bereavement are not fully understood, but depression makes a small contribution,[69] with other probable mediators including feelings of shame, responsibility, and stigma.[64] Additionally, the cognitive availability of suicide (ie, awareness of suicide as an option and knowledge of possible means of suicide; see the second paper in this Series[70]) might be heightened after suicide loss.[71]

Approaches to prevention

Many of the approaches to preventing suicide among individuals who have been bereaved by suicide occur in the context of postvention (ie, activities designed to support individuals and communities following a suicide). These approaches could be protective for those who have been bereaved, minimising the risk that they themselves will have suicidal thoughts or make a suicide attempt.

Postvention response plans (or models or guidelines) are an example of a universal intervention. Often these interventions have been developed for educational institutions, workplaces, and communities.[72] These interventions provide guidance about what should be done in the immediate term, short term, and long term if a suicide occurs, and focus both on safe, accurate communication with and support for the whole university, school, workplace, or community, and on identifying and supporting those who might be most affected and at risk. Postvention response plans offer scripts or templates for communication, supplementary resources, and information about appropriate referral sources. Some evaluations of postvention response plans have found them to have positive effects on grief, mental health and, in one study, possibly suicidality.[73]

Booklets and websites containing information on support services and common bereavement experiences constitute a selective intervention. These resources are often made available as a part of suicide response plans, although they can also be provided in a standalone way (eg, distributed to bereaved family members by first

responders). One example is Help is at Hand, a UK resource that guides suicide-bereaved individuals through the emotions they might feel and the reactions they might have, and provides advice about what might be helpful to them.[74] Such resources seem to be well received, with recipients preferring to receive them as early as possible.[75] These resources are particularly important for children bereaved by parental suicide, for whom suicide attempt risk is greatest in the first 2 years after the loss.[76] Such resources should encourage help seeking[77] and be context-specific given cultural differences in responses to suicide and the availability of local support agencies.

Outreach by those who make early professional contact with suicide-bereaved individuals can also be thought of as a selective intervention. In addition to first responders, others with a part to play are those who might be present when bereaved relatives and friends are informed about the death (eg, hospital staff), in the weeks following the suicide (eg, coronial staff and undertakers), or later (eg, primary care providers). Evidence suggests that outreach that involves these types of professionals (eg, coordinated by police responding to a suicide) is perceived to be acceptable, but its effect on the suicide risk of bereaved individuals remains unknown.[78] Outreach should signpost to intensive supports as necessary.

Intensive suicide bereavement supports, which are also selective interventions, typically involve supportive, therapeutic, and educational components designed to assist individuals who lose a close contact to suicide.[79] These interventions also usually involve immediate crisis support and ongoing follow-up by trained facilitators or therapists. A 2019 systematic review of these interventions suggested that some could reduce depression and uncomplicated grief; however, evidence of their effect on suicide-related outcomes is insufficient.[79] Other indicated interventions might be required, which might involve mental health services in which staff are trained in responding not only to suicide loss but also to active suicidal thoughts and behaviours.

Challenges

Some challenges are apparent when considering how best to mitigate the suicide risk associated with alcohol use, gambling, domestic violence and abuse, and suicide bereavement. The first challenge relates to the availability and quality of suicide data in the context of these risk factors. Apart from alcohol use, these risk factors are poorly recorded in routinely collected suicide data. Conversely, registers of people who have, for example, experienced domestic violence and abuse rarely contain data on fatal outcomes (including suicide). Consequently, the influence of these factors on suicide is likely to be underestimated and inadequately understood. Investment is needed in better suicide data to inform prevention.[80]

A second challenge is that evaluations of interventions to address these four risk factors often involve weak study designs and usually do not involve suicide-related outcomes, which means that the evidence base guiding intervention efforts is suboptimal. Even when the evidence base is stronger (eg, for supply-reduction strategies designed to limit alcohol consumption), additional evidence would be desirable for informing the policy actions that should be taken (eg, evidence about how these strategies might be delivered in more settings). The quality and quantity of evaluations should be improved,[81] particularly in LMICs. Efforts to understand what works in such countries should be increased and draw on capacity-strengthening efforts that are already happening.[82] These efforts are crucial given the high prevalence of these risk factors in LMICs.

A third challenge is the insufficient policy emphasis that has been given to most of these risk factors. National suicide prevention strategies often mention the importance of supporting people who have been bereaved by suicide,[83] but this is the exception. Alcohol use, gambling, and domestic violence and abuse tend not to feature as targets for prevention in national suicide prevention strategies.[83] A policy focus on these factors is needed, and could potentially be realised by capitalising on common approaches that are listed in national strategies. For example, training and education feature prominently in national strategies,[83] and tailoring them to individuals who work with people with these risk factors (eg, financial counsellors who work with people who gamble) could yield benefits.

In the case of alcohol use and gambling, an additional challenge exists: the pernicious influence of the industries that profit from these activities. Spokespeople for these industries argue that alcohol-related and gambling-related harms only affect a minority of people, that so-called normal drinking or gambling is not problematic, and that individuals are responsible for their actions.[84] These industries manufacture doubt about what might work to reduce the suicide-related effects of their wares, deflecting attention from the universal supply-side interventions that have been shown to be effective and favouring interventions that place the onus for change on individuals and are likely to have a small effect on alcohol-related or gambling-related suicide rates.[85] The fact that these strategies are unlikely to impinge on the profits of these industries is no coincidence. These industries should be addressed directly and forcefully. The suicide prevention sector has won victories over other commercial determinants of suicide (eg, successfully lobbying for bans on highly hazardous pesticides[85]), and lessons and inspiration should be drawn from these victories. Policy changes to restrict these industries have public support.[86]

Conclusions

Alcohol use, gambling, domestic violence and abuse, and suicide bereavement are major risk factors for suicide.

Although knowledge about preventive approaches is incomplete, universal interventions could yield major population-level benefits. Selective and indicated interventions are also important but, at least in the case of alcohol and gambling harms, a cautious approach should be taken in regard to interventions that are industry-promoted and independent evidence of their effectiveness should be sought. Implementing effective strategies at scale is likely to curb suicide rates. Ideally, these strategies should be rolled out as part of integrated, cross-sectoral, multilevel approaches that are embedded into countries' national suicide prevention strategies; however, in countries without national strategies, interventions might be implemented in standalone ways. These interventions will need to be contextually and culturally appropriate, and reflect the fact that the influence of risk factors varies across the life course (eg, alcohol use is often high during adolescence and exposure to domestic violence and abuse can be dynamic and cumulative over time). If the effects of these four major risk factors could be mitigated, thousands of lives could be saved.

Contributors

JP and KH took joint responsibility for conceptualising the content of the article. JP took lead responsibility for writing the first draft of the manuscript. KH, JB, RD, DK, AP, JR, and MS contributed to subsequent drafts. JP and KH then further reviewed and edited the manuscript.

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