The *Lancet* Commission on self-harm

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EXECUTIVE SUMMARY

By delivering transformative shifts in societal attitudes, and initiating radical re-design of mental health care, we can fundamentally improve the lives of people who self-harm.

This Lancet Commission is the product of a substantial team effort that has taken place over five years. It consolidates evidence and knowledge derived from empirical research and lived experience of self-harm. Self-harm refers to 'intentional self-poisoning or injury, irrespective of apparent purpose'[1] and can take many forms including overdoses of medication, ingestion of harmful substances, cutting, burning, or punching. The focus of this Commission is on non-fatal self-harm although in some settings distinctions are not clear cut. Self-harm is a behaviour, not a psychiatric diagnosis. It is a complex phenomenon, with a wide variety of underlying causes and contributing factors. It is shaped by culture and society, yet its definitions have arisen from research conducted mainly in high income countries. The field has often excluded the perspectives of people living in low- and middle-income countries (LMICs) and Indigenous peoples.[*] Furthermore, unlike suicide prevention, self-harm has been neglected by governments internationally. For these reasons, we set out to integrate missing perspectives about self-harm, from across the world, alongside existing mainstream scientific knowledge, with the aim of raising the profile of self-harm in the policy arena. Ultimately our aim is to improve the treatment of people who self-harm across the world.

There are at least 14 million episodes of self-harm annually across the world, representing a global rate of 60 per 100 000 people per year. This is likely to be a considerable underestimate, because those who self-harm often do not present to clinical services and there are few routine surveillance systems, particularly in LMICs. Although self-harm can occur at any age, the incidence is much higher among young people and within this population, rates appear to be increasing. Repetition of self-harm is common and suicide is much more common after self-harm than in the general population; 1.6% of people die by suicide in the year after presentation to hospital with an episode of self-harm. In LMICs, rates of repetition appear to be lower, because pesticide self-poisoning (the commonest method of self-harm in LMICs) has a high case fatality rate, thereby eliminating individuals at a higher risk of repetition.

For individuals, the behaviour serves a variety of functions, including self-soothing, emotional management, communication, validation of identity and self-expression. Self-harm practices are also shaped by social relationships, and class dynamics. Indigenous peoples across the world, especially Indigenous youth, have high rates of self-harm, with colonisation and racism playing important roles in driving the behaviour. Numerous psychological and social factors are associated with self-harm and the social determinants of health, particularly poverty heavily influence the distribution of self-harm within communities. Yet we know little about how individual-level factors interact with social context to drive self-harm, or when an individual might be more likely to engage in self-harm at a particular point in time. Furthermore, many of the biopsychosocial mechanisms underlying self-harm remain elusive. Granular data capture through Ecological Momentary Assessment, together with machine learning and triangulation of data sources, including qualitative data, may help shed light on the nature and timing of self-harm.

Psychological treatments can help some people who self-harm, but service users and practitioners often differ in their opinions of what constitutes effective treatment. Furthermore, treatment provision for self-harm remains highly variable and is often inaccessible. Unfortunately, in many settings, there

[*] *Across the globe, there are many Indigenous nations, languages, and cultures, both within and across countries. It is difficult to identify terminology that is appropriate and acceptable to all these groups. We have chosen to use Indigenous peoples to refer to the global grouping of Indigenous nations and use a plural to demonstrate that there is no single Indigenous culture or group, but numerous groups/languages/tribes/ways of living, even within each country. When discussing separate countries, we respect the term/s preferred by most Indigenous peoples within that country; i.e., Māori peoples for Indigenous peoples of Aotearoa/New Zealand; Aboriginal and Torres Strait Islander peoples for Indigenous peoples of Australia; First Nations, Métis, or Inuit peoples for Indigenous peoples of Canada; Native American, American Indian, or Alaskan Native peoples for Indigenous peoples of the United States of America; and Sámi peoples for Indigenous peoples of Norway, Sweden, Finland, and Greenland. Overall, our intent has been to use language that accords respect, dignity, and self-determination to Indigenous peoples and communities.*

is a lack of a caring, empathic response towards people who self-harm and those living in countries where self-harm with suicidal intent is deemed a criminal offence, may find themselves liable to prosecution. Even in some liberal democracies, the police are sometimes used as a first line of response to people who self-harm, compounding feelings of stigma.

We have identified 12 key recommendations that, if actioned, could transform the lives of people who self-harm (see Panel 1).

We already know that tackling the societal drivers of misery can reduce suicide rates - this evidence can also usefully inform government policy in relation to self-harm. From a societal perspective, the punishment of people who self-harm around the world must stop and government approaches should address the conditions that promote self-harm. For Indigenous peoples, effective self-harm prevention strategies should prioritise self-determination and the building of healthy societies, thus empowering cultures to thrive. Indigenous peoples should be able to control their health and social care services and design culturally appropriate prevention and intervention strategies. In LMICs, reducing access to means of self-harm may be particularly important, as well as an emphasis on self-harm surveillance, and a re-distribution of current research funding to places with the greatest need.

In terms of how we communicate about self-harm, the online media industry must take greater responsibility for the safety of their users, particularly young people and other users who may be vulnerable. Discussion about self-harm should focus on relatable stories of survival, recovery, coping, and help-seeking with an emphasis on practical strategies. These stories should ideally be designed and conveyed by people with lived experience. And from the perspective of service delivery, people with lived experience of self-harm should be robustly supported to lead, design, and deliver models of care.

The actions that have emerged from this Commission are ambitious, but we believe that they can be achieved with targeted advocacy and strategic deployment of resources. Success will require ongoing effort by diverse groups across different settings collectively committed to meaningful engagement and action in the long-term. Furthermore, existing fragmented, piecemeal strategies should be replaced with well-coordinated, whole-of-society, and whole-of-government efforts. These efforts must occur in tandem with better integrated health and social care services. By acting now, we believe that it will be possible to achieve a substantial and meaningful impact on the lives of millions of people who self-harm.

INTRODUCTION

Concepts and terms

This Commission is focused on the health and experiences of people who harm themselves. By 'self-harm', we refer to 'intentional self-poisoning or injury, irrespective of apparent purpose'.[1] Self-harm can take many forms including overdoses of medication, ingestion of harmful substances, cutting, burning, or punching. Self-harm is a behaviour, not a psychiatric diagnosis and the phenomenon is complex with a wide variety of underlying causes and contributing factors. In this Commission, we focus primarily on non-fatal self-harm. There is no formal definition for "repetition of self-harm". Throughout the Commission, we use the term "repetition" to refer to instances where an individual engages in non-accidental self-injury or self-inflicted harm on multiple occasions.

There are some behaviours and associated mental conditions which, at an early point in the writing process, were considered out of scope of this Commission. Body modification or mutilation, whether performed for cultural, religious, or social reasons, challenges conventional representations of self-harm. While these practices may involve altering one's body in ways that some might perceive as extreme, we think it is important to differentiate between self-harm and culturally or religiously motivated body modifications. In various societies, body modifications are deeply rooted in tradition, serving as rites of passage, markers of identity, or expressions of spiritual beliefs. In these contexts, the intent is often not to cause harm but to foster a sense of belonging, identity, or spiritual connection. However, the line between self-expression and self-injury can blur, especially when viewed through different cultural or societal lenses. We think it is essential to approach these practices with cultural sensitivity and an understanding of the diverse motivations behind them, acknowledging that what might be perceived as self-injury in one context could be a meaningful and intentional act in another. For different reasons, although anorexia nervosa is, by definition, self-induced, and harmful, most researchers and practitioners working in the self-harm field would not include eating disorders under the broad rubric of 'self-harm'. This is because anorexia is aetiologically distinct from self-harm and requires a different treatment approach to that offered for self-harm.

Self-harm with a fatal outcome (i.e., suicide), has received considerable clinical and policy attention, while self-harm more generally has been neglected. Although for many, an episode of self-harm may not be suicidal in intent, self-harm and suicide are strongly linked. A history of previous self-harm is one of the strongest predictors of subsequent suicide[2] and arguably, all that distinguishes self-harm and suicide is the outcome. Some people who present to hospital with self-harm may die by suicide without intervention. Indeed, in LMICs, because of the high lethality of methods people use to harm themselves, even those with apparently no, or low suicidal intent, may end up dying by suicide. This Commission is focused on non-fatal self-harm rather than suicide and an in-depth discussion about suicide is beyond our scope. Yet, given the complex relationship between self-harm and suicide, we have still referred to the latter construct (as fatal self-harm) in places where it is crucial, as we do not wish to ignore the existence of this important relationship.

There is extensive debate about how non-fatal self-harm should be conceptualised. Some argue that we should dichotomise people into those who have harmed themselves with an intent to die ('suicide attempts'), and those who have self-harmed with no suicidal intent ('non-suicidal self-injury').[3] Indeed, non-suicidal self-injury disorder was included in the fifth version of the Statistical and Diagnostic Manual of Mental Disorders (DSM-5) as a condition in need of further research. Yet some authors argue that there are difficulties with the construct of NSSI.[4] They posit that the prefix 'non-suicidal' belies the fact that there is an association between NSSI and suicidal behaviour. Furthermore, self-harm methods evolve over time, and instances of non-suicidal self-injury (NSSI) can evolve into self-poisoning, and vice versa. Those who advocate for NSSI suggest that it may stimulate treatment research and widen treatment options for individuals who self-harm. Others assert that self-harm is part of a continuum, and that suicide attempts and non-suicidal self-injury are overlapping

phenonema.[4] They suggest any distinction is arbitrary, that it may at best have limited clinical utility, and at worst might be actively harmful because people who are 'non-suicidal' end up being excluded from busy clinical services.

There is no consensus on which is the optimal approach. What is clear, however, is that motivations and intent are fluid, that the behaviours often overlap, and even so called non-suicidal behaviours are associated with current suicide ideation and future suicide. These discussions are far from new. Fifty years ago, the World Health Organisation categorised suicidal behaviour theorists into groups which included 'Binarians' and 'Individualists'.[5] In this Commission we will not revisit these well-trodden debates, but we will instead take a broad and inclusive perspective of self-harm.

Aims and scope

The urge to hurt oneself is not a new phenomenon and accounts of self-harm can be traced back to antiquity.[6] Yet only comparatively recently has the issue of self-harm become a major concern for health professionals as something which needs to be prevented, managed, and treated.[7] Self-harm is responsible for substantial morbidity worldwide and can be a harbinger of risk for premature mortality.[8,9] It is sometimes seen as primarily a problem in young people. Indeed, its onset is often in adolescence,[10] and it is most common in this group.[8] However, self-harm can occur at any age and when it occurs in older adults it is particularly strongly associated with death by suicide.[9,11] The occurrence of self-harm also spans the spectrum of cultural backgrounds and genders.[12]

Systematic reviews and working groups have previously explored the topic of self-harm,[1,13–19] yet for too long, key perspectives have been ignored – in particular, the views of people with lived experience, those from Indigenous communities and those from LMICs. Different cultures often have deep-rooted belief systems, knowledge and histories that diverge from those cultures that are dominant in HICs, and this can lead to very different interpretations about the meaning, causes and significance of self-harm. It is vital to appreciate the cultural differences that shape self-harm because the behaviour shines a light on the impact of structural inequalities on peoples' mental health and wellbeing. For example, for Indigenous communities, self-harm often emerges from the structural and cultural aspects of society and is rooted in colonialism and racism.[20,21] Furthermore, the exclusion of the voices of those who have harmed themselves significantly restricts our understanding of the nature and complexity of self-harm and impairs our ability to help people. A key tension between clinical and lived experience perspectives is that those who self-harm do not necessarily prioritise treatment and prevention as goals. For some people, self-harm is a means of coping, a way of staying alive. For others though, self-harm may be a precursor to suicide. Evidently, self-harm is about both living and dying.[22]

To date, there has been no comprehensive and authoritative synthesis of the literature on self-harm that combines the perspectives of individuals with lived experiences, those from LMICs, and Indigenous communities with mainstream science. In light of this, The Lancet Commission on self-harm addressed the following aims:

1. To review and synthesise the literature on our current understanding about self-harm. To do this, we updated mainstream scientific thinking about self-harm with new evidence on individual and societal factors, and combined this, for the first time, with previously neglected perspectives (individuals with lived experience, those from LMICs and those from Indigenous communities).
2. To identify key gaps about our understanding of self-harm, and by doing so, to identify outstanding scientific opportunities for the field.
3. To identify key actions that could rapidly improve the lives of people who self-harm around the world.

Working methods

Scope and framework

This Commission is the product of a substantial team effort that has taken place over five years. At the outset, an Executive Group for the Commission was formed (PM, HC, NK and ROC), and this group provided overall leadership for the Commission and defined the structure of the final piece. With support from the Lancet editorial team, the Executive determined that we should adopt a wide-ranging and innovative perspective to the issue of self-harm, principally aimed at yielding novel insights rather than repeating the work of prior systematic reviews, or textbook-style distillation of facts about self-harm. To achieve this, we invited Commissioners from Indigenous cultures, from LMIC countries, joining those with knowledge of Western traditions. Highlighting the views of people from low and middle-income countries was deemed essential for promoting equity, cultural relevance and community engagement, in order to improve the lives of people who self-harm, on a global scale. Indigenous communities have a history of marginalisation, colonisation, and dispossession, which has resulted in a lack of representation and influence in policymaking. We also invited Commissioners with expertise in Lived Experience, consistent with ethical and comprehensive approaches to mental health. We adopted this approach as we wished to foster a more inclusive, empathetic, and effective approach to understanding and responding to self-harm. We endeavoured to ensure that all Commissioners had equal voice.

Working groups

The Executive Group convened four working groups (lived experience, indigenous populations, LMIC, individual and societal influences) who were asked to a) summarise the current state of knowledge (related to self-harm), b) to identify key gaps in knowledge and c) to formulate key recommendations for action.

Commissioners

In terms of identifying Commissioners, our primary objective was to convene a team of leading academics, clinicians and lived experience experts, with a balance of representation from within High, Low- and Middle-Income countries, from Indigenous populations, as well as a balance of representation across genders. The Executive Group began with a list of acknowledged field leaders, expanding this using snowballing techniques, and then sought suggestions from the working group leads (AC, DK, OK, JP, MS and PD) once gaps in expertise were identified. The number of Commissioners expanded from 38 to 43 over the course of the commission. Over half of the commissioners are women and 40% are from LMICs or Indigenous communities.

Methods

We encouraged a diverse approach in the synthesis of literature within the working groups. Where there was an established body of literature and reasonable data collection, each group selected key papers from publications identified by the Commissioners. When there were gaps, we also searched PubMed, Web of Knowledge, and PsycINFO using self-harm keywords: “Suicidal behaviour”; “Self-injury”; “Deliberate self-harm”; “Suicide attempt”; “Non-suicidal self-injury”. All searches were restricted to the English language. For the Indigenous population as well as the lived experience working groups, the role of qualitative literature and story knowledge is critical, not only because there is less published “scientific literature”, but because the spoken word, drawings, pictures, long term cultural practices, and history, create knowledge, that is valued and considered as legitimate as scientific methods in Western traditions.

Timeline and Progress

The written output from the working groups was regularly reviewed by the Executive Group and was shared at three online workshops with Commissioners, which was attended by representatives from the team at the Lancet, on 19/12/2019, 19/03/2020, and 23/06/2020. Each working group produced a single document, summarising the literature, their perspectives on new ideas and recommendations for action. The findings and key recommendations from these documents were also discussed at a face-to-face meeting held in Sydney, Australia (attended by representatives from the editorial team at the Lancet; and 35 Commissioners) on 9th and 10th November 2022. At that meeting, agreements and differences were reviewed around the main themes, together with gaps in Commission. Members of the Commission presented the key findings to an audience of 250 stakeholders in Sydney. Together, this allowed us to gain further feedback on the nature of self-harm, its influences, as well as how to treat or support people who self-harm. Wider public health approaches were also considered. Feedback from the audience has been incorporated in this final document.

Limitations

The views expressed in this Commission necessarily reflect those of the contributors. Although we endeavoured to have global representation on the Commission, unfortunately potential participants from Africa were unable to join, the Indigenous groups were primarily from countries with a history of colonisation, and marginalised groups, with high risk of self-harm, such as prisoners, and refugee populations, were not represented. Furthermore, some marginalised groups, with high risk of self-harm, such as, prisoners, and refugee populations, were not represented among our team of Commissioners. Our synthesis of literature was restricted to papers written in English, with the majority of the papers being derived from HIC countries (which reflects the state of self-harm research globally). Although non-English papers were not sourced directly, experts in the LMIC and Indigenous communities did consider unpublished material, including knowledge in spoken form. We acknowledge that there are many gaps in the research literature, specifically, we recognise that there is still much to learn about the distribution and nature of self-harm in LMICs.

Figure 1 summarises the approach we adopted.

Inevitably, with such a large diverse and multidisciplinary group, we did not agree on everything. Indeed, our aim was not to integrate all our different views into a singular voice. Some tensions that exist in relation to the conceptualisation of self-harm defy integration and easy resolution. There were particular tensions about whether or not we should include relevant literature on fatal self-harm (i.e. suicide). When considering the lived experience of self-harm (including, and especially, across different global settings), the line between fatal and non-fatal is very indistinct and extremely difficult to parse out. For this reason, where appropriate, in places, we have judiciously retained the term ‘fatal self-harm’ and distinguished this clearly from non-fatal self-harm. The other area where we experienced differences in opinion related to the role of clinical services in managing self-harm. Professionals often saw cessation of self-harm as a key aim, indeed responsibility, for clinical services. However, for some lived experience contributors, self-harm was viewed as a positive coping strategy or even a core part their identity, not something to be ‘treated away’. In addition, while recognising that clinical services can be important sources of support for those who self-harm (and vital in cases of life-threatening injury), it is equally important to recognise that clinical services can also be sources of harm. People who self-harm may encounter judgemental attitudes from healthcare providers which may discourage them from seeking further help. An over-emphasis on risk assessment rather than therapeutic engagement can make patients feel like they are being scrutinised, judged or excluded rather than supported. Moreover, medicalising self-harm without addressing the underlying emotional issues may result in a focus on symptom management, rather than the provision of care. Furthermore, social and psychological support for self-harm may, in some cases, be more effectively provided in non-clinical, community-based settings.

In Panel 2 we provide a short reflective account from each of the writing groups that contributed to the Commission to capture the respective positions of each writing team.

The structure of this report follows the aims described above. The most important section highlights the actions that we collectively identified as being potentially life-changing for individuals who engage in self-harm. These are grouped under key recommendations for governments; the delivery of services; the media and wider society and finally, recommendations for researchers and research funders.

CURRENT UNDERSTANDING ABOUT SELF-HARM

The epidemiology of self-harm

There are at least 14 million episodes of self-harm annually, representing a global rate of approximately 60 per 100 000 people per year.[23] This is likely to be a considerable underestimate because those who self-harm often do not present to services and there are few routine surveillance systems, particularly in LMICs.[24]

International community and school-based surveys suggest a lifetime prevalence of around 3% among adults and 14% in children and adolescents.[25,26] Rates are higher in females than males and highest in young people aged under 25 years, although self-harm can occur at any age.[26] Rates, particularly in young people, may have increased in a number of countries recently.[27,28] Methods of self-harm are varied, but in general self-cutting is the most common method in community settings and self-poisoning is the most common method presenting to hospitals.[26]

The incidence of self-harm rises sharply during adolescence,[8,10] earlier onset may indicate a more severe trajectory,[29] and rates of youth self-harm are increasing.[30–33] Adolescence is a period of marked transition, neurodevelopmentally, biologically and socially,[8] and mental health problems and risk-taking behaviours often have their onset at this time.[8] An unpredictable and rapidly changing social, economic, and technological environment, the COVID-19 pandemic and even more pressingly, international conflict and climate change, have all increased stress and pressure on young people and that may confer increased risk for self-harm. Young people are often reluctant to seek help if they are struggling and when they do, they usually turn to friends, family members, and online solutions as opposed to healthcare professionals.[34] This is partly due to the stigma associated with self-harm,[35] and partly the result of structural barriers like cost, access, and privacy concerns. These issues are compounded by the fact that some young people who self-harm may be dismissed by services as attention-seeking.[36]

Repetition of self-harm is common. The pooled incidence of non-fatal repetition is 16.3% at one year[37] and one third of people who repeat self-harm within a year report do so in the first month[38] Clinically important risk factors for repetition include the presence of borderline personality disorder, a mood disorder,[39] alcohol misuse, and reporting suicidal plans at the time of the index episode[38] Among those who present to clinical services, suicide is much more common after self-harm than in the general population, with 1.6% of people dying by suicide in the year after presentation.[37] The majority of individuals who self-harm do not present to healthcare services for self-harm[31,40–42] — a phenomenon termed the ‘Iceberg Model’ of self-harm, with people presenting to services being the tip of the iceberg.

Within societies, certain groups are at substantially higher risk of self-harm. Individuals diagnosed with mental health disorders are more vulnerable to self-harm, in particular those diagnosed with borderline personality disorder,[43] depression, anxiety and alcohol misuse,[44] as well as eating disorders.[45] Marginalised groups are also at risk. Lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual/aromantic + (LGBTQIA+) people in HICs have approximately double the risk of engaging in self-harm,[46] a finding that has more recently been replicated in

adolescents in at least one LMIC.[47] Other at-risk groups across different global settings include ethnic minority groups,[48] veterans,[49] prisoners[50] and migrants.[51]

The economic costs of self-harm are considerable and one way of estimating these wider costs is to place a monetary value on all disability adjusted life years lost to self-harm as reported in the Global Burden of Disease Study 2019.[23] This approach has been used to estimate the global economic costs of non-fatal and fatal self-harm for young people up to age 24. Extending this approach to cover self-harm at all ages, and valuing all Disability Adjusted Life Years (DALYs) lost at mean world GDP per capita in 2021, would imply a cost of $639 billion globally for the 34 million DALYs lost worldwide in 2019, with 81% of these costs incurred in countries classed as having a low or middle socio-demographic index (SDI). Globally, 25% of the costs would fall on those under the age of 25, but this increases to more than 33% of costs in low and low-middle SDI countries.

Lived experience of self-harm

In recent years, the lived experience research evidence on self-harm has burgeoned and deepened our knowledge of self-harm beyond traditional biomedical models. People describe diverse motivations for self-harming behaviour, including: self-soothing, self-care, emotional management, expression and communication.[52–54] A systematic review of self-reported accounts of self-harm by Edmondson et al.[55] highlighted additional motivations for self-harm that might be considered 'positive' such as finding comfort, self-protection, validation of identity, self-expression, and enaction of power/agency. Research pre-filtered through a (however well-intended) lens of medicalisation or pathology may, however, be less likely to access such meanings, preventing valuable insights into caring for, responding to, and understanding those who self-harm.

Interview-based studies that have explored accounts or narratives about self-harm have underlined that: self-harm relates to broader social and cultural trends;[56,57] self-harm practices are shaped by social relationships, and class dynamics;[58] some explanations about self-harm are more palatable than others;[59] and that self-harm sometimes intersects with LGBTQIA+ experiences.[60] Participatory research methods, where researchers work collaboratively with people affected by a given issue,[61] recognises 'lived-experience' not only as an object of study, but as a valuable source of insight or expertise. Autoethnography, where the person with 'lived-experience' is both researcher and researched, has provided rich and powerful accounts where stigmatising discourses are resisted and disrupted.[62–64]

Qualitative research has indicated significant phenomenological differences between different forms of self-harm[59] and the complex social, political, cultural religious and spiritual meanings that these acts can have.[65] Yet many studies of self-harm ask only a single question, incorporating a range of methods and meanings under one category (see Figures 2 and 3). Those researching or working with individuals with experience of self-harm should therefore be prepared to engage with uncertainty, with an openness to multiple and changing methods and meanings.[55]

Self-harm is readily identified as 'stigmatised', in ways that relate to broader stigmas about mental health difficulties. Yet there are also unique features of self-harm which accentuate stigma.[66] Self-harm is often visible, and it is active – it involves 'doing something' to oneself.[54] In this way, it may parallel other practices that are marked as pathological or stigmatised, such as drug and alcohol use.[59] Self-harm also shares with these an intimate relationship with society and culture,[67] as the meanings attributed to it are dynamic, and shaped by social factors, including gender, sex, age, disability, class and caste.[60,68] Whether self-harm is recognised, punished, criminalised or treated with care and empathy can be affected by not only the meanings attributed to self-harm, but also to the social position of the person who self-harms and where in the world they live.[69,70]

Globally, the types of care available to people who experience self-harm varies widely. In many countries, financial barriers are in place, inhibiting access to therapy or to care for wounds or injuries.

Geography further shapes this picture, with those living in more rural communities facing particular challenges. Individual responses to self-harm, taking place in clinical spaces, might be understood as treating symptoms, rather than causes, and in doing so, not responding fully to the lived experience of self-harm. Such lived experiences are located often in situations of oppression, marginalisation, and disenfranchisement.[71] While responding well to self-harm in clinical spaces is vital – so too is responding effectively to the structural drivers of the misery which often precipitates self-harm: colonialism, capitalism, racism, heteropatriarchy; drivers that target diverse groups, bodies, cultures, and peoples differently.[56,60,72]

Self-harm in low and middle income countries

The distribution of self-harm globally is unequal with the greatest burden experienced in LMICs.[24,73] Definitive sources of data are lacking in these settings with few surveillance systems[24] and therefore international comparisons are based on indirect intelligence. The Global Burden of Disease Study[23] uses various data sources to model the incidence of self-harm. Coverage is far from complete and only two African countries had data available to include in the models. Furthermore, data quality, case ascertainment, and likelihood of presentation to health services varies considerably between countries and so estimates should be interpreted cautiously. Rates of self-harm appear to be the highest in northern hemisphere and the lowest rates appear in Africa, Latin America, and the Caribbean (although there were few countries with data in these settings). Yet one finding which is relatively consistent between high income and low and middle income countries is the higher incidence of self-harm in young people (those aged under 25 years). Globally, India accounts for the largest proportion of global self-harm episodes – nearly one third of the total.

As in HICs, self-harm may be used by individuals in LMICs to serve a variety of functions, including emotional regulation and the communication of distress.[74] The major difference is that in HICs, these acts typically employ means which have a low case fatality, whereas in LMICs the most frequent method of self-harm is highly toxic pesticide ingestion – a method which often results in death (see charts on page 43 of Eddleston & Phillips[75]). In LMICs where data are available on near-fatal self-harm by pesticide ingestion, these acts tend to be associated with low suicidal intent and occur within 5-30 minutes of self-harm thoughts.[76,77] Simply put, in LMICs, it is difficult to meaningfully separate self-harm from suicide. Rates of self-harm repetition appear to be significantly lower in certain LMICs, because pesticide self-poisoning has a high case fatality rate, thereby eliminating individuals at a higher risk of repetition.[78]

The available evidence suggests substantial global differences in the correlates of self-harm in LMICs.[78,79–106] For example, it is widely acknowledged that men are at higher risk of fatal self-harm than women in HICs, by a ratio of approximately 3:1.[79] However, this varies widely by region, with a higher female age-standardized rate of fatal self-harm compared to the global female average rate of fatal self-harm [79] The high rate of fatal self-harm seen in young women may be explained by the high case fatality associated with pesticide self-poisoning.[107] When comparing the age and sex profiles of those who self-harm using self-poisoning in Sri Lanka compared to England, the pattern is similar, with high rates in young females. The notable difference is the case fatality ratio, which means that a larger proportion of those who self-harm with poisoning in Sri Lanka die.

Some risk and protective factors also appear to be context specific. For instance, marriage and having young children are protective factors against self-harm based on HIC data, yet they appear to be risk factors (especially for women) in some Asian settings.[88,89,108] While 80%-92% of those who self-harm in HICs are estimated to meet diagnostic criteria for a psychiatric disorder, this proportion is estimated to be much lower in LMICs (pooled estimate: 58% fatal self-harm; 45% non-fatal self-harm).[96] Nonetheless, it is important to note that substantial heterogeneity exists between studies of psychiatric morbidity among self-harm populations in LMIC. It is possible that there is a genuinely lower prevalence of psychiatric disorder among people who self-harm from LMIC countries. However, it is also possible that psychiatric morbidity is under-detected in LMIC settings.[109]

The significant reduction of China's fatal self-harm rate by nearly two thirds over two decades[81] has received the attention of policymakers and international media.[110] Possible explanations include improved standards of living, medical care, access to education, and economic development.[92,111] Although these may be part of the explanation in China, it does not necessarily follow that improvements to these macro-social drivers in other LMICs would yield similar reductions. For example, a consistent finding over time is that Kerala, an economically developed state in south India, with strong social indicators and a robust public health system,[112] has one of the highest rates of fatal self-harm in India, whereas less developed northern states, such as Bihar, have significantly lower rates.[113]

Indigenous peoples

Indigenous peoples across the world, especially Indigenous youth, are disproportionately impacted by self-harm[114] – see Panel 3.[115–127] In particular, there is growing recognition of the link between climate change and Indigenous mental health and self-harm.[128] Yet current estimates of self-harm among Indigenous peoples are likely to be conservative. This is because Indigenous self-harm rates are often identified by hospitalisations which only represent the tip of the iceberg. Furthermore, Indigenous peoples are often underrepresented in general population and community studies of self-harm.[129] The need for better data sources with Indigenous data governance and sovereignty is therefore becoming increasingly recognised.[130,131]

Indigenous peoples across the world are disproportionately impacted by mental illness, social and emotional distress, negative early life experiences, substance use, incarceration, homelessness, and interpersonal violence, which are associated with increased risk of self-harm.[122,132–135] The pervasiveness of this crisis of health inequity, of which self-harm represents the tip of the iceberg, "tell plainly the structural nature of our problem".[136]

Though there is huge diversity between and within Indigenous peoples across the globe, there are also important commonalities, such as holistic knowledge systems and experiences of colonisation. The alternative worldview offered by Indigenous self-harm research is relational, holistic, and systems-focused. Subsequently, self-harm is conceptualised by Indigenous researchers as a mourning response to intense, enduring, and pervasive grief, loss of hope, and enduring despair following attempted genocide and centuries of colonial trauma and oppression.[137–139]

"After extensive consultations and study, Commissioners have concluded that high rates of suicide and self-injury among Aboriginal people are the result of a complex mix of social, cultural, economic and psychological dislocations that flow from the past into the present. The root causes of these dislocations lie in the history of colonial relations between Aboriginal peoples and the authorities and settlers who went on to establish 'Canada', and in the distortion of Aboriginal lives that resulted from that history. We have also concluded that suicide is one of a group of symptoms, ranging from truancy and law breaking to alcohol and drug abuse and family violence, that are in large part interchangeable as expressions of the burden of loss, grief and anger experienced by Aboriginal people in Canadian society… Collective despair, or collective lack of hope, will lead us to collective suicide." (Royal Commission on Aboriginal Peoples, p. 2)[140]

This grief response, the physical manifestation of which includes self-harm, has been described as cultural soul wounds,[141] wounded spirit,[142] mauri noho - languishing spirit[143] or kahupō which refers to hopelessness or spiritual blinding.[144] The spiritual wounding is a result of genocide, cultural alienation and forced acculturation to the colonial state and leads to fragmented identity and disrupted personal and societal narratives. The suffering is theorised to take root in kinship and transfers inter-generationally until grief resolution,[145] or mauri ora - flourishing life force,[143,146] strong spirit or strong heart[147] is achieved.

Colonisation and racism are key factors in the aetiology of Indigenous health crises, including self-harm. They are also the most complex to address, empirically predict or measure, and remain under-examined in the conceptual underpinnings and intervention science driving much research in the field.[21,148]

"There is no single clear diagnosis to this crisis, yet certain factors have been identified as key drivers behind the phenomenon of self-harm amongst our people. The brutal history of colonisation, the inter-generational trauma left by Stolen Generations policy, and ongoing racism, combined with the everyday realities in many Aboriginal communities, such as unemployment, poverty, overcrowding, social marginalisation, and higher access to alcohol and drugs. Together they have created a very difficult life context in many communities. With muted voice, the pain and hurt being experienced by our young is being turned upon themselves." (Gooda and Dudgeon, p. 7)[149]

Colonisation was characterised by the violence of frontier wars and massacres, attempted genocides, dislocation and dispossession of land, assimilation and child removal policies, and systemic racism and exclusion. The aim of colonisation was to destroy Indigenous cultural and kinship structures, processes of knowledge sharing, and spiritual and traditional practices, which in turn led to the breakdown of social and family functioning, with associated transgenerational trauma, stress, marginalisation and powerlessness.[150] The impacts of colonisation on individuals and populations are difficult to quantify. Studies investigating the long-term psychological effects on the survivors of Indian Residential Schools in Canada have identified high rates of mental disorder, impaired relational attachment and developmental maturation, negative cascades of events, and social marginalisation.[151] The impacts of government relocation policies in the United States and Canada include generational impacts on substance use, mental health problems, and parental warmth and support for children.[152] Similarly, in Australia, the Stolen Generation survivors and their descendants have experienced significant social, economic, and health disadvantage compared to the Indigenous population that has not been removed.[153] For example, 90% never completed high school, 70% rely on government payments, 67% live with a disability, 40% have experienced homelessness, and 39% report poor mental health. In New Zealand, the impact of incarceration of Māori men and women, removal of children from their parents, and decades of abuse in state institutions has resulted in educational disadvantage, low economic status, health inequities and disconnection from cultural foundations and supports.[154,155]

The impact of colonisation and racism as drivers of inequality among Indigenous peoples has been devastating. Colonialism is the policy of domination and control that is pursued by the powers of one state against another for the economic benefit of the former. Colonialism was primarily achieved through colonisation, the active process of establishing and maintaining a colony. Racism is a structural and social determinant of health and mental health.[156] The ongoing individual and collective injury associated with repeated exposure to race-based stress is described as racial trauma.[157] These two factors drive unequal power relations in society and have complex ripple effects at economic, political, and cultural levels.[137,142,158–161]

Individual-level risk factors for self-harm

People engage in self-harm for a wide variety of reasons. The most often endorsed contributing factors are to decrease or escape from aversive psychological states,[162–168] to effect change in their environment, and in some cases, to end their life.[41,166] Conversely, some individuals also engage in self-harm to prevent themselves from attempting suicide.[55] However, there is generally no single reason why an individual engages in self-harm, and it is a complex and multifaceted phenomenon. Risk factors for self-harm include both internal (e.g., neurobiological, psychological) and external (e.g., interpersonal relationships, culture, and the socio-political landscape) factors, which together form the context in which self-harm thoughts and behaviours emerge.[106,169,170]

Numerous individual-level psychological and social factors are associated with self-harm, including emotion dysregulation,[171] affective variability,[172] perfectionism[173] and self-criticism,[174] anger,[175] fear,[176] adverse childhood experiences,[177,178] beliefs and expectancies about self-injury,[179,180] interpersonal violence[181] and peer victimisation,[182,183] peer and family relationships,[103,184–186] social support,[181,187] life problems,[188] social problem-solving,[189] pain experiences,[190,191] hopelessness,[192,193] psychopathology,[177,192,194] sleep problems,[195] exposure to others' self-harm,[103,196] media and online exposure to self-harm and related content,[197–199] and past-history of self-harm,[192] suicidal ideation,[181,193] or behaviour.[192] See Panel 4 for an overview.

Self-harm is one of the nine core symptoms of Borderline Personality Disorder (BPD). Individuals diagnosed with this condition experience enduring instability in the domains of emotion regulation, interpersonal relationships, impulse control, and self-image.[200] BPD has a community prevalence of 2%[201] and individuals diagnosed with BPD experience serious health problems and a suicide rate that is fifty times higher than it is in the general population.[202] As is common with other groups who engage in repetitive self-harm, the motives for the behaviour often vary between episodes, although a reduction in tension, anger and dissociation are commonly cited as being of particular importance in people with BPD.[203] Ecological momentary assessment studies indicate that among young people diagnosed with BPD, the acute onset of negative feelings is strongly associated with subsequent incidents of self-harm.[204,205] It has even been suggested that self-harm may be an early, readily observable phenotypic marker of later BPD,[43] although currently there is no robust longitudinal data to support this. Perhaps more importantly, self-harm is often targeted as a focus for the psychological treatment of people with BPD. Within this population, there is evidence showing that compared to general psychiatric management, psychological interventions such as dialectical behaviour therapy, and mentalisation based therapy are moderately effective at reducing the occurrence of self-harm.[206]

There are also neurobiological contributors to individual risk for self-harm. A key challenge in addressing this topic is that within this particular field, a spectrum of behaviour has been considered including "suicidal behaviour," and non-suicidal self-injury (NSSI). Indeed, a range of studies regarding the neurobiology of self-harm have examined either "suicidal behaviour" or NSSI. That said, neurobiological factors related to self-harm can be broadly organised into three distinct categories:[207] 1) **distal factors**, which may be present from early in life, such as genetic and epigenetic processes;[208,209] 2) **proximal or precipitating factors** such as stress and associated biological alterations,[210] including pain, and deficits in reward processing[211] that may immediately precede a single episode of self-harm; and 3) **mediating factors**, which connect the effects of distal and proximal factors, such as impulsive-aggressive behaviours and their neurobiological correlates, including molecular,[212] brain and neuroendocrine markers.[213] Adolescence is a period of vulnerability, when the onset of self-harm[10,163] and the development of psychopathology[214] commonly take place, in a context where new social skills are also developed.[215] As such this is a period of great interest for understanding the neurobiology of self-harm.

From the field of genetics, no specific genes have been conclusively identified as conferring risk for suicidal behaviour,[216] although recent genome-wide association (GWAS) studies have identified 12 significant loci associated with self-harm, some of which remained significant when adjusting for the presence of mood disorders.[217–219] A challenge is that the loci identified in these latter studies are in non-coding parts of the genome and thus the exact protein and function that is being impacted remains to be determined. However, these loci are close to genes such as *CACNG2*, *NLGN*, *DRD2* and *SLC6A9*, that code for proteins relevant to behaviour and these discoveries suggest that suicidal behaviour may have a unique genetic architecture, distinct from that of accompanying psychopathology.

The ability of the brain to adapt to both internal (emotional, cognitive, and behavioural) and external (interpersonal, social, and environmental) contexts, has led to increasing interest in the role of epigenetic processes in self-harm — a key mechanism through which external contexts and events are internalised and biologically encoded for a given individual. For example, exposure to early-life

adverse experiences is associated with several stable changes in epigenetic markers, such as DNA methylation and histone modifications, which differentially regulate systems such as the HPA-axis,[210,216] and in turn, are associated with increased risk of suicidal behaviour.[209] Individuals exposed to early life adversity display an increased response to psychosocial stressors presented in laboratory settings using tests such as the Trier Social Stress Test,[210,220,221] and these individuals are also at elevated risk for suicidal behaviour.[210,220,222] However, to date, no studies have empirically investigated childhood adversity-related epigenetic changes and their relationship to self-harm.[207] Epigenetic changes in certain biological pathways, such as those related to stress response, have been implicated as possible mediators of the effects of the early-life environment on risk of self-harm, possibly through the regulation of behavioural traits such as aggression and impulsivity.[208,210,213,222,223] As well, suicide attempts were recently reported[224] to be associated with 3 probes for methylated DNA in a statistically robust manner, including methylation of a non-coding locus on chromosome 7, and 2 loci in the genes for PDE3A (from a family of enzymes that hydrolyse energy generating cAMP and cGMP); and RARRES3 (with function related to skin aging), respectively. Nonetheless, more work to clearly identify the pathway from the external event, to biological encoding through epigenetic modifications, behavioural characteristics, and the risk of self-harm, is warranted.

Relatively few studies have investigated the neural correlates of non-suicidal self-harm,[211,225] whereas a sizable literature has focused on the neural correlates of suicidal thoughts and behaviour.[211,216,226,227] Self-harm appears to be associated with alterations in volume or connectivity in cortico-striatolimbic systems that regulate emotions and impulsive behaviour. Among the cortical structures most commonly identified are the prefrontal, cingulate, and insula cortices whereas among the limbic structures, studies have particularly pointed to the amygdala, hippocampus, thalamus, and striatum.[226] A large consortium investigating structural changes pointed to lower frontal pole surface in youth with self-harm.[227] Functional neural correlates of self-harm have generally focused on processing of social and reward information, emotions, cognitions, and self-related information.[211] Given literature connecting suicidal behaviour with psychic pain or "psychache," pain pathways have also been investigated and altered pain processing has been associated with self-harm,[190,191] and with suicidal behaviour.[228] Yet, neurobiological evidence regarding the mechanisms of action and the integration of these findings with broader theories about self-harm are lacking.[207]

Enhancing our understanding about the neurobiology of self-harm may help inform the development of effective interventions.[16,211] Yet, currently, we do not have a clear picture about whether particular neurobiological risk factors are associated with general psychopathology, or are specific to self-harm. Furthermore, we know little about how neurobiological factors associated with self-harm relate to self-harm thoughts and behaviours outside of the laboratory, and over what timeframe. Combining, neuroimaging with real-time digital monitoring techniques, might enhance understanding about the relationships between distal neurobiological risk factors for self-harm as they occur during individuals' normal day to day lives.[207,211]

Social and cultural contributors to self-harm

Self-harm often arises in the context of deficits in key social determinants of health which can lead to hopelessness and misery across societies.[12] Social determinants that influence health equity include income and social protection, education and literacy, employment and job insecurity, food and water security, housing and the environment, early childhood development, social inclusion and discrimination, structural conflict, and access to health services. These factors account for up to 55% of health outcomes[229] and are also likely to heavily influence the distribution of self-harm within populations. At both individual and population levels, social determinants increase health inequity and subsequently increase the risk of self-harm and this is particularly so for people living in LMICs and for Indigenous peoples.[116,230,231]

A multitude of structural factors in societies may contribute to the higher rates of self-harm seen among women, compared to men. Women are disproportionately affected by domestic violence,

sexual harassment, and other forms of gender-based violence. The trauma from such experiences can lead to mental health struggles, and in this context, self-harm may emerge as a coping mechanism. Sexual discrimination and lack of opportunities in education, employment, and leadership contribute to feelings of powerlessness, which may in turn lead to mental health difficulties and associated self-harm. In addition, women are more likely to experience economic hardship and dependency due to wage gaps, higher rates of part-time work, and responsibilities for unpaid care work. The associated financial strain can adversely affect mental health and may lead to self-harm. Furthermore, social media amplifies the prejudices and attitudes of our societies and facilitates their spread. All these societal factors interact and are likely to be closely linked to the increased rates of self-harm among women.

In HICs, socioeconomic inequalities play a substantial role in hospital presenting self-harm[232] and represent an important potential target of social policy interventions. Moreover, the incidence of self-harm is substantially higher among homeless people compared to those with stable housing.[233] Adolescent offspring of parents with lower education and lower income are more likely to engage in self-harm.[234] Furthermore, change in socioeconomic status plays a key role in shaping trends in self-harm. For example, during the 2008 global economic crisis, self-harm presentation rates to hospital increased in areas with greater unemployment.[235]

While HICs may have advanced economies, they are not exempt from issues related to social inequalities experienced by Indigenous peoples or those living in LMICs. Even in wealthy nations, structural inequalities persist, with minoritised groups facing discrimination in employment, education, and healthcare.[236] Certainly, within HICs, experiences of marginalisation and racism contribute to stressors that increase vulnerability to self-harm. Some ethnic minority communities living in HICs have experienced colonialism or historical trauma, and this contributes to the ongoing mental health challenges they face, which may in turn manifest as self-harm. Immigrants and their descendants living in HICs may face migration-related stressors and acculturation challenges. The process of adapting to a new culture while preserving one's cultural identity can create unique mental health stressors, which increase the risk of self-harm, particularly among younger migrants.[237] Feelings of alienation or cultural conflict can contribute to mental health struggles and increase the risk of self-harm. Individuals at the intersections of multiple marginalised identities, such as being both an ethnic minority and a migrant, may face compounded challenges.

Furthermore, healthcare disparities, including limited access to culturally competent mental health services, can affect ethnic minority populations.[238,239] Inadequate representation of diverse perspectives in healthcare systems may result in services that do not address the unique needs of these populations. Negative stereotypes and misrepresentation of ethnic minority groups in media may also contribute to the perpetuation of harmful narratives. This in turn, this may influence societal perceptions which increase marginalisation and stress within communities,[240] and thus also conceivably increase the risk of self-harm.

Within HICs, all these factors can shape the overall social context in which minoritised individuals navigate mental health challenges. Addressing the impact of these intersections in HICs requires acknowledging and dismantling systemic inequalities, promoting cultural competence in healthcare and support services, and fostering inclusive policies that recognise and respect diverse identities and experiences.

As Ishita Mehra discusses in Panel 5 focusing on an Indian context, there are complex relationships between social structures (gender, caste) and economic organisation and availability of services. These shape and are a part of the lived experience of self-harm, further complicating attempts to fix what ‘self-harm’ is and how best to respond to it.

As Ishita Mehra’s commentary also illustrates, attending to lived experience means taking seriously the social and cultural drivers of self-harming behaviour. Self-harm is not equally distributed across different social groups[71] and the meanings and ‘functions’ it may have vary according to the social

location of those who self-harm. However, social, political, cultural, and ecological aspects of self-harm are often ignored, or are only superficially acknowledged, resulting in narrow interpretations of self-harm as a pathological sign of psychiatric disorder.[55,59,241,242] This individualising perspective may not sufficiently address social and structural drivers of pain and misery,[241,243] and may result in individual interventions that ignore wider factors that impinge on wellbeing.

All of these factors must be considered in the context of a society's pre-existing rates of self-harm as well as socio-cultural attitudes, particularly those that may encourage shame, and/or hopelessness. The latter can be shaped by cultural messaging and portrayals in news, entertainment, and social media.[197] The cultural milieu may have a substantial impact. Both explicit and implicit messages about what constitutes socially acceptable coping strategies likely have a strong influence on whether individuals self-harm.

Commercial determinants of self-harm

Whilst the recognition of the commercial influences on population health is growing, the contribution of corporate activity on self-harm risk is largely ignored and under-researched. Given the broad contributing factors for self-harm, the opportunity for commercial influence is significant, and their influence may be greater in LMICs.[244] Outlined below are examples of two of the key industries that influence self-harm and suicide prevention (directly and indirectly).

Agrochemicals

Perhaps one of the best examples of industry involvement in self-harm prevention is the pesticide industry, which has funded World Health Organisation (WHO) and International Association of Suicide Prevention activities in the past. Pesticide-related self-harm deaths account for a large proportion of suicide deaths in many LMICs,[245] and given the significant case fatality associated with pesticide ingestion,[107] many acts of self-harm with no/low suicidal intent are translated into deaths. There is strong evidence that banning acutely toxic, highly hazardous pesticides is the most effective way of reducing self-harm deaths in LMIC,[246] and has the potential to save lives in the immediate term. An industry favoured alternative is the secure storage of pesticides, a strategy that was developed during industry funded workshops and for which funds were provided to WHO for feasibility studies.[247] There is, however, no evidence showing that the introduction of locked boxes to households is effective in reducing pesticide-related self-poisoning.[248] Despite this, industry-supported reviews still promote continued efforts into expensive, time-intensive trials to test out "community interventions that show some promise for reducing pesticide suicides by restricting access to means".[249] Furthermore, emerging evidence suggests that the pesticide industry has put profits ahead of self-harm prevention in relation to the addition of safety measures for one of their highly toxic products.[250] The extent to which the pesticide industry has influenced self-harm prevention is unknown, but it is likely all-pervasive including delaying regulatory action, misclassifying toxicity, and diverting attention towards risk factors that have lower prevalence in pesticide self-harm deaths (e.g., mental disorder).

Alcohol

Alcohol is a known risk factor for self-harm.[251,252] The alcohol attributable fraction for fatal self-harm is as high as 18% (i.e., assuming causality, removing this exposure would prevent roughly 140,000 fatal self-harm deaths annually). With increasing awareness of alcohol-related harms and government regulation, many HICs have seen reductions in overall alcohol consumption.[253] The shrinking market has resulted in industry focusing their efforts on other avenues for profit generation, namely LMIC markets,[254] which have seen steady growth in alcohol consumption.[253] Evidence from the African continent has documented corporate influences on health, where companies are lobbying governments and guiding policy to support growth.[254] The alcohol industry has not only influenced but has provided (exact) wording for national policy documents in at least 4 sub-Saharan countries which are

in line with the industry's policy vision, but against public health.[255] Notably three of the countries have a fatal self-harm rate that is 2-4 times higher than the global average, with Lesotho and Botswana in the top 5 countries with the highest rate globally.[256]

The field of self-harm prevention has largely neglected the study of the overt and covert influences of industry. The above examples are a small selection, research into the influence of other industries of relevance to self-harm, such as the gambling industry and the pharmaceutical industry, is also warranted. We know little about the process and tactics used by these companies to subvert preventative activities and policies, and this hinders our ability to counteract them.

The influence of media on self-harm

Despite substantial recent public health efforts in HICs to decrease stigma and to increase and improve discourse about mental health, rates of self-harm are increasing. A scan of the media environment may yield clues, given that media exposures can be among the most powerful influences on behaviour at a societal level.[257–259] The social environment influences behaviour through social learning whereby individuals may emulate the actions of others with whom they identify'.[260] This happens at a macro level (e.g., identification with media portrayals of celebrities or with fictional characters who engage in self-harm) and at a micro level (experiences of self-harm behaviours in family and friends/peers). Empirical evidence suggests that people exposed to self-harm in others, are more likely themselves to engage in self-harm.[261]

Widespread depictions of self-harm as a "useful" and/or culturally sanctioned behaviour have almost certainly resulted in social learning across multiple domains – within peer groups, via social media platforms, in popular culture, and in the entertainment media (as an example, see Panel 6 for a quotation from the Netflix series '13 Reasons Why').[257,258,262] Cutting for emotional regulation, for example, a behaviour once considered restricted to people diagnosed with borderline personality disorder,[263] is now much more widely practised in youth across mainstream populations, especially among young women,[31] and this has likely to have arisen through a combination of these mechanisms.

Visual images of self-harm, which may be particularly powerful, are pervasive and this fact must be contextualized with revelations that social media platforms have not taken sufficient action to prevent their algorithms from pushing potentially harmful and distressing imagery at users, including young people[264] who may be especially susceptible to suggestion. These exposures likely serve to increase the psychological (or cognitive) availability of self-harm as a coping strategy in general and of specific methods of self-harm such as self-cutting. In other words, mainstream populations worldwide have recently received a steady stream of information on "what to do", and "how to do it" with respect to self-harm often with the highly contextualised subtext that this behaviour is somehow fashionable or acceptable or the most "normal" way to react to distress. These messages are sometimes paired with the message that the alternative of help-seeking is ineffective or counter-productive, as was the case in '13 Reasons Why'.[258] '13 Reasons Why' is an instructive example as some have argued that it encapsulates numerous aspects of problematic cultural messaging including that help-seeking is useless, that self-harm with and without suicidal intent are effective ways of coping, how to go about these behaviours, and that the responsibility to prevent a person's self-harm rests only on others. The messaging landscape, which that series is only one example of, informs cultural norms which may have inadvertently entrenched self-harm as an accepted coping behaviour. That said, emerging qualitative evidence indicates that the relationship between exposure to media narratives and self-harm practices may be far more complex and should be further interrogated.

While social media is often linked with negative impacts on mental health, it may also have protective effects under certain circumstances. Social media platforms provide opportunities for individuals to connect with others and this may be particularly beneficial for people who self-harm who are isolated, or who have difficulty forming in-person connections. For these individuals, online support networks may offer emotional support, helpful advice, understanding, and even a sense of belonging. However,

clearly the impact of social media on mental health varies among individuals, and this area warrants ongoing scrutiny and investigation.

Psychosocial and pharmacological treatments for self-harm

Three recent high-quality systematic reviews have highlighted a paucity of good quality evidence regarding effectiveness of psychosocial and pharmacological interventions to treat self-harm in adults[16,17] and children and adolescents.[15] Whilst the number of randomised controlled trials (RCTs) testing efficacy of psychosocial interventions for self-harm in adults[17] and children and adolescents[15] has increased since the previous intervention reviews in 2015, there were no new RCTs of pharmacological interventions for self-harm identified for adults[16] or children and adolescents.[15] In adults, Cognitive Behavioural Therapy (CBT) may reduce repetition of self-harm and Dialectical Behaviour Therapy (DBT) may reduce frequency of self-harm repetition, however trial evidence reviewed was low to very low quality, meaning there is a high degree of uncertainty about the effectiveness of these interventions to reduce self-harm.[17] Moderate to high certainty evidence indicated that mentalisation-based therapy and emotion-regulation therapy may reduce self-harm repetition, however there were very few trials investigating these interventions.[17] More recently, there has been growing focus and evidence on brief interventions to reduce self-harm. [216,265] Another challenge for the treatment field is that it is not clear whether any of the psychosocial interventions work for specific sub-populations (e.g., men). For adolescents, Dialectical Behaviour Therapy (DBT-A) may reduce self-harm repetition, but again clarity regarding the effectiveness of this treatment is highly uncertain given the very low to moderate quality of evidence.[15] Interventions for self-harm in adolescents may be more effective if they have some focus on family interactions,[266] yet a multi-site RCT found no benefit of family therapy over treatment as usual in reducing self-harm in adolescents.[267] Both the intervention and control participants received a mean of five sessions, while meta-analysis indicates that interventions with more treatment sessions are associated with significant reductions in self-harm. [266] The intervention was more effective for participants who reported both poor family functioning and ease in discussing emotions, suggesting benefit from tailoring interventions to specific families.[268] Although current evidence in children and adolescents does not indicate CBT for self-harm reduction, the (low to moderate quality) evidence for its effectiveness in reducing repeat self-harm in adults may indicate there is value in further developing CBT-based interventions for self-harm in children and adolescents.[15]

Most RCTs of pharmacological interventions for self-harm in adults[†] are very low to low quality and have largely focused on the use of antidepressants and their utility in this regard remains uncertain.[16,269,270] Nevetheless, several high quality RCTs have investigated the impact of lithium on suicidal behaviour, since observational and naturalistic data suggests lithium reduces risk of suicide attempt and suicide death. The handful of RCTs comparing lithium to placebo or to an active comparator have had disappointing results[271–273] in three different populations: adults with a recent suicide attempt and affective spectrum disorders,[271] adults with Bipolar Disorder and past suicidal behaviour,[272] and US veterans with a mood disorder at risk for suicide.[273] In contrast, an international multi-centre trial comparing the effectiveness of clozapine with olanzapine, in the management of suicidal behaviour in schizophrenia, found that patients treated with clozapine showed a greater reduction in suicidal behaviour compared with those treated with olanzapine.[274] These findings have also been replicated.[275,276] Studies of ketamine — either intravenous or intranasal — have been promising. Over the last decade, several groups from multiple countries have shown positive effects of ketamine on suicidal ideation. Of note, many of these studies do not have suicidal behaviour as an end-point and negative studies do exist (for a review see Nikayin et al.[277]). Thus, there remains a strong need to develop a pharmacologic armamentarium to address risk of suicidal behaviour.[16]

Even when evidence exists for means of preventing and treating self-harm, such as the value of psychosocial assessment, there is a major implementation gap.[278,279] Indeed, much could be achieved

[†] *In the study of pharmacological treatment of self-harm, the terminology in relation to self-harm and suicidal behaviour is heterogeneous and for accuracy, we have retained the terms used by the study authors.*

simply by ensuring that existing evidence-based strategies for preventing and treating self-harm are used in practice. Panel 7 summarises the current knowledge about treatments and interventions for self-harm.

Healthcare responses

Much self-harm never comes to the attention of health services. For example, a household survey from the UK suggested that only half of adults received help from clinical services following self-harm.[280] Rates of help seeking for adolescents are even lower, with a large UK multicentre study finding that just 1-in-7 adolescents presented to hospital following self-harm.[40] Whilst data on help-seeking following self-harm in LMICs is lacking, there is some evidence from Ghana and Malaysia suggesting that young people who self-harm are unlikely to access services.[281,282] Healthcare use after self-harm may be even lower in settings where self-harm is criminalised. Yet globally health services have an important role to play in helping people who self-harm. In many HICs, self-harm is a common reason for presentation to health services. People who present to primary care, emergency departments or mental health services with self-harm have a much higher risk of suicide than the general population.[37,283,284] There is also some evidence of this in LMICs.[78,285] Clinical services therefore have an opportunity and responsibility to intervene when people seek help.

Treatment provision for self-harm remains highly variable, but an essential component is a caring, empathic response. Unfortunately, service users in many settings still report adverse healthcare experiences.[286] Comprehensive psychosocial assessments can facilitate access to evidence-based aftercare but perhaps more importantly can be therapeutic in themselves.[287] An undue focus on risk – either in the form of broad 'high' and 'low' risk categories or scores on risk scales – is experienced by patients as unhelpful.[288] Such risk assessments have little predictive validity even in prospective studies.[289] A large systematic review aggregated positive predictive values and found that risk assessments were incorrect in their designation of high risk 75%-95% of the time.[290] Some have argued that the challenge is that we simply need to improve risk assessment – AI approaches have been suggested as one promising approach.[291] However, the issue is the impossibility of predicting statistically rare events even in high-risk populations. This has been discussed extensively in the literature.[292] Risk assessments can also have adverse effects - they may provide false reassurance or exclude people who will go on to repeat self-harm.[288] They are also sometimes used as a post-hoc way to rationalise treatment decisions[288] (e.g. 'this patient is not high enough risk to warrant in-patient admission' or 'this service user has active thoughts of self-harm and so is too high risk for our service'). Leaving prediction behind does not of course equate to not assessing people. Some qualitative work has suggested how assessment/risk assessment practices might be improved (making them more individualised, collaborative, involving families, undertaking assessments which directly inform management).[288] A focus on clinical needs (rather than risk) and population-based approaches to intervention have been suggested as alternatives to a high-risk paradigm. Aftercare is an important component of management and should be provided quickly since follow up studies conducted in HICs suggest that repetition is most likely in the period immediately after a person has self-harmed – one in 10 people who repeat self-harm after attending hospital will do so within 5 days of presentation.[38]

A number of clinical guidelines are available internationally.[1,13] These summarise the latest evidence and provide research or consensus-based recommendations for health services. However, these are generally from HICs. The role of health systems in self-harm in LMICs is less certain. There are few data on help seeking after self-harm and health and social care services may themselves be less available in LMICs. In LMICs where we have data to suggest repetition is low,[78,293,294] any health response must focus on primary prevention by supporting individuals to address the underlying risk factors for self-harm. These are likely to be factors which would be difficult to address in health services alone (e.g. poverty, domestic abuse), and so the healthcare response needs to act to join up existing services to best support individuals. This might be best supported by community health workers in these settings who have intimate knowledge of their communities.[295]

NEW WAYS OF THINKING ABOUT SELF-HARM

Developing an evidence base with lived experience at its core

It is essential that research about self-harm engages meaningfully with lived experiences (e.g., Figure 4). Unfortunately, research about self-harm has prioritised methods which rely on quantitative approaches, drawing on statistics rather than stories.[296] This may have resulted in an impoverished understanding of experiences of self-harm and how best self-harm might be responded to across different arenas of social life.[297,298]

Qualitative methods are a key approach which can centre lived experience in research. In the context of self-harm, qualitative approaches can help to extend understandings beyond epidemiologically centred approaches which prioritise self-harm's prevalence, or its association with a range of other 'risk factors'.[60] This aligns broadly with a Mad Studies or Survivor Research tradition which emphasises attending to experiential knowledge.[299,300]

Debates persist regarding whether individuals with lived experience are in control of research, or simply occupy a consultive role.[301] Similar concerns can be raised about the current emphasis (in the UK) on Patient and Public Involvement in research; 'user-involvement' in self-harm research can enhance the quality of insights, however questions of power and ownership over the research process remain pertinent.[302] While methods such as autoethnography counter this by positioning the person with 'lived-experience' as one of authority and knowledge, the inherent exposure involved can itself bring challenges to personal wellbeing – an issue exacerbated by ongoing criminalisation of self-harm. Some authors have creatively worked around this, such as Presson et al.[303] who collaborate with pseudonymised Author X as 'a method for keeping identities concealed when risks and secrets are in play' (p. 121). In addition, financial (as well as other) barriers have traditionally impeded meaningful and fair involvement of individuals with lived experience. However, most research funding bodies now insist on payment to those with lived experience and required lived experienced reviewers to rate the quality of grants.

Institutional gatekeeping must also be acknowledged. People with recent experience of self-harm for example can be prohibited from taking part in research, due to concerns about institutional liability should a death by suicide occur in proximity to a study. In addition, research ethics procedures weigh heavily on young people and can create barriers to their full participation in research. This results in self-harm being mediated by strict parameters that can push inquiries farther away from lived experience. While 'involvement' of people with lived experience may be seen as desirable, particularly in attracting research funding, the institutional and financial contexts which make such involvement possible are often lacking.[61] Indeed, despite significant shifts in recent years it can still be difficult to identify sources of funding to compensate those with 'lived-experience' for the time, energy and expertise they may provide to researchers (e.g., see Beresford et al.[304]).

How we conceptualise self-harm

Self-harm research and management approaches should not overlook the *interaction* between individual-level and broader social contextual factors. Poverty, poor social integration, structural disadvantage and racism, and other forms of discrimination, may all form part of the individual context for the development of self-harm. Although these factors are implicit in contemporary theoretical accounts of suicide, they should be addressed more explicitly in the research, prevention, and management strategies for self-harm.

One helpful framework for organising and understanding the putative causes of behaviours and their antecedents at multiple contextual levels is the Social Ecological Model (SEM),[305] which has been adopted by the CDC as a model for violence prevention[306] and for reducing mortality from mental illness.[307] The SEM[305] describes four levels of contextual factors that influence individuals' behaviour: individual; relationship; community; and society, ranging from internal to external contexts. The application of the SEM to suicide research and prevention is gaining increasing traction across various fields.[170,308–311] To our knowledge, however, SEM has rarely been applied to understanding self-harm,[312] but its application to understanding and preventing, and managing these behaviours is highly relevant.

Research into self-harm has tended to prioritise positivist[313] and psychocentric inquiries.[314] Positivist inquiry seeks to understand the world in a systematic way, by focusing on observable phenomena. Psychocentric inquiry focuses on understanding individuals' thoughts, emotions, and behaviours from a psychological perspective. Such approaches can inhibit our ability to engage with the complexity of lived experience, as well as diminishing the value of affective, personal accounts of lived experience. Conventional thinking about self-harm has been challenged by Indigenous peoples.

Indigenous health researchers have critiqued the over-emphasis and over-investment in biomedical and psychocentric frameworks, at the expense of the development of frameworks and interventions that are appropriate to Indigenous contexts.[230,315,316] These critiques recognise the role of individual, biological or psychological factors, but highlight their limitations in understanding the aetiology of self-harm.[317] The need for decolonising research methodologies is crucial to the development of culturally safe frameworks and interventions. The evidence hierarchy is based on a value system derived from High Income settings, that has traditionally been positioned in opposition to Indigenous knowledge systems.[318,319] Furthermore, the evidence hierarchy is impractical, in that the standards are difficult to reach in resource strained contexts, and unethical, in that resources are allocated where they can 'prove' effect and not where they make the most difference. 'Gold standard' research approaches, therefore, often fail to align with the needs of Indigenous communities and perpetuate colonising behaviours and power structures.[320] There are pervasive deficit narratives around Indigenous self-harm research and intervention and an effective 'evidence ceiling'.[321] Indigenous psychology challenges the traditional hegemony of science, advocating for an ecological reflexivity approach and identifying the need to recognise human rights, counter-colonial research and interventions that deconstruct societal structures and systems of oppression, and the reclamation of Indigenous ways of knowing, being, and doing.[317,322] One example of an alternative way of theorising self-harm is 'felt theory', which Ansloos and Peltier[241] have argued for as a way of considering – and transforming – responses to suicide, with clear resonance for self-harm (see Supplementary Panel 1[241,323]).

Improving knowledge about the epidemiology of self-harm

Although there are some remaining uncertainties about the epidemiology of self-harm in HICs, particularly in community settings or among population subgroups, the knowledge gaps in LMICs are more profound. Less than 15% of research evidence on self-harm originates from LMICs, with only 3% from India and China despite these countries accounting for 40% of fatal self-harm across the world.[324] The continued involvement of industry in self-harm prevention may also further impede progress.[107,216,244–256,325] Because of the methods employed (i.e., pesticide poisoning) many acts of self-harm with no/low suicidal intent result in death. Given the social and economic impacts of these deaths (over 500,000 deaths in economically active age groups each year in LMICs[73]) policy has perhaps understandably been directed towards the prevention of fatal self-harm. This has meant that non-fatal self-harm has received less focus, attention, and funding. Indeed, recent evidence from Uganda, a country with a high fatal self-harm rate and many deaths due to pesticide poisoning,[326,327] shows high rates of non-fatal self-harm (1-in-4) among young people.[328]

Not only has self-harm prevention in LMICs failed to make it onto the global agenda, but its importance is neglected at a national level. Suicide prevention strategies are important vehicles for ensuring that the prevention of self-harm is a policy priority. Yet only 15 LMICs have a standalone national suicide prevention strategy[329] and India and China, where over a third of the global population live, are not on this list.

The lack of understanding about the epidemiology of self-harm in LMICs is compounded by major disparities in funding. Less than 2% of research funding into fatal (0.6%) and non-fatal (0.8%) self-harm has been allocated to LMIC organisations.[330] Whilst researchers in the United States received 76% of funding for self-harm research (despite accounting for 6% of fatal and non-fatal self-harm[73]), less than 1% of funding was allocated to India (0.2%) and China (0.5%) (see Supplementary Figure 1 and Supplementary Table 1).[331]

Finally, the relevance of some of the concepts and measures used to assess self-harm have also been questioned, with the authors of a recent systematic review from sub-Saharan Africa arguing that "the findings of the reviewed studies were overly influenced by the use of pre-existing Western derived models and measures", with questionable validity to the local setting.[332] In contexts where certain individuals (i.e., those at the bottom of generational and gender hierarchies) are disempowered and the verbal communication of distress or disagreement is socially unacceptable;[333,334] self-harm may be seen as a non-stigmatised socially sanctioned means of communicating distress.[335] In these contexts, therefore, self-harm, may serve an important social function which in turn, may influence recovery. In addition, socio-cultural differences between settings have a substantial influence on the presentation and course of self-harming behaviours,[336] for example, as illustrated by the lower rates of fatal self-harm in countries where the dominant religion proscribes these acts.[325] Limited evidence also highlights important differences in self-harm practices in LMICs, with head banging and hitting being more common methods of self-harn.[103]

Improving our knowledge about individual-level risk factors for self-harm

Although numerous individual-level factors are known to be associated with self-harm, key gaps in our knowledge remain.

Understanding the dynamic nature of self-harm

Despite self-harm thoughts and behaviours being dynamic phenomena,[337–339] fluctuating over hours and days, most research has investigated self-harm thoughts and behaviours over months or even years. The average follow-up periods for prospective studies of self-harm risk factors have been around 12 months and we need to learn much more about short-term risk factors for self-harm.[192] The lack of fine-grained understanding about the temporal course of self-harm and its associated risk and protective factors, means that we do not know when individuals are most at risk of engaging in self-harm, when thoughts of self-harm may transition into self-harm behaviours, or when interventions should be targeted. This is particularly important for the development of interventions that can be delivered in a timely fashion to individuals.

Understanding temporality is also central to evaluating the effectiveness of interventions for self-harm. For psychosocial interventions where participants need to acquire new skills that take time to learn and implement, we need to know when a particular outcome, such as repetition of self-harm, may be expected to be observed.[17] On this issue, however, it is important to note that whilst repetition of self-harm is commonly employed as an outcome in intervention studies, this outcome may not be of central importance to individuals with lived experience of self-harm.[340]

Capturing self-harm thoughts and behaviours in context, at the moment they occur, as well as the biopsychosocial processes that precede them, is achievable by employing Experience Sampling

Methodology (ESM[341,342]) – also referred to as Ecological Momentary Assessment (EMA[343]). ESM typically involves prompting individuals to complete brief, self-report questionnaires, multiple times per day over days or weeks, regarding their thoughts, feelings, behaviours, and context. Such methods bring myriad possibilities for understanding the internal and external contexts that lead to self-harm thoughts and behaviours, but also for investigating the variability[172,337,338,344,345] and frequency[346] of self-harm thoughts and behaviours during individuals' normal everyday lives.

ESM research has already delivered valuable new insights regarding the context of self-harm thoughts and behaviours. Nock et al.[339] demonstrated that adolescents' likelihood of engaging in self-harm increased when they felt rejected, numb, anger towards themselves and others, and self-hatred, but decreased when they felt sad/worthless. More recently, Kleiman et al.[345] found that feelings of hopelessness, loneliness, and burdensomeness varied considerably during individuals' daily lives, but, in the short term, did not predict thoughts of self-harm. Subsequent work has demonstrated distinct digital phenotypes associated with thoughts of self-harm, based on differences in intensity and variability.[220,338,347] ESM research has also shed light on the differential functions of self-harm both between- and within-individuals.[348] ESM is therefore a powerful tool for understanding individuals' self-harm thoughts and behaviours in the context of everyday life and as such, potentially lays the foundations for personalized models of self-harm and precision treatment.

Although ESM has thus far primarily been used to understand self-harm in the context of research, this method also has the potential to address the management and prevention of self-harm thoughts and behaviours.[337] Recall bias and issues of inconsistent reporting may mean that clinicians do not have an accurate picture of their patient's self-harm between clinical contacts, and evidence suggests that single-timepoint assessments of suicidal ideation are underestimates compared to ESM-based real-time assessments.[346] Real-time monitoring of self-harm thoughts and behaviours and their correlates could, in principle, provide patients and clinicians with more accurate information, and new insights regarding patterns in the proximal risk and protective factors for an individuals' self-harm. These data from ESM digital monitoring could be used to inform the delivery of ecological momentary interventions (EMIs),[349] including personalised just-in-time-adaptive-interventions (JITAIs),[350] which could prompt participants to use skills learned in therapy at the very moment in their daily life when are at risk for engaging in self-harm.

The need to triangulate different sources of individual-level data

As noted elsewhere, qualitative[340,351–353] and co-produced research[340,353,354] are key to gaining insights into self-harm as complex, individual experiences. ESM and digital monitoring techniques can also be used to develop personalised, idiographic models of individuals' self-harm, which centre individuals' unique experiences. Although ESM and digital monitoring techniques can help us to develop personalised models of self-harm thoughts and behaviours, this is primarily at the micro level. At the macro level, the complex, multifaceted nature of self-harm thoughts and behaviours requires the integration of quantitative and qualitative data, from a range of different sources, such as social media, ESM, and electronic health records.

Outcomes of importance to those with lived experience of self-harm

Recent qualitative research has demonstrated a divergence between the treatment outcomes found to be relevant to people with lived experience of self-harm and those considered to be relevant by researchers.[340] Individuals with lived experience valued alternative outcome measures: general functioning and activities of daily living; social participation; and engagement with services, above traditional trial outcome measures of self-harm frequency.[340] These results emphasise the need to consider alternative outcomes. For example, an individual's self-harm frequency may not be reduced, but their social participation may increase, potentially indicating a positive effect of an intervention that would not otherwise be captured by typical trial outcome measures. Similarly, qualitative research with young people with lived experience of self-harm has demonstrated marked differences between individuals in proximal risk factors for self-harm.[351] Risk factors were diverse, including

emotional distress, feelings of isolation, relationship, and school difficulties, as well as exposure to self-harm. By co-producing self-harm research with individuals with diverse lived experiences, outcome measures are more likely to capture relevant outcomes and can inform the development and evaluation of new management approaches. Qualitative research may also expand the array of potential risk and protective factors for further study in research, and consequently, their translation into clinical practice and policy. When co-producing outcomes of relevance for people who self-harm, it will be important to keep in mind that these outcomes are likely to vary across countries, cultures, and identities.[308,309]

Personalised models of self-harm thoughts and behaviours

Self-harm thoughts and behaviours differ not only between but also within-individuals. One of the most powerful advantages of ESM, is that it enables research to move beyond between-person comparisons to investigate *within-person* differences in self-harm thoughts, behaviours, and their antecedents. A typical between-person research question using ESM would be 'do people who think about self-harm spend more time alone than in company, relative to people without self-harm thoughts?' A within-person approach, however, would provide us with far more personalised insights: 'is a specific individual more likely to think about self-harm when *they* are alone relative to when *they* are in company?' These insights can facilitate the development of personalised formulations and treatment models for self-harm.[337,355] In principle, personalised interventions, such as safety planning,[356] ecological momentary interventions (EMIs),[349] and just-in-time adaptive interventions (JITAIs),[350] have the advantage of being deliverable in the right context and when most needed. Personalised monitoring (e.g., ESM) can also be used to track effects of pharmacological and psychological therapies in individuals' daily lives.[357] Such interventions are not intended to replace clinical or community-based support; in fact, they may enhance individuals' experiences of these. Sharing of ESM data between patients and clinicians could empower individuals who self-harm to become active agents in their own treatment, by providing both the individual and their clinician with better insights into their experiences of self-harm as it occurs in context.[337] Researchers and clinicians can make use of single-case experimental designs to test novel interventions or those tailored to the needs of individual types of patients.[358–360] Additionally, machine learning techniques could be utilised to help guide selection of optimal interventions and to evaluate the development and implementation of contextually-embedded interventions,[361] e.g., via Bayesian adaptive trials[362] or Sequential Multiple Assignment Randomized Trials.[363] Access to technology and healthcare services may, however, be a barrier to using technology-based interventions such as EMIs[337] and machine learning-based interventions,[364,365] especially among populations experiencing structural disadvantage.

The application of machine learning

The prediction of self-harm thoughts and behaviours requires techniques to explore complex relationships among many distal and proximal biopsychosocial risk and protective factors. Whilst the predictive capacity of each single risk factor is very limited,[366] machine learning techniques are well adapted to handle large, diverse, and complex data sets. To maximise predictive capacity, future advances in machine learning that include both traditional (e.g., electronic health records data)[367–371] and non-traditional data sources (e.g., digital phenotyping data) will be useful.[365] Machine learning can integrate data from a broad array of contexts using digital phenotyping and allows the collection of continuous data at a granular level in real-world settings[344,372]. For example, the InSTIL platform[372] aims to collect passive and active sensor signals from smartphones to model and predict health outcomes, particularly focusing on mental health. Personal digital sensing technologies (such as smart phones and wearable devices),[373] have introduced new ways to monitor self-harming behaviours. In addition, sensing techniques offer a rich set of modalities, including genetic, molecular, neural, physiological, and behavioural data,[226,373–379] which can be studied simultaneously. Different sensing modalities (e.g., ambient sensors, wearable sensors, and software and social media sensing)[380] can be used to collect information at different contextual levels, including individual characteristics (e.g., physiology and behaviour), interpersonal relations (e.g., social interactions), and environmental contexts (e.g., location and social context). Because different types of data are characterised by very

different statistical properties,[381] future research on the combination of these different data types (multimodal data fusion methods) and novel analytic approaches to high-dimensional data in self-harm is important. As these various channels of information provide increasingly powerful models to predict behaviour in real-time, the field must simultaneously consider the changing ethical responsibilities to monitor and intervene in real-time.[337,382] Such developments also are relevant in discussions about the use of increasingly sophisticated machine learning models[365] and in the need for more rapidly deployed digital interventions.

Most of the health-related machine learning research has been conducted in HICs,[365,383–385] making global interoperability an important concern. This reflects the wider issues with underrepresentation of LMICs in research and intervention development. In HICs, electronic health record data is frequently biased and does not adequately represent individuals from important sub-populations at risk of self-harm.[386] To ensure that machine learning-based prediction models do not further embed health inequalities, data standards to establish representativeness criteria will be key. Sometimes, however, such levels of data standards might be difficult to achieve because a data catchment area may naturally have demographic sub-population inequalities. Modern machine learning methods suggest statistical techniques to resample the existing data to correct distributional bias for all sub-groups for whom data exists, although non-uniformly.[387] When a sub-group is completely absent in the data, active and purposive data acquisition methods will be required.[388]

An additional challenge for applying machine learning to investigate self-harm is that many psychosocial risk and protective factors for self-harm thoughts and behaviours are not included in typical data sources for machine learning, limiting the scope of available information that models can learn from.[365,389] Although specially designed studies could be set up to gather data on psychosocial risk and protective factors for self-harm thoughts and behaviours (e.g., Ribeiro et al.[389]), the scale of data needed to rigorously train and test machine learning models would require either huge numbers of participants (e.g., from population level studies) or huge numbers of observations (e.g., high-dimensional data from ESM, wearables, social media, etc.), which presents significant feasibility challenges for researchers.

Raising the bar on data quality

Generating the quality and quantity of data necessary to apply complex analytic and methodological techniques and derive meaningful, robust conclusions from the results requires a fundamental shift in the priorities of researchers, journals, and funders. Meaningful engagement with measurement and methodological issues is too often considered outside the scope of substantive research on self-harm and is mostly — if at all — covered in specific methodological papers and projects. Studies of self-harm are often underpowered, likely because the statistical infrequency of self-harm thoughts and behaviours in the population means that the time and funding required to collect data from enough individuals to produce an adequately powered sample is unfeasible within a typical grant. The field of self-harm research has also been less prominent in conversations about the replicability crisis in psychological science,[390,391] despite being no less vulnerable to issues of poor transparency, reproducibility, and replicability. Initiatives to raise the bar for methodological quality by funders, such as the open research policy of the Wellcome Trust, can be powerful incentives for researchers to attend to pressing issues with measurement and data quality. Beyond rewarding open research practices, funders should also align the timescales of grants with the reality of the time required to collect high quality data from large samples of individuals who think about and engage in self-harm.

Resolving challenges in relation to data integration

Assuming we have a valid and reliable measure of self-harm thoughts and behaviours, where should this be implemented to capture data from as many individuals as possible? National data registries provide a wealth of data about a broad range of risk and protective factors, and outcomes, including self-harm.[392,393] Linking data from different national or regional registries — for example, linking medical records with indices of area-level deprivation and judiciary records[394] — enables us to build a

rich picture of the context in which self-harm emerges and changes over longer periods of time, across different levels of the SEM. Linking different data sources raises considerable privacy issues and developing secure platforms and workflows for handling these data is essential. DATAMIND (https://datamind.org.uk/) is an excellent example of how this can be achieved. Whilst some registries were specifically established to record self-harm data[395–397] and we urgently need more of these worldwide, such registries record only clinical service presentations for self-harm, and most individuals who self-harm do not present to services for self-harm.[40] Where intervention trials' primary outcome is hospital-treated self-harm (e.g., Cottrell et al.[267]), loss to follow-up and non-presentation to clinical services for self-harm may compromise outcome assessment, as also indicated by the disparity in hospital-recorded vs. self-reported self-harm.[267] Large-scale,[398] and ideally multimodal cohort studies[399,400] — including, for example, ESM and wearable, and self-report questionnaire data to enable fast and slow moving processes to be captured — allow us to assess self-harm thoughts and behaviours among the general population, irrespective of whether individuals have presented to clinical services for their self-harm. In the case of cohort studies, we can follow the same individuals over time to assess longer-term patterns of self-harm and even the onset of self-harm.[401,402] Multimodal cohort studies with data linkage capabilities represent our best opportunity for moving towards and integrated contextual approach to understanding and managing self-harm.

Resolving challenges in relation to data analysis

There is no single reason why an individual thinks about or engages in self-harm; thoughts and behaviours emerge from the interaction of multiple risk and protective factors. It is a complex system.[403] Yet, many studies — in particular, cross-sectional, self-report questionnaire studies — of self-harm do not approach the analysis of data on self-harm in a way that reflects this. Studies often examine the relationship between a single risk or protective factor and a single outcome, or sometimes small numbers of risk and protective factors are analysed in relation to a small number of self-harm outcomes. Fully understanding self-harm from a whole context perspective, will require the application of advanced statistical methods including machine learning,[365,404] network analysis,[405,406] and dynamic and multilevel structural equation modelling.[172,407]

The use of latent class and clustering analysis may also be helpful in identifying sub-groups of self-harming behaviour with different profiles. Latent class analysis has been used to classify self-harm subtypes in populations of young adults,[408] as well as in an outpatient sample.[409] In a very large sample of more than 10,000 community-dwelling adolescents, Uh et al.[410] reported clustering on multiple behavioural/emotional longitudinal risk factors; those with a long history of pathology, and those without, both experienced sleep problems, but the first group were differentiated by greater experience of being bullied and having poorer emotional regulation from an earlier age.

A caveat of applying these complex modelling techniques is that the data should be suited to the analytic technique, and this will require new approaches to data capture and a shift away from small, underpowered cross-sectional studies to large, well-powered, multicentre collaborative studies, ideally with a prospective component. Related to this, there is a tension between seeking to model the complexity of self-harm thoughts and behaviours, and achieving precision in self-harm measurement and theory. For theory-building, using large numbers of predictor variables can result in a lack of precision, compromising the usefulness of theories of self-harm,[411] such as the four-function model[412] and the Integrated Motivational-Volitional model.[413] Computational models of self-harm that strip back theoretically-derived hypotheses about the relationship between self-harm and risk and protective factors to their simplest form, may help refine theories of self-harm to be more precise.[411]

Improving our knowledge about societal contributors to self-harm

There also remain fundamental gaps in our knowledge about societal contributors to self-harm. We know that each of the social determinants listed earlier in this document contribute to self-harm in a

broad sense, however a precise quantification of their relative contribution and the degree to which they may act synergistically is missing. Numerous studies examining suicide have demonstrated that rates are reduced with increased per-capita GDP, employment, minimum wage, as well as governmental spending on social welfare and labour market programs.[414–420] We would expect similar findings for rates of self-harm. However, studies are absent even though, in principle, it should be *easier* to detect the impact of such measures on self-harm as it is a much higher base-rate phenomenon. The fact that these have yet to be conducted underscores the limited research emphasis on self-harm. Likewise, we would expect that efforts to improve overall social wellbeing (e.g. improved access to healthcare, access to green spaces, supports encouraging social connectivity, effective substance control policies) and to address fundamental upstream causes (e.g. support programs for new parents to promote secure attachment, prevention of childhood and inter-generational trauma, educational programs in schools fostering coping and resilience) would reduce rates of self-harm. However, at present, the evidence in this area is quite limited.

NEW WAYS OF RESPONDING TO SELF-HARM

An appropriately skilled and trained workforce

Assessing someone who has self-harmed is one of the most complex of all tasks in mental health.[421] High quality assessment requires a work force which is appropriately trained and supervised. Although there are many training packages available (many of which are marketed commercially), there is limited evidence on the efficacy of training. One randomised trial from the Netherlands showed a significant impact on staff knowledge and confidence after training and a significant clinical effect on some of the patients they went on to treat.[422] Patients with a diagnosis of depression showed a greater reduction in suicidal ideation after being seen in departments where staff had received training based on national self-harm guidelines compared to those treated in departments where staff had not been trained. A recent quantitative review of training interventions for non- specialist staff in high income countries[423] included only one randomised controlled trial and eight observational studies. It concluded that training was linked with post-intervention improvements in staff knowledge. The effects on skills, attitudes, and confidence were less consistent and evidence on patient outcomes was lacking.

There is also little high-quality evidence to guide the content of the training. Instead, the content tends to be agreed by consensus. A recent authoritative systematic review of qualitative studies (Evidence Review P of the NICE guidelines[1]) suggested that training should focus on enabling staff to approach self-harm sensitively, engage the service user, provide knowledge and skills related to specific aspects and interventions for self-harm, while recognising personal limitations and maintaining an appropriate professional distance. The content of many training packages is based on previous training or clinical experience. Others have been developed using consensus methods. One example is the competence framework developed in England which outlines the key competencies (skills, knowledge, and attitudes) that mental health and non-specialist staff who come into contact with people who have self-harmed might be expected to acquire.[424] This framework covers areas such as basic knowledge, communication skills, working with others, assessment, formulation, and providing psychological interventions. The health and mental health of the workforce is of course also crucial in providing high quality, safe care to service users.[425]

Training needs to be general but also tackle the specific needs of groups who might have been under-served by traditional services. Clinicians in mental health services should be equipped to provide culturally sensitive support. Racially minoritised groups often experience myriad risk factors for self-harm, greater barriers to treatment, and decreased likelihood of receiving evidence-based treatments.[426] LGBTQIA+ communities may be discriminated against, excluded, and not receive the mental health care they need.[427] The direct involvement of those with lived experience in staff training, particularly for groups who may have been marginalised in the past, could be transformative.

In addition, there should be effort to employ a diverse health workforce, where there is opportunity to include under-represented groups, for example Indigenous health workers and staff from ethnic minority backgrounds. Finally, it is important to recognise to that health and social care professionals may have their own experiences with self-harm and specific supervision needs. There is some evidence that recruiting staff with lived experience in mental health services can reduce stigma.[428]

Peer support

All care provision – in any setting – for those who self-harm should prioritise validation, choice, and patient empowerment. One way of addressing the deficits in care for those who self-harm is the provision of peer-support and peer-led services. This offers a way in which 'lived-experience' is not just listened to but is propelled into action-driven innovation in care. Though evidence regarding self-harm specifically is relatively sparse, there are indications that experiences of peer-support (including in online spaces) are positive.[429–431]

Recent reports commissioned by UK-based Self-Injury Support demonstrate service users' desire for peer-support based services.[432] In Supplementary Panel 2,[433,434] Veronica Heney discusses *Make Space*, a user-led collective she co-founded with two colleagues, emerging from their own and others' experiences with self-harm. The work of *Make Space* builds on a rich history of user-led organisations in the UK, including the National Self-Harm Network, and the Bristol Crisis Service for Women (now Self-Injury Support).[435]

Peer support is increasingly visible in LMIC settings. For example, HeartSounds Uganda and UPSIDES both of which provide empowered peer support workers to take an active role in the provision of mental health care. The Global Mental Health Peer Network ran virtual peer support groups during the acute phase of the COVID pandemic.[436] In Malaysia, there are also active peer support groups, both face to face and online, led by patient advocacy groups such as Mental Illness and Awareness Support Association Malaysia. The Mariwala Health Initiative in India provides peer-led support for those who experience distress and identify as LGBTQIA+ , and another for those who are survivors of suicide loss. Yet, we were unable to identify examples of peer support in LMIC which focus specifically on self-harm.

For many people with lived experience of self-harm, the development of alternative forms of expression or management of distress may be best supported by the peer groups who intimately understand the experience. The radical nature of the relational change that can occur within these contexts, and the relationships built in them, as well as peer support relationships more generally, inspired a dramatic poem 'An Open Letter'. Supplementary Panel 3 contains an excerpt of this poem, which evocatively demonstrates the importance of relationships in shaping experiences of treatment for self-harm, again pointing to the potential power of peer support in transforming understandings and facilitating 'recovery' (see also Figure 5).

Within peer-reviewed literature, there has been very limited research into non-clinical peer-led support for those who self-harm.[431] This absence can be related to Fricker's[437] testimonial and epistemic injustice – whereby the knowledge and expertise of those who self-harm is not validated or recognised in 'evidence-based', peer-reviewed research literature. In turn, such approaches are rarely included in high-profile evidence reviews on interventions for self-harm.[16,438] A recent systematic review of peer-support for self-harm identified two studies of face-to-face peer support interventions for people who self-harm, each: "*reported a reduction in self-harm following group membership. [as well as] other positive changes […] attributed to group membership, including friendship and decreased isolation, and improvements in self-awareness, mood and interpersonal skills [,…] a sense of empowerment and self-worth through witnessing and supporting each other's struggles and successes.*" (Abou Seif et al.,[430] p. 3-4)

The suggestion that effectively managed peer groups can lead to improved self-awareness, interpersonal skills and reduced self-harm, in the absence of a clear clinical model of intervention, corroborates anecdotal observations of many with lived experience, including some of the authors of this Commission. Peer-to-peer relationships can be effective in confronting those who self-harm with the relational impacts of their actions, forming a radical and 'positively disruptive' incentive and catalyst for change. Pairing this confrontation with a context that creates relationships on which group members can rely during times of distress as an alternative to self-harm, can, for some, be more effective than restrictive interventions (such as those found in traditional clinical contexts) in reducing risk. As indicated by Abou Seif et al.,[430] however – evidence in peer-reviewed literature which explores such changes, or which evaluates peer-support for self-harm in general, is limited. This may reflect biases in research which tend to diminish the role and value of lived-experience in mental health-related interventions and support, instead emphasising the importance of clinical or professional support.[301]

Crisis support is another crucial arena where peer-support can prove revolutionary – in both clinical and non-clinical spaces.[439] Frequently, 'crisis alternative' care contexts such as recovery houses and crisis cafes are run by voluntary and community non-government organisations, and often include peer workers. However, the pay of these workers, and the resourcing of these community-based services, are often uncertain, contingent, or absent.[440] The lack of robust research evidence in this area[430] likely further contributes to the failure to properly resource and value such non-clinical, peer or community-based spaces in supporting those who self-harm. Observational research from Sweden, has found that brief self-referred admission to hospital may be an effective crisis intervention for young people who self-harm[441] and in the UK, the James' Place community-based crisis model[442] is emerging as an accessible crisis intervention for men. The effectiveness of these crisis interventions warrants testing using randomised controlled trials.

Peer-support can also be valuable in longer-term, therapeutic spaces, away from a crisis event. Therapeutic approaches to treating distress which may be expressed via self-harm often include a relational emphasis and peer-to-peer relationships, such as those found within therapeutic communities, where the "presupposition is the […] view that a peer community can facilitate recovery" (De Leon & Unterrainer,[443] p. 3). Therapeutic community treatment is associated with a promising signal of efficacy in reducing self-harm among people diagnosed with personality disorders.[444,445]

Digital health for those not presenting to health services

Given that most individuals who self-harm do not present to health care services for their self-harm,[31,40,42] and that most available interventions require service presentation, most individuals who think about or engage in self-harm are being missed. Digital or mobile Health (mHealth)-based interventions may partially help to deal with this problem. There has been a substantial increase in the availability of digital crisis chats or text lines, as well as smartphone apps. However, most smartphone apps are not evidence-based.[446] mHealth interventions for self-harm have also been tested in predominantly White female samples from affluent societies, and the results may not generalise to other groups of individuals and settings.[447] Furthermore, until recently, few mHealth interventions have been co-produced by individuals with lived experience of self-harm thoughts or behaviours. Therefore, the extent to which available mHealth interventions effectively meet the needs of individuals who think about or engage in self-harm is unclear and this warrants further investigation.[447]

KEY AREAS FOR ACTION

We have discussed the state of our current understanding and identified gaps in knowledge but where does this leave us in terms of the actions we need to take now? Self-harm is an issue for all, but

specific actions may be most effectively carried out by particular sectors and actors. Although there is inevitably overlap, here we consider recommendations for governments, those who deliver health and social care services, the media and wider society, and the research community.

Recommendations for governments

Addressing society-level antecedents of distress that contribute to self-harm

It is clear from the previous literature that within countries, rates of self-harm reflect levels of societal distress. Thus, improving the overall wellbeing of populations may reduce the incidence of self-harm.[448] This can be done through individual-level strategies, but society-wide efforts to improve wellbeing may be much more impactful.[449,450]

At present, relatively few governments and other high-level stakeholders are considering self-harm as a factor in economic, social welfare, and climate policy decisions. This represents a key missed opportunity for advocacy and change. For example, a stronger financial safety net and more social spending (along with improved access to targeted self-harm prevention interventions) in Denmark, may have played a role in fewer hospital presentations for self-harm observed from 2007 to 2016, in contrast to many other European countries.[451]

There is a dearth of studies examining the economic cost-benefit of investment in education, employment programs/unemployment protection, and the general social safety net as a means of reducing self-harm. Such studies ought to be undertaken to investigate whether investment in education, and employment programmes yields longer-term healthcare savings (including fewer emergency department visits and hospitalisations) as well as improved work capacity and productivity. Governments should already appreciate the strong ethical imperative to address self-harm. However, a rigorous business case highlighting potential economic benefits may increase the chances of more widespread implementation of robust policies aimed at societal well-being. It is also important to highlight the potential multiplicative effects of society-wide interventions aimed at reducing risk factors for self-harm. For example, a stronger financial safety net would directly impact poverty but, it may also reduce the stress on households that could otherwise lead to more relationship breakdowns and separations. Reductions in poverty and family disruption may both decrease rates of self-harm.

The global pandemic has provided evidence that cross-national efforts to protect the economic security of populations are possible and indicates an opportunity for self-harm prevention going forward. At the outset of the pandemic, the suicide prevention community was one of many voices calling on governments to provide financial protection to those experiencing unemployment and negative economic consequences.[452] Such protections, which were widely implemented in HICs, are likely to have played a substantial role in the observation that, overall, rates of self-harm presenting to health services have not risen internationally during the pandemic.[453,454]

Many countries have already created national strategies for prevention of suicide.[329] A parallel effort to prevent self-harm in general would require a more holistic whole-of-government approach with a broader mandate to address the conditions that promote self-harm. This could build on existing national strategies aimed narrowly at suicide to acknowledge that many other societal efforts can have the potential to reduce self-harm. These may include greater investment in social welfare as described above, added support for families with children, school-based interventions aimed at improving mental health and reducing bullying,[455,456] responsible climate policies, efforts to reduce gender-based violence, and criminal justice reform. Furthermore, healthcare systems should focus on enhancing access to specialized interventions.

The punishment of people who self-harm around the world must stop

Punitive responses to self-harm are widespread, despite being unacceptable –this must stop. This is seen starkly in those countries where self-harm is interpreted as 'attempted suicide' and subject to prosecution.[457,458] One-in-ten countries criminalise self-harm,[459] many of which are LMICs. Decriminalisation is actionable and requires multipartisan policy change at the legislative level, as well as community and societal stakeholders to view self-harm non-punitively. Removing the legislative barrier would reduce stigma and encourage countries to invest in developing national strategies to prevent self-harm. Decriminalisation would also encourage individuals to seek help and support without fear of criminal punishment or legal consequences and would also reduce an unnecessary burden on criminal justice systems.

Punitive responses to self-harm are also implicit in negative and abusive responses from clinical staff,[460] as well as in 'bans' of self-harm related content on social media.[429] Even in countries, such as the UK, where self-harm and suicide are decriminalised, people can still face criminal justice consequences.[461,462] These can take several forms, including community protection notices which restrict people from self-harming, and the use of police 'welfare checks' in place of health or social care responses to self-harm. Increasingly, police are used as a first line of response to some people who self-harm[463] and people have described healthcare plans that instruct and plan for calling police in a crisis.[462,464] Lived-experience perspectives have been key in challenging this,[465] but for individuals, speaking about their own experiences can come at significant personal and social cost.

In Panel 8, Emma McAllister highlights the way that criminalisation of self-harm continues to intensify the problems faced by those with lived experience of self-harm.

Addressing the needs of people who self-harm in Low and Middle-Income countries

There is no one-size-fits-all formula when addressing the needs of individuals who self-harm in LMICs. The development of intervention responses in LMICs should not be constrained by theoretical models which have been developed from a HIC perspective, informed by the features of self-harming behaviours observed in North America, Western Europe, or Australia. These prominent theories focus predominantly on individual-level psychological processes and fail to consider broader contextual factors.[216,466,467] Many people in LMICs (and in marginalised communities in HICs) do not have their basic needs met. Therefore, understanding the full range of factors leading to self-harm, and the relationship between these, requires a broader lens that considers not just the individual but the family, community and society within a given context. Researchers' reliance on theories developed in HICs has real-world implications when it comes to their application to more diverse settings, leading to the use of scarce resources to evaluate interventions that are contextually inappropriate and possibly ineffective (see Supplementary Panel 4[293,467] for an example). Interventions therefore need to be developed which are specific to the context and assumptions that an intervention suitable in one LMIC would be applicable in another need to be eliminated.

We provide some practical suggestions for ways forward in terms of interventions to address the needs of those people who self-harm in LMICs, and present these as structural/social, and individuals approaches.

Structural and social interventions

With nearly 11 million people each year in LMICs estimated harming themselves or dying as a consequence of self-harm,[73,468] and a further 4 to 82 million affected/bereaved by these acts,[469,470] there is an urgent need to prioritise self-harm prevention in these countries. Achieving this will require radical shifts in the policy and practice. Decriminalising self-harm is just one of the factors which may help to reduce self-harm rates LMICs. Others include tackling the vested interests of commercial entities which waylay any attempts to implement interventions that work. Additionally, there is a need to address the upstream economic, social, and structural determinants of self-harm (e.g., state sanctioned discrimination of sexual minorities). The implementation of such changes requires the

building of a coalition across ideologies - a formidable challenge, but one which needs to be addressed in order to prioritise self-harm prevention globally.

There is strong evidence that the banning of highly toxic pesticides at a national level led to reductions in non-fatal and fatal self-harm and is recommended by the WHO[471] without negatively impacting crop yield.[472] This needs to be urgently actioned in LMICs. Many pesticide self-poisoning deaths may be the result of a non-suicidal self-harm attempt in LMICs where highly toxic pesticides are readily available. The banning of these pesticides can lead to a reduction of pesticide related fatal self-harm by 35-50%, and a reduction of overall fatal self-harm by 24-50%.[246] A global change to legislation could lead to 140,000 fewer self-harm deaths each year.

Prevention responses in LMIC settings should address the basic needs of populations with an emphasis on those who are most disadvantaged, guaranteeing food, housing, and safety (including protection for those at risk of domestic violence and vulnerable groups, to reduce the social determinants of self-harm. Given that the burden of self-harm is probably most acutely experienced by young people, efforts should be made to target investment on this population.

Socio-economic interventions, such as cash transfer programmes, could potentially improve welfare and reduce self-harm by mitigating socio-economic hardship, as observed in a recent longitudinal study of over 100,000,000 Brazilians in which financial protections for the most economically vulnerable reduced fatal self-harm rates by 61% (see Supplementary Panel 5).[97] Strategies targeting poverty and financial hardship due to unemployment during the pandemic should be urgently evaluated across contexts to assess their efficacy in preventing self-harm.[452] There is a further need for intersectional strategies that synergistically target self-harm and issues that frequently co-occur with these – such as gender-based violence and economic marginalisation.[473] Similarly, public awareness campaigns should focus on locally relevant risk factors and be informed by an understanding of the context of self-harm, rather than importing generic approaches to reduction communications from settings where these phenomena vary substantially.

Individual interventions

Universal health coverage needs to be invested in to ensure that all those in need can access healthcare – including mental healthcare, when needed – without impoverishment. Expanding access to the internet, along with digital literacy support, will be important to address inequalities in accessing online services, but strengthening systems of in-person healthcare and social services is also essential for those requiring face-to-face treatment.

As previously highlighted, the healthcare response has a significant role to play in preventing self-harm by supporting individuals to access services and support available in sectors outside the medical sector. This could be via the establishment or upskilling of existing community health workers to identify risk factors for suicide and providing support.

In addition, reforms to medical education are needed to ensure that support for people who self-harm is in line with regional evidence, rather than importing theoretical models or assumptions from very different contexts. Medical curricula should emphasise that what is known from HICs may not be universally applicable (as it is currently presented), and where available, point to evidence from diverse settings on risk and protective factors, patterns of recurrence, and evidence for effective intervention strategies.

Attempts to implement mental health services based on HIC models frequently encounter low uptake when they fail to take into account important contextual factors to which people attribute their distress.[474] Interventions therefore need to address social, personal and historical contexts to be acceptable, particularly in settings where mental illness seems to contribute less to self-harm and social causes contribute more.[96] For instance, in Ghana, religion and social values provide strong frameworks for interpreting acts of self-harm as condemnable, negatively influencing the willingness

of families to provide early help.[475,476] Successful intervention strategies must respond to these social factors, requiring community participation in their design. Furthermore, an interdisciplinary approach is needed that marries robust epidemiological evidence with research from the social sciences to better understand why particular groups are at risk and how specific factors confer risk or resilience in a given cultural and economic setting, using methods such as ethnography and qualitative approaches. Without these, interventions are likely to be ineffective.

Addressing the needs of Indigenous peoples

Many existing interventions do not address the root causes of self-harm among Indigenous peoples. Health and mental health service providers can be seen to be parts of a system that continues to colonise and oppress Indigenous peoples. The imposition of mainstream 'Western' views about mental health may cause institutional racism and create barriers to treatments that are incongruent with the views, values, and practices of Indigenous peoples. Further, by lacking cultural respect and a historical perspective, these interventions often contribute to individual suffering further by failing to promote collective dignity and psychological liberation. They also unintentionally inflict further psychological oppression by promoting social conformity and reinforcing existing power structures.[141] The lack of cultural safety in mainstream services is a major obstacle to help-seeking for Indigenous peoples who self-harm.[477] Indigenous peoples are best placed to ensure safe and appropriate responses to the causes of self-harm in Indigenous communities. Indeed, 'cultural wounds require cultural medicines'.[478]

Experiences of colonisation have varied across time and space. There is no single Indigenous culture or people, but numerous nations, tribes, kinships, and ways of living. Place-based, community-led solutions and interpretations that consider the basic issues of community context, need, resources, and readiness are always essential. Still, common principles to guide a framework of action for Indigenous self-harm prevention can be extrapolated and below, we present six guiding principles for action (see Figure 6). It is likely these guiding principles will be beneficial to all peoples, yet they are especially necessary for effective prevention and management of self-harm among Indigenous peoples. We will now describe each of the principles in turn. We also provide illustrative case studies to highlight the principles in action (see Supplementary Panel 6).[230,231,479–487]

Guiding principles for action

i) Human rights

"When we have power over our destiny, our children will flourish. They will walk in two worlds and their culture will be a gift to their country." (Referendum Council[136])

A human rights framework is essential to health equity more broadly, including the prevention of self-harm. Although the United Nations Declaration for the Rights of Indigenous Peoples (UNDRIP), was adopted by the General Assembly on 13th September 2007, Australia, Canada, New Zealand and the United States initially voted against it. Although their positions were later reversed, none of these countries nor others with Indigenous populations have meaningfully engaged with the Declaration.[116,488,489]

What would meaningful engagement entail? Truth-telling and reconciliation, an acknowledgement of colonisation and for the structures of colonisation to be reformed to enable Indigenous self-determination. As a result of colonisation, many Indigenous communities have collectively experienced an assault on their ability to self-determine their future, which has resulted in an extreme sense of powerlessness and loss[137,490,491] – key drivers to self-harm. Conversely, there is some evidence that Indigenous communities who were able to maintain self-governance and a sense of cultural continuity despite existing within a settler colonial nation have lower rates of fatal self-harm.[481] However, the issues of sovereignty and self-determination are complex.[492] Participation in society, without ownership and resources, is not the same as self-determination and autonomy. Case Study 1

in Supplementary Panel 6 illustrates the steps that are being taken to create Indigenous specific self-harm prevention strategies.

ii) Indigenous community control

Indigenous efforts to prevent self-harm must have substantive involvement with Indigenous peoples and empower the self-determination of community-controlled health organisations that address social determinants of health. Mainstream self-harm prevention strategies rarely engage in critical or counter colonial rationales (e.g., Stoor et al.[493]). However, Indigenous communities and community-controlled organisations are able to challenge the status quo.

Holistic approaches to the prevention of self-harm must concurrently target individual distress, community wellbeing, and systemic barriers to self-determination by prioritising Indigenous Elders and healers, young people, traditional governance structures, and community-controlled organisations. Indigenous participatory action and community-led research methodologies constitute best practice for research with Indigenous peoples and communities.[322,494] Indigenous methodologies ensure that self-harm research and prevention practice is tethered to community leadership and decision-making, that communities shape the needs and priorities of the research, and that the research meets community needs and priorities, and engages and empowers community peoples and organisations.[322,494] See Case Study 2 in Supplementary Panel 6 for more details.

iii) Upstream and midstream prevention of self-harm

Self-harm prevention efforts need to address the complex conditions of Indigenous peoples' lives and the social determinants of health. By creating healthy, safe societies and increasing resilience among Indigenous peoples, the risk of self-harming behaviour emerging may ultimately diminish.

Upstream (structural) interventions address the foundational social and economic structures, including colonial structures, which impact health equity on the macro level.[495,496] This means addressing the root causes of the social and economic conditions that are conducive to self-harm for Indigenous peoples through restorative justice and redress. Midstream interventions alternatively are enacted on the level of policy and seek to reduce the harm caused by structural drivers of inequality. For example, research might consider how the provision of affordable housing might decrease Indigenous deaths by fatal self-harm. Downstream interventions are those which seek to increase the quality, relevance, and equitable access to health and social services, including mental health for Indigenous peoples.

Although all three levels of intervention are necessary, there is perhaps an urgent need for prevention research at the upstream and midstream level to address the issue of intergenerational poverty and trauma in Indigenous communities and the resultant lack of access to resources and sense of agency. By focusing on upstream and midstream approaches, the provision of and access to services downstream becomes a natural outcome. See Case Study 3 in Supplementary Panel 6 for more details.

iv) Life promotion

Indigenous communities are now focussing efforts to improve wellbeing on life promoting and strengths-based practices. Life promotion frameworks move beyond merely achieving the goal of Indigenous survival to achieving thriving.

"Aboriginal health means not just the physical wellbeing of an individual, but refers to the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community. It is a whole-of-life view and includes the cyclical concept of life-death-life." (National Aboriginal Health Strategy Working Party[497])

In research and practice, life promotion prioritises holistic wellbeing as the key strategy and mechanism of change.[231,486] This enables a systemic shift towards the creation of comprehensive socio-political, cultural, environmental, and economic conditions conducive for thriving. While innovative to non-Indigenous communities, this approach is not new to Indigenous communities whose inherent value systems privilege harmony and wellness among all peoples, beings, lands, and in relation to the cosmos. Subsequently, these systems resist the evidence hierarchy that quantifies health in indicators of deficit and instead embed centuries of practice-based evidence that recognise holistic health as harmony evident by thriving individuals, communities, cultures, and natural environments.[498] See Case Study 4 in Supplementary Panel 6 for more details.

v) Cultural determinants

Systematic policies of cultural dispossession and disintegration, including the criminalisation of cultural practices and languages and socio-political sovereignty, have been implemented in the name of colonisation. The effect of these policies has been described in many ways: colonial trauma, historical trauma, intergenerational trauma, and cultural genocide.[155,158–161] The role of these cultural determinants of self-harm must be recognized.

Professor Linda Tuhiwai Smith[494] describes colonisation as experienced by Indigenous peoples to a process of *"disconnecting them from their histories, their landscapes, their languages, their social relations, and their own ways of thinking, feeling, and interacting with the world"* (p. 29). Western systems and societies are yet to acknowledge their histories of colonisation and systems of racism.

Truth-telling and consciousness raising about historical trauma are essential to grief resolution.[145,487,499] Given the impact of Eurocentric research on Indigenous communities, care is needed to ensure that self-harm research considers the breadth of Indigenous knowledges to offer understandings and solutions to their distress.

The role of maintaining traditional culture in enhancing wellbeing and preventing self-harm is described by Elder Bernard Tipiloura in the Elders Report, *"not supporting homelands, not supporting cultural education, and not supporting cultural activities is actually a matter of life and death for us. It's not just a nice little thing to support; it's our people's inner soul"*.[149] The literature has consistently demonstrated that culture is significantly and positively related to physical health, holistic wellbeing, and negatively related to risk-taking and self-defeating behaviours.[500–502] See Case Study 5 in Supplementary Panel 6 for more details.

vi) Indigenous knowledges

There is a long history of the exclusion of Indigenous people's worldviews, epistemologies and philosophies. Yet the science of understanding and preventing self-harm stands to benefit deeply by the inclusion of the expertise of Indigenous peoples. This requires ecological reflexivity and epistemic pluralism in the scientific community and a need to include Indigenous people's diverse healing traditions and practices in thinking about self-harm among this population.

Leanne Betasamosake Simpson[503] makes clear that "*the goal of Indigenous resistance can no longer be cultural resurgence as a mechanism for inclusion in a multicultural mosaic, instead, calling for unapologetic, place-based Indigenous alternatives to the destructive logics of the colonial state"*. Health inequities between Indigenous and non-Indigenous peoples can be redressed by preventative practices that affirm and nourish cultural identity and restoration, recognise cultural idioms of distress, and identify culturally connected and community-based approaches to health.[139,490,504,505] The decolonisation process therefore represents recovery and healing using Indigenous knowledge systems.

Most Indigenous scholars agree that the wellness of Indigenous individuals and communities can only be measured using an Indigenous knowledge framework.[499] In future, approaches need to be multi-

factorial and underpinned by self-determination and community empowerment to ensure sustainability, allowing Indigenous peoples to return to their ways of knowing, being, and doing.[490,506–509]

Recommendations for the delivery of services

Clinical services play a clear role in responses to self-harm and those who self-harm benefit from medical treatment to reduce long-term injuries or prevent death. However, services designed to help those who self-harm may also cause iatrogenic harm.[510] Evidence of poor treatment and negative attitudes among healthcare practitioners goes back at least as far as the 1970s and continues today.[59,435,511,512] In the UK, extensive 'survivor' testimonies were published in the 1990s, detailing problematic treatment experiences[52,513] which are echoed in more recent reports. People who self-harm report being sutured without anaesthetic, told that they 'liked' pain, being ignored, having treatment withheld, told that they were not as 'deserving' of care as other patients, and told that they need to 'help themselves' rather than seeking medical care.[460] Abusive, dismissive, or otherwise negative treatment can have far-reaching impacts on those who self-harm. In the UK, Owens et al.[36] reported a range of negative consequences highlighted by those who self-harmed, following poor treatment. This included avoiding future help-seeking and exacerbation of distress, leading in some cases to severe acts of self-harm. In this study, concerns about being 'taken seriously' when seeking help were said to result in the infliction of more 'serious' wounds prior to help-seeking.[36,460]

"*…I ended up doing some damage to my wrist so that they'd admit me, because I knew that if I went home where I had knives…So it's kind of like you feel you've got to turn up the volume loud enough by doing stuff before they take you seriously.*" (Strike et al.[514], p. 36, in MacDonald et al.[460], p. 475)

In light of such reports, there are frequent calls for more training for clinical staff, to help them better understand and respond to self-harm (e.g., Quinlivan et al.[287]). However, without more radical changes occurring in the way that care is delivered to people who self-harm, training efforts can only achieve a limited amount. As Monteux and Monteux[515] argue, all too often care practices centre on 'doing to' rather than more everyday care of 'being with' (p. 3).

In Panel 9 (Tash Swingler, Australia) and Supplementary Panel 7 (Fiona Stirling, UK), personal insights are provided on the characteristics of 'good care,' arguing that a radical shift in care for self-harm is needed globally. The regularity of 'horror stories'[59,287,460] suggests that there has been an overall 'failure to heed' the knowledge shared by testimonies of those who self-harm.[435] Furthermore, the regularity, and apparent resistance to change, may represent a form of testimonial injustice (also see Supplementary Panel 8).[437] The question is not 'how do we hear about these experiences?' but rather 'how do we transform listening into real change?'.

Co-production – a way forward?

Co-production is defined by Boyle and Harris[516] as being a means "of delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours" (p. 11). Similarly, co-design provides a way in which people with lived experience of self-harm can be meaningfully involved in the design and delivery of services. In Supplementary Panel 9, Tash Swingler provides a summary of recent work she has been involved in, providing just one example of how co-design can work in practice.

Clinical guidelines, such as those from NICE[1] emphasise the importance of involving individuals who self-harm in the decision-making process regarding their care and treatment plans. Such guidelines aim to promote a person-centred approach and encourage a collaborative partnership between healthcare providers and patients in managing self-harm. The benefits of co-production as a means of democratising assumed expertise related to the design of services has been written about extensively elsewhere.[304] This work is time intensive and requires adequate resourcing. There are also significant

challenges to be met, regarding power, and the relative value that knowledge from lived experience may be accorded.[301,517] However, there are radical benefits of co-production – by challenging hierarchies of knowledge, developing meaningful relationships between service providers, service users, some of the injustices and silencing we have detailed above may be avoided.[301,340,438,518]

Having those with lived experience of self-harm more centrally involved in design, delivery, and leadership of care may offer some ways forward in tackling long-standing mistreatment and poor care. In relation to this, young people warrant particular attention. First, the incidence of self-harm rises sharply during adolescence. Second, both clinical interventions and those offered outside of standard healthcare generally fail to adequately address the specific needs of young people, do not reflect the ways in which young people interact with their world, and are not developed in partnership with young people.[353] Youth instead express a strong wish for supportive environments in schools, families, and communities where they feel comfortable disclosing their distress and where those around them will respond in helpful, non-stigmatising ways.[519] Third, young people interact with the world in a different way from previous generations. They are digital natives who are comfortable interacting in online environments. Understanding self-harm and its prevention through the lens of today's young people will help to facilitate better outcomes for both the youth of today and the adults of tomorrow.[520,521] This may be particularly important for groups who may experience stigma such as LGBTQIA+ youth, many of whom may feel more comfortable speaking about self-harm in supportive online environments. What is needed, therefore, are high-quality, age-appropriate, holistic, and compassionate policy and practice responses.

Systems must also shift away from a philosophical standard of care where interventions are wholly designed by adults and located within a health (or illness) paradigm. The solution requires a youth-focused approach that makes young people with lived experience the key actors in future efforts to prevent self-harm, not only at the intervention level or treatment level but they must also be key actors in society-wide strategic planning. Recent evidence suggests that suicide prevention videos developed by youth themselves can increase help-seeking and reduce suicidal thoughts and feelings.[522] Youth self-harm prevention efforts should therefore be co-designed with young people to optimize their effectiveness (see Supplementary Panel 10).[523,524] This requires an infrastructure to support meaningful and ongoing youth involvement, and adults who are willing to forge genuine partnerships with young people.

Enhancing the coordination of care

People who repeatedly self-harm often have complex needs. These needs may be clinical, but many are social and economic, such as unemployment, homelessness, and social isolation.[525] In some HICs, this need is being partially met through services that offer care coordination to people who have presented to the emergency department following self-harm.[526] At the same time, the fragmented nature of our health systems, often funded and managed by separate agencies, means that many people who might benefit from this coordinated approach are not receiving referrals to 'aftercare services' or are not presenting to services at all. Overly complex care pathways with insufficient capacity represent additional barriers to ensuring high quality care for individuals presenting to hospital following self-harm.[527,528] Better integration of services and adequate staffing capacity is needed to ensure that people do not fall between the cracks in the system. There are currently no evidence-based care pathways for self-harm, but the principles underpinning them as well as their components have been well delineated in clinical guidelines and previous research.[1,16,17] Principles include providing care which is compassionate, collaborative, and timely. Involving family members and carers can be helpful and continuity of care (both in terms of health and care personnel but also informational continuity) is key. Continuity might best be achieved through having multi-disciplinary specialist teams who work across traditional boundaries such as primary and secondary care, acute and mental health settings. In terms of the essential components of care pathways, these should include treatment for any urgent physical health needs, high quality psychosocial assessment, and treatment of underlying conditions as well as the ready availability of psychological interventions

specifically designed for self-harm.[1,16,17,529] Of course (and like many other areas of service provision) there is limited evidence or consensus to guide the design of care pathways for self-harm in LMICs.[530]

Recommendations for the media and wider society

Modelling healthy coping across society

Any effort undertaken by mainstream societies to tackle the issue of self-harm must begin by revisiting the basic premises of the messages we send to the public about stress and how to cope with distress. Given this context, we consider healthier and safer messages to be those that a) validate that emotional distress can be difficult to manage but b) model alternative, adaptive coping strategies such as help-seeking instead of self-harming behaviour. These messages do not normalise, encourage, or glorify self-harm. Reshaping cultural norms and reorienting mainstream society toward healthier messaging presents a highly complex challenge and entails the need for alignment between diverse stakeholders including marketing experts, celebrities, and related "influencers"). Historically, a lack of awareness of the need for safer messages and understanding of how to communicate them, has often resulted in counterproductive discourse.[531] However, recent evidence regarding messaging for behavioural change is instructive. There is an opportunity to learn from the innovative approaches developed in LMICs as showcased by the SIREN project – see the case study in Supplementary Panel 11.[532] There is hope that communication challenges can be overcome as they have been successfully in other efforts to shift norms and discourse to improve public health (e.g., smoking prevention, safe sex practices, road safety, physical distancing in the context of the COVID-19 pandemic). We argue that self-harm-related communication across media and society requires a reorientation towards safe communication that establishes adaptive coping and help-seeking as the norm. In Panel 10, we set out our Commission's 4 key principles which we believe should underpin healthier and safer communication about self-harm.

We acknowledge that achieving such a reorientation will be challenging, given differences in opinion about the functions and effects of media consumption, along with difficulties in regulating an ever-increasing number of media outlets. To do this effectively, we must leverage the fact that social learning can also lead to positive change. Dissemination of stories of resilience and survival in people facing suicidal crises may lead to reduced subsequent suicides across a population and there is every reason to suspect that the same principles would hold for self-harm in general.[259,533–536] The scientific community has an increasingly comprehensive understanding of the kinds of content and narratives that cause harm and those that often confer benefit.[258,259,536–542] Narratives of mastery involve a scenario in which an individual, ideally a highly identifiable one, finds themselves in a crisis situation with the urge to self-harm but instead takes concrete steps to find another way to cope, such as calling a crisis helpline. Such portrayals of resilience at times of adversity appear to have benefits in that they establish a norm of mastery and help-seeking. Australia's 'Man Up' series and American hip hop artist Logic's song '1-800-273-8255' are two examples of public messages of help seeking and survival and each appeared to lead to an increase in help seeking.[534,543] The latter was also associated with 245 fewer suicides (-5.5%) in a one-month period across the United States.[534] Against this, we also acknowledge that there is literature highlighting the potentially detrimental effects of recovery stories if, for example, they include certain problematic content (e.g. depictions of self-harm methods) and the necessity to tell only 'appropriate' stories about self-harm.[544,545] The key gaps in this area, therefore, do not relate to a lack of theoretical or practical understanding. Rather, there are challenges with knowledge transfer and exchange as well as implementation, for example, because journalists, news editors, and social media platforms are incentivised to spread "edgy" material and "bad news" that capture the public's attention. This circumstance, nevertheless, provides one of the most promising opportunities for mainstream societal-level intervention as long as there is careful attention to content so that inadvertent harm is avoided as described below.

Changing how we view self-harm as a society

The way in which society views self-harm can have a major impact on the likelihood of its members engaging in these acts (those both with and without a history of prior self-harm). The overarching goal of a cultural reset must be *reducing* the psychological and social availability of self-harm while *increasing* the psychological availability of coping strategies in response to emotional distress (see Figure 7).

One of the challenges of this approach is that some discourse about self-harm, even discourse that may be harmful in certain circumstances for some people, may confer benefit in others and/or for specific individuals (e.g., youth who share about self-harm on social media receiving support from peers) (see Figure 8).[546] Nevertheless, such benefits are undermined if they are not paired with broader efforts to avoid normalization and to promote alternative coping strategies for managing adversity as well as help-seeking.[538] It is therefore essential to strike a careful balance between speaking openly about self-harm while avoiding inadvertently presenting these behaviours as normative or desirable outcomes.

Furthermore, it is important to strike a balance between having supportive environments in which people can openly engage in discourse about self-harm and not inadvertently normalize these behaviours. To accomplish this, we must adhere to four principles aimed at cautious, thoughtful, and limited self-harm-related discourse (see Panel 10). These principles are sufficiently general that it should be possible to implement them within and across HICs and LMICs. Indeed, an emphasis on wellness promotion may be more acceptable and easily integrated within many nations and globally.

Encouraging broad implementation across society has been and will continue to be a challenge given that there are numerous vectors of potentially harmful and helpful messaging. Historically, efforts in this area have mainly focused on the specific outcome of suicide rather than the broader issue of self-harm and these have largely involved the dissemination of guidelines or recommendations for media professionals.[547] Such recommendations have substantial value and can indeed, over time, be used as a way to affect change; however, they are insufficient for the sort of fundamental change that is necessary to shift cultural attitudes and lower self-harm rates. Future efforts must promote "standards" and "norms" for a broader range of stakeholders (e.g., from the social media industry, schools and other educational settings, community organisations) on how to communicate about self-harm, in keeping with the four principles.

Creating safe and supportive environments for young people

One of the functions of self-harm can be to communicate distress to others in circumstances where youth feel unable to do so in other ways.[8] In keeping with the messaging goals described above, it is important for society to model to youth that distress is not a sign of weakness and that sharing is a sign of strength. This will serve to lower barriers to help-seeking, which can be substantial for people who self-harm given issues of stigma, as long as it occurs within a culture that promotes positive coping and in the context of health systems that ensure timely access to targeted services. In keeping with this approach, it is particularly important for us to ensure that supportive environments exist where young people can disclose their difficulties and receive compassionate, supportive responses.[548] There is increasing evidence that, when done thoughtfully, it is safe to talk to young people about self-harm,[524,549] and we know that young people discuss these issues among themselves in their own environments. Nevertheless, for the reasons outlined above, we need to make sure that the benefits of facilitating openness and encouraging help-seeking are balanced against risks of harm. Central to these supportive environments are young people themselves, and we need to make sure that they are equipped to support each other. Schools are an obvious environment where this idea can be taken forward, but to date, school-based interventions have focused mainly on "gatekeeper training" (i.e., educating non-expert school staff to identify and respond to those at risk to specialized services).[550,551] This remains important, but as noted above, young people often prefer to seek help from each other.[34] We therefore need to reframe our understanding of who "gatekeepers" are in this context, and include young people themselves. This is starting to occur in mental health more broadly, with a number of school-based programs designed to increase awareness of mental health difficulties and equip young

people to seek and offer help (e.g., Youth Aware of Mental Health, Teen Mental Health First Aid), but well-evaluated self-harm specific examples are rare.[552] It is important to emphasise the need for a balanced approach to avoid undue pressure on young people or an inadvertent message that finding solutions rests entirely on their shoulders.

The online environment

Much peer-to-peer communication about self-harm occurs on social media,[553] where young people create their own content and curate their own communities. As such, social media provides an important platform for young people to build a sense of community, share their feelings with peers who have had similar experiences, seek help, and help others.[554] However, the potential for negative impacts also exists, with concerns that sharing distressing or explicit content may cause harm. High profile cases of young people engaging in self- harm as a result of online communication are frequently reported by media in high income countries. Both individually targeted 'attacks', such as trolling, or generalised mass delivery of harmful messages, videos and stories, through Instagram or TikTok have occurred. Recent examples include a young Australian man who took his life hours after being blackmailed by people in Nigeria who tricked him into sharing images of himself.[555] There are many others.[556] Parents of young people are particularly alarmed by the potential for social media harms and want something done[557] and in the UK, for example, they have been instrumental in advocating for new legislation for the regulation of social media services.[558] However, the issue is complex. Social media can be a source of support for those who self-harm and a means by which people can seek help.[559] Indeed, recent meta-analyses of the association between social media and mental health report only weak effects.[560,561]

The uptake of social media, combined with excessive parental restrictions on children's freedom (helicopter parenting) is considered by some, including Haidt,[562] to be the cause of the recent increase in self harm among young people– via a range of mechanisms reflecting possibly "a new way of growing up". Technological innovations have long had fundamental effects on social norms and the structure of societies, so concerns about the impact of social media on mental health must be taken seriously. However, there have also been more nuanced reflections of the relationship between social media use and mental health. For example, Etchells argues that the question we need to answer is "*why do some people prosper online while others get into real difficulty?"*[563]

Currently, the evidence for Haidt's proposition is uncertain. There is evidence that rates of anxiety, depression and self-harm may have increased in successive generations of young people, although this is disputed by some and may not have happened across the globe.[564] However, whether smartphone and social media are the culprits is not clear.[565–567] Longitudinal data reveal associations between levels of social media use and depression, but these associations are weak, and do not imply causality.[568] Any explanation for the role of social media must also account for the greater rise of self-harm in young women. The "social media argument" is that girls engage in social media more commonly than boys and that the content of social media impacts girls more, as they are affected more than boys by social comparison, are subjected to more severe judgements, seek 'idealised bodies', more likely to share emotions and are subjected to greater harassment.

Concern about the potential danger of social media is likely to ramp up with the widespread use of Large Language Models (LLMs) and generative AI.[569,570] Although AI algorithms have long been used in the generation of information on smartphones and social media platforms, LLMs such as ChatGPT, released to the public in November 2022, have made this technology accessible to anyone with a laptop or a smartphone. Generative AI is capable of creating information, not just sharing it. It can thus deliver relevant, targeted, ongoing and updated information to young people about self-harm. It can also create and build information and mythologies around self-harm and promote non-scientific information directly into the phones of young people and their friends. Generative AI may accelerate

the generation of falsehoods about suicide and self-harm, feeding on the explicit and uncensored misinformation generated by others.

Ultimately, a nuanced understanding of what is helpful and harmful, for whom, and under what circumstances, is required. So too are strategies that harness the benefits of social media while simultaneously mitigating the risks. Initiatives might include protocols and targeted education to ensure that interactions in the online environment are safe and helpful, and information about youth-friendly services and tools for at-risk individuals is disseminated. This requires strong partnerships between the self-harm prevention sector, young people, social media platforms, as well as social media influencers who may be particularly useful as a means of delivering information to the public at large.[533] It also requires that the social media industry take greater responsibility for the safety of young people. Governments have a key role in providing regulatory frameworks for this industry and some are starting to take appropriate steps. An extensive list of proposed actions to be taken by governments, media companies, parents and young people has been compiled by the US Surgeon General's Advisory.[571] These include government regulation through frameworks, standards, policing and legal interventions, and regulation of companies who own the platforms.[572] Mitigation of the risks associated with AI will require safeguards – where the constraints of what generative AI can and cannot do are baked into AI tools.

Recommendations for researchers and research funders

When extrapolating evidence, it is important to ensure the countries are similar at least in the epidemiology of self-harm. For example, in LMICs, funding discovery research might constitute a better use of resources than funding intervention studies based primarily on evidence and theoretical models derived from HICs.[530,573,574] An essential first step is to establish robust local register systems to monitor trends in self-harm,[575] ideally with consistent indicators to allow comparisons over time and between settings. This will require careful design to consider potential under-reporting of self-harm due to the continued illegality of such acts in some LMIC settings, and societal taboos against self-harm in many contexts.[576,577] In addition, given the wider context of illegality in certain settings, additional privacy concerns need to be considered to ensure that the case registers do not inadvertently put people at risk.

Research funding should be directed towards LMICs, with priority given to areas where the burden is greatest. International funders need to strengthen research capacity in LMICs in a sustainable way. This will also require experienced researchers to take an active role in supporting and mentoring researchers in settings where self-harm research capacity is lacking. The increased capacity within LMICs could also support policy makers to make evidence-based decisions which are relevant and appropriate to their local context.

Leadership change is also required. The dominance of HIC researchers in leadership positions gives disproportionate prominence to issues pertaining to these contexts. The two main international research communities for research in the field have been led by HIC researchers, with the notable exception of the most recent past president of the International Association for Suicide Prevention (IASP). It is noteworthy that after over a decade of IASP receiving a large proportion of their funding from the pesticide industry, the executive committee, under the leadership of a Pakistani president, decided to stop accepting donations from industry. The high death toll associated with pesticide related self-harm is almost exclusively a LMIC issue.[245]

Research leadership from LMIC settings is essential to ensure that research questions and methods are informed by a full understanding of the local context, and to avoid further perpetuating neo-colonial relationships within global health research.[578,579] Researchers, especially those in HICs with greater voice, need to advocate for change and challenge structural barriers which hinder engagement and development (e.g., hosting conferences solely in Europe/North America and only in English). Diversity of experience is needed to support the advancement of self-harm prevention, and this will

only happen if active and continued steps are taken to review LMIC representation in positions of power and research in the self-harm field. Similarly, there is a pressing need to challenge ethnocentrism in publishing, and in the development of international guidelines.

Currently, most of the evidence about self-harm is tucked away in specialist journals, many of which are not fully accessible without fees. Furthermore, most literature is written for a scientific audience; it should be tailored to a lay readership to ensure better utilisation and uptake. In this respect, evidence synthesis and knowledge translation can play crucial future roles, by ensuring that research findings are synthesised and then packaged in ways that are accessible and meaningful for public consumption and particularly for decision-makers and service providers.

CONCLUSION

This Commission has brought together a diverse literature to improve our understanding of the meanings, causes and impact of self-harm across the globe. Integrating the different discourses into a singular voice was never our aim; it would have defeated our purpose which was to embrace neglected viewpoints. Arguably the tensions that exist in relation to the conceptualisation of self-harm defy integration and easy resolution. Yet, despite some differences of opinion about the nature of this phenomenon and the associated responses from others, a clear message has emerged from the work of this commission: self-harm is a global concern and it matters to everyone**.** To those who experience self-harm and who may have no other voice or outlet for their feelings; to the world's oldest living communities who have been subject to centuries of colonial trauma and oppression; to the health professionals treating patients who have harmed themselves and then ambivalently sought help; to the parents of children viewing images of self-harm online. Self-harm also matters to the researchers who are trying to understand why people hurt themselves and whether this can be prevented, treated, or managed more safely and compassionately. It matters to all these groups because it is intimately linked to the identity of individuals and communities and has significant effects on the health, wellbeing, and the survival of human beings. However, to date, self-harm has been neglected as a public health concern with adverse consequences for large populations across the world. Critical gaps currently exist in our knowledge and understanding of self-harm; these gaps need to be addressed. Integrated perspectives from lived experience, Indigenous Peoples, and those from LMICs should challenge the way we have previously understood self-harm; stories from people from these groups should be considered alongside the statistics and privileged above more conventional High-Income approaches to understanding self-harm. Self-harm must be understood as an intensely individual experience but one that occurs in an interpersonal, community, and societal context.

We have identified significant opportunities for action to make a difference to the lives of people who self-harm across the world. These calls for action are distilled into 12 key recommendations (see Panel 1) for action by governments, those involved in the delivery of services, researchers, and research funders, as well as journalists, entertainment and social media companies, and content creators and others who may facilitate public discourse about self-harm. These recommendations reflect the need for involvement from the whole of society. These include schools and universities, technical companies and business, for the ethical and appropriate design of digital technologies, Indigenous leaders to advocate and implement change in their communities, not-for-profit organisations to implement new models of care, train peer support workers and support co-design, and for philanthropy, to fund projects that will target self-harm compassionately, equitably, and within groups that have the greatest need, wherever they are located. Although we all must take responsibility for our roles in actioning these recommendations, ultimately, governments, human rights organisations, and international agencies must take the lead responsibility for changing harmful policies and to implement, monitor, regulate and promote actions to achieve the goal of improving the lives of people who self-harm across the globe. Our role in this Commission is to provide the evidence and advocacy needed to see change.

Contributors

PM developed the original idea for the Commission which was co-led with HC. PM, HC, NK and RCO were the executive group for the Commission providing overall leadership and attending regular Commission meetings to discuss structure and content. AC led the drafting of content on Lived Experience, which was co-written with RA, MAB, VH, IM, SP, FSt, EM, and NS. PD led the drafting of content on self-harm and Indigenous peoples, which was co-written with JA, VMO, JPAS, WW, MW, LD, and KLD. DK led the drafting of content on self-harm and Low- and Middle-Income Countries, which was co-written with LFC, DBM, JO, VP, SP, AL, and TR. OJK led the drafting of content on individual risk factors and treatments, which was co-written with AL, MLK, MAO, RCO, FSh, GT, and SV. MS and JP led the drafting of content on public health and societal factors which was co-written with KH, SH, TN, JR and PSFY. DM contributed analysis on the economic costs of self-harm. All authors contributed to drafts of the Commission. PM led the revision of the final draft with input from HC, MJS, NK and RCO. All authors reviewed and approved the final version of the manuscript.

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REFERENCES

1 National Institute for Health and Clinical Excellence. Self-harm: assessment, management and preventing recurrence: NICE guideline [NG225]. National Institute for Health and Clinical Excellence, 2022. https://www.nice.org.uk/guidance/ng225 (accessed Apr 2, 2023).

2 Geulayov G, Casey D, Bale L, et al. Suicide following presentation to hospital for non-fatal self-harm in the Multicentre Study of Self-harm: a long-term follow-up study. *Lancet Psychiatry* 2019; **6**(12): 1021–30.

3 Zetterqvist M. The DSM-5 diagnosis of nonsuicidal self-injury disorder: a review of the empirical literature. *Child Adolesc Psychiatry Ment Health* 2015; **9**: 31.

4 Kapur N, Cooper J, O'Connor RC, Hawton K. Non-suicidal self-injury v. attempted suicide: new diagnosis or false dichotomy? *Br J Psychiatry* 2013; **202**(5): 326–8.

5 Brooke EM, World Health Organization. Suicide and attempted suicide. World Health Organization, 1974. https://apps.who.int/iris/handle/10665/37822 (accessed Jul 11, 2023).

6 Chaney S. Psyche on the skin: a history of self-harm. London, United Kingdom: Reaktion Books, 2017.

7 Millard C. Making the cut: the production of 'self-harm' in post-1945 Anglo-Saxon psychiatry. *Hist Human Sci* 2013; **26**(2): 126–50.

8 Hawton K, Bale L, Brand F, et al. Mortality in children and adolescents following presentation to hospital after non-fatal self-harm in the Multicentre Study of Self-harm: a prospective observational cohort study. *Lancet Child Adolesc Health* 2020; **4**(2): 111–20.

9 Hawton K, Bergen H, Cooper J, et al. Suicide following self-harm: findings from the Multicentre Study of self-harm in England, 2000-2012. *J Affect Disord* 2015; **175**: 147–51.

10 Moran P, Coffey C, Romaniuk H, et al. The natural history of self-harm from adolescence to young adulthood: a population-based cohort study. *Lancet* 2012; **379**(9812): 236–243.

11 Tan YM, Cheung G. Self-harm in adults: a comparison between the middle-aged and the elderly. *N Z Med J* 2019; **132**(1489): 15–29.

12 Kelly BD. Are we finally making progress with suicide and self-harm? An overview of the history, epidemiology and evidence for prevention. *Ir J Psychol Med* 2018; **35**(2): 95–101.

13 Carter G, Page A, Large M, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guideline for the management of deliberate self-harm. *Aust N Z J Psychiatry* 2016; **50**(10): 939–1000.

14 Owens D, Horrocks J, House A. Fatal and non-fatal repetition of self-harm. *Br J Psychiatry* 2002; **181**(3): 193–9.

15 Witt KG, Hetrick SE, Rajaram G, et al. Interventions for self-harm in children and adolescents. *Cochrane Database Syst Rev* 2021; **3**(3): CD013667.

16 Witt KG, Hetrick SE, Rajaram G, et al. Pharmacological interventions for self-harm in adults. *Cochrane Database Syst Rev* 2021; **1**(1): CD013669.

17 Witt KG, Hetrick SE, Rajaram G, et al. Psychosocial interventions for self-harm in adults. *Cochrane Database Syst Rev* 2021; **4**(4): CD013668.

18 National Institute for Health and Clinical Excellence. Self-harm in over 8s: short-term management and prevention of recurrence: clinical guideline [CG16]. National Institute for Health and Clinical Excellence, 2004. https://www.nice.org.uk/guidance/cg16 (accessed Apr 2, 2023).

19 National Institute for Health and Clinical Excellence. Self-harm in over 8s: long-term management: clinical guideline [CG133]. National Institute for Health and Clinical Excellence, 2011. https://www.nice.org.uk/guidance/cg133 (accessed Apr 2, 2023).

20 Gracey M, King M. Indigenous health part 1: determinants and disease patterns. *Lancet* 2009; **374**(9683): 65–75.

21 Lawson-Te Aho K, Liu JH. Indigenous suicide and colonization: the legacy of violence and the necessity of self-determination. *Int J Confl Violence* 2010; **4**(1): 124–33.

22 Woodley S, Hodge S, Jones K, Holding A. How individuals who self-harm manage their own risk– 'I cope because I self-harm, and I can cope with my self-harm'. *Psychol Rep* 2021; **124**(5): 1998–2017.

23 Vos T, Lim SS, Abbafati C, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* 2020; **396**(10258): 1204–22.

24 Knipe D, Padmanathan P, Newton-Howes G, Chan LF, Kapur N. Suicide and self-harm. *Lancet* 2022; **399**(10338): 1903–16.

25 Lim K-S, Wong CH, McIntyre RS, et al. Global lifetime and 12-month prevalence of suicidal behavior, deliberate self-harm and non-suicidal self-injury in children and adolescents between 1989 and 2018: a meta-analysis. *Int J Environ Res Public Health* 2019; **16**(22): 4581.

26 Kapur N, Steeg S, Moreton A. Self-harm: epidemiology and risk factors. In: Geddes JR, Andreasen NC, Goodwin GM, eds. New Oxford textbook of psychiatry. 3rd ed. Oxford, United Kingdom: Oxford University Press, 2020: 1289–95.

27 Morgan C, Webb RT, Carr MJ, et al. Incidence, clincial mangement, and mortality risk following self harm among children and adolescents: cohort study in primary care. *BMJ* 2017; **359**: j4351.

28 Borschmann R, Kinner SA. Responding to the rising prevalence of self-harm. *Lancet Psychiatry* 2019; **6**(7): 548–9.

29 Ammerman BA, Jacobucci R, Kleiman E, Uyeji LL, McCloskey MS. The relationship between nonsuicidal self-injury age of onset and severity of self-harm. *Suicide Life Threat Behav* 2018; **48**(1): 31–7.

30 Griffin E, McMahon E, McNicholas F, Corcoran P, Perry IJ, Arensman E. Increasing rates of self-harm among children, adolescents and young adults: a 10-year national registry study 2007-2016. *Soc Psychiatry Psychiatr Epidemiol* 2018; **53**(7): 663–71.

31 McManus S, Gunnell D, Cooper C, et al. Prevalence of non-suicidal self-harm and service contact in England, 2000–14: repeated cross-sectional surveys of the general population. *Lancet Psychiatry* 2019; **6**(7): 573–81.

32 Fleming T, Tiatia-Seath J, Peiris-John R, et al. Youth19 Rangatahi Smart Survey, initial findings: hauora hinengaro / emotional and mental health. Auckland and Wellington: The Youth19 Research Group, The University of Auckland and Victoria University of Wellington, New Zealand, 2020. https://static1.squarespace.com/static/5bdbb75ccef37259122e59aa/t/5f338e4cfb539d2246e9e5ce/1597214306382/Youth19+Mental+Health+Report.pdf (accessed Apr 2, 2023).

33 Tørmoen AJ, Myhre M, Walby FA, Grøholt B, Rossow I. Change in prevalence of self-harm from 2002 to 2018 among Norwegian adolescents. *Eur J Public Health* 2020; **30**(4): 688–92.

34 Rowe SL, French RS, Henderson C, Ougrin D, Slade M, Moran P. Help-seeking behaviour and adolescent self-harm: a systematic review. *Aust N Z J Psychiatry* 2014; **48**(12): 1083–95.

35 Salaheddin K, Mason B. Identifying barriers to mental health help-seeking among young adults in the UK: a cross-sectional survey. *Br J Gen Pract* 2016; **66**(651): e686–92.

36 Owens C, Hansford L, Sharkey S, Ford T. Needs and fears of young people presenting at accident and emergency department following an act of self-harm: secondary analysis of qualitative data. *Br J Psychiatry* 2016; **208**(3): 286–91.

37 Carroll R, Metcalfe C, Gunnell D. Hospital presenting self-harm and risk of fatal and non-fatal repetition: systematic review and meta-analysis. *PLoS One* 2014; **9**(2): e89944.

38 Kapur N, Cooper J, King-Hele S, et al. The repetition of suicidal behavior: a multicenter cohort study. *J Clin Psychiatry* 2006; **67**(10): 1599–609.

39 Witt K, Milner A, Spittal MJ, et al. Population attributable risk of factors associated with the repetition of self-harm behaviour in young people presenting to clinical services: a systematic review and meta-analysis. *Eur Child Adolesc Psychiatry* 2019; **28**(1): 5–18.

40 Geulayov G, Casey D, McDonald KC, et al. Incidence of suicide, hospital-presenting non-fatal self-harm, and community-occurring non-fatal self-harm in adolescents in England (the iceberg model of self-harm): a retrospective study. *Lancet Psychiatry* 2018; **5**(2): 167–74.

41 Madge N, Hewitt A, Hawton K, et al. Deliberate self-harm within an international community sample of young people: comparative findings from the Child & Adolescent Self-harm in Europe (CASE) Study. *J Child Psychol Psychiatry* 2008; **49**(6): 667–77.

42 McMahon EM, Keeley H, Cannon M, et al. The iceberg of suicide and self-harm in Irish adolescents: a population-based study. *Soc Psychiatry Psychiatr Epidemiol* 2014; **49**(12): 1929–35.

43 Reichl C, Kaess M. Self-harm in the context of borderline personality disorder. *Curr Opin Psychol* 2021; **37**: 139–44.

44 Hawton K, Saunders K, Topiwala A, Haw C. Psychiatric disorders in patients presenting to hospital following self-harm: a systematic review. *J Affect Disord* 2013; **151**(3): 821–30.

45 Warne N, Heron J, Mars B, et al. Comorbidity of self-harm and disordered eating in young people: evidence from a UK population-based cohort. *J Affect Disord* 2021; **282**: 386–90.

46 King M, Semlyen J, Tai SS, et al. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry* 2008; **18**(8): 70.

47 Quarshie EN-B, Waterman MG, House AO. Prevalence of self-harm among lesbian, gay, bisexual, and transgender adolescents: a comparison of personal and social adversity with a heterosexual sample in Ghana. *BMC Res Notes* 2020; **13**(1): 271.

48 Cooper J, Murphy E, Webb R, et al. Ethnic differences in self-harm, rates, characteristics and service provision: three-city cohort study. *Br J Psychiatry* 2010; **197**(3): 212–8.

49 Kachadourian LK, Nichter B, Herzog S, Norman SB, Sullivan T, Pietrzak RH. Non-suicidal self-injury in US military veterans: results from the National Health and Resilience in Veterans Study. *Clin Psychol Psychother* 2022; **29**(3): 941–9.

50 Favril L, Yu R, Hawton K, Fazel S. Risk factors for self-harm in prison: a systematic review and meta-analysis. *Lancet Psychiatry* 2020; **7**(8): 682–91.

51 Donath C, Bergmann MC, Kliem S, Hillemacher T, Baier D. Epidemiology of suicidal ideation, suicide attempts, and direct self-injurious behavior in adolescents with a migration background: a representative study. *BMC Pediatr* 2019; **19**(1): 45.

52 Hill K, Dallos R. Young people's stories of self-harm: a narrative study. *Clin Child Psychol Psychiatry* 2012; **17**(3): 459–75.

53 Pembroke L. Self-harm: perspectives from personal experience. Survivors Speak Out, 1994. http://studymore.org.uk/shpfpe.pdf (accessed Apr 2, 2023).

54 Simopoulou Z, Chandler A. Self-harm as an attempt at self-care. *Eur J Qual Res Psychother* 2020; **10**: 110–20.

55 Edmondson AJ, Brennan CA, House AO. Non-suicidal reasons for self-harm: a systematic review of self-reported accounts. *J Affect Disord* 2016; **191**: 109–17.

56 Steggals P. Making sense of self-harm: the cultural meaning and social context of nonsuicidal self-injury. Basingstoke, United Kingdom: Palgrave-Macmillan, 2015.

57 Steggals P, Lawler S, Graham R. The social life of self-injury: exploring the communicative dimension of a very personal practice. *Sociol Health Illn* 2020; **42**(1): 157–70.

58 Brossard B. Why do we hurt ourselves? Understanding self-harm in social life. Bloomington, Indiana, United States: Indiana University Press, 2018.

59 Chandler A. Self-injury, medicine and society: authentic bodies. London, United Kingdom: Palgrave Macmillan, 2016.

60 McDermott E, Roen K. Queer youth, suicide and self-harm: troubled subjects, troubling norms. Basingstoke, United Kingdom: Palgrave-Macmillan, 2016.

61 Heney V, Poleykett B. The impossibility of engaged research: complicity and accountability between researchers, 'publics' and institutions. *Sociol Health Illn* 2022; **44**(S1): 179–94.

62 Gunnarsson NV. The scarred body: a personal reflection of self-injury scars. *Qual Soc Work* 2022; **21**(1): 37–52.

63 Stirling FJ. Journeying to visibility: an autoethnography of self-harm scars in the therapy room. *Psychother Politics Int* 2020; **18**(2): e1537.

64 Stirling FJ, Chandler A. Dangerous arms and everyday activism: a dialogue between two researchers with lived experience of self-harm. *Int Rev Qual Res* 2021; **14**(1): 155–70.

65 Rezaie L, Hosseini SA, Rassafiani M, Najafi F, Shakeri J, Khankeh HR. Why self-immolation? A qualitative exploration of the motives for attempting suicide by self-immolation. *Burns* 2014; **40**(2): 319–27.

66 McShane T. Blades, blood and bandages: the experiences of people who self-injure. London, United Kingdom: Palgrave-Macmillan, 2012.

67 Steggals P, Lawler S, Graham R. The personal is social: four sociological approaches to nonsuicidal self-injury. *Sociol Compass* 2022; **16**(5): e12970.

68 Polling C, Woodhead C, Harwood H, Hotopf M, Hatch SL. "There is so much more for us to lose if we were to kill ourselves": understanding paradoxically low rates of self-harm in a socioeconomically disadvantaged community in London. *Qual Health Res* 2021; **31**(1): 122–36.

69 Chandler A, King C, Burton C, Platt S. The social life of self-harm in general practice. *Soc Theory Health* 2020; **18**(3): 240–56.

70 Redley M. The clinical assessment of patients admitted to hospital following an episode of self-harm: a qualitative study. *Sociol Health Illn* 2010; **32**(3): 470–85.

71 Inckle K. Inequality, distress and harm-reduction: a social justice approach to self-injury. *Soc Theory Health* 2020; **18**(3): 224–39.

72 Redikopp S. Depathologizing self-harm: the politics of survival. In: Slowey G, Morrow M, Jiang C, Adam S, Davies M, Taman L, eds. Canada Watch summer 2021: critical perspectives on mental health/Mad Studies. Toronto, Canada: The Robarts Centre for Canadian Studies, 2021: 21–2.

73 Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019) Results. Institute for Health Metrics and Evaluation (IHME); 2020. http://ghdx.healthdata.org/gbd-results-tool (accessed Apr 2, 2023).

74 Nock MK. Actions speak louder than words: An elaborated theoretical model of the social functions of self-injury and other harmful behaviors. *Appl Prev Psychol* 2008; **12**(4): 159–68.

75 Eddleston M, Phillips MR. Self poisoning with pesticides. *BMJ* 2004; **328**(7430): 42–4.

76 Eddleston M, Karunaratne A, Weerakoon M, et al. Choice of poison for intentional self-poisoning in rural Sri Lanka. *Clinical Toxicology* 2006; **44**(3): 283–6.

77 Jiang C, Li X, Phillips MR, Xu Y. Matched case-control study of medically serious attempted suicides in rural China. *Shanghai Arch Psychiatry* 2013; **25**(1): 22–31.

78 Knipe D, Metcalfe C, Hawton K, et al. Risk of suicide and repeat self-harm after hospital attendance for non-fatal self-harm in Sri Lanka: a cohort study. *Lancet Psychiatry* 2019; **6**(8): 659–66.

79 World Health Organization. Suicide in the world: global health estimates. World Health Organization, 2019. https://apps.who.int/iris/handle/10665/326948 (accessed Apr 2, 2023).

80 Dandona R, Kumar GA, Dhaliwal RS, et al. Gender differentials and state variations in suicide deaths in India: the Global Burden of Disease Study 1990–2016. *Lancet Public Health* 2018; **3**(10): e478–89.

81 Naghavi M. Global, regional, and national burden of suicide mortality 1990 to 2016: systematic analysis for the Global Burden of Disease Study 2016. *BMJ* 2019; **364**: l94.

82 Canetto SS. Suicidal behaviors among Muslim women. Patterns, pathways, meanings, and prevention. *Crisis* 2015; **36**(6): 447–58.

83 Kizza D, Knizek BL, Kinyanda E, Hjelmeland H. An escape from agony: a qualitative psychological autopsy study of women's suicide in a post-conflict Northern Uganda. *Int J Qual Stud Health Well-being* 2012; **7**(1): 18463.

84 Mars B, Burrows S, Hjelmeland H, Gunnell D. Suicidal behaviour across the African continent: a review of the literature. *BMC Public Health* 2014; **14**: 606.

85 Andoh-Arthur J, Knizek BL, Osafo J, Hjelmeland H. Suicide among men in Ghana: the burden of masculinity. *Death Stud* 2018; **42**(10): 658–66.

86 Kizza D, Knizek BL, Kinyanda E, Hjelmeland H. Men in despair: a qualitative psychological autopsy study of suicide in Northern Uganda. *Transcult Psychiatry* 2012; **49**(5): 696–717.

87 Lorant V, Kunst AE, Huisman M, Bopp M, Mackenbach J, The EU Working Group. A European comparative study of marital status and socio-economic inequalities in suicide. *Soc Sci Med* 2005; **60**(11): 2431–41.

88 Patel V, Ramasundarahettige C, Vijayakumar L, et al. Suicide mortality in India: a nationally representative survey. *Lancet* 2012; **379**(9834): 2343–51.

89 Zhang J. Marriage and suicide among Chinese rural young women. *Soc Forces* 2010; **89**(1): 311–26.

90 Woo K-S, Shin S, Shin S, Shin Y-J. Marital status integration and suicide: A meta-analysis and meta-regression. *Soc Sci Med* 2018; **197**: 116–26.

91 Snowdon J, Phillips J, Zhong B, Yamauchi T, Chiu HFK, Conwell Y. Changes in age patterns of suicide in Australia, the United States, Japan and Hong Kong. *J Affect Disord* 2017; **211**: 12–9.

92 Wang C-W, Chan CLW, Yip PSF. Suicide rates in China from 2002 to 2011: an update. *Soc Psychiatry Psychiatr Epidemiol* 2014; **49**(6): 929–41.

93 Snowdon J. Indian suicide data: what do they mean? *Indian J Med Res* 2019; **150**(4): 315–20.

94 Pillai A, Andrews T, Patel V. Violence, psychological distress and the risk of suicidal behaviour in young people in India. *Int J Epidemiol* 2009; **38**(2): 459–69.

95 Bertolote JM, Fleischmann A, De Leo D, Wasserman D. Psychiatric diagnoses and suicide: revisiting the evidence. *Crisis* 2004; **25**(4): 147–55.

96 Knipe D, Williams AJ, Hannam-Swain S, et al. Psychiatric morbidity and suicidal behaviour in low-and middle-income countries: a systematic review and meta-analysis. *PLoS Med* 2019; **16**(10): e1002905.

97 Machado D, Williamson E, Pescarini JM, et al. Relationship between the Bolsa Familia national cash transfer programme and suicide incidence in Brazil: a quasi-experimental study. *PLoS Med* 2022; **19**(5): e1004000.

98 Whitlock J, Muehlenkamp J, Eckenrode J, et al. Nonsuicidal self-injury as a gateway to suicide in young adults. *J Adolesc Health* 2013; **52**(4): 486–92.

99 Li X, Xu Y, Wang Y, et al. Characteristics of serious suicide attempts treated in general hospitals. *Chin Ment Health J* 2002; **16**(10): 681–4.

100 Pearson V, Phillips MR, He F, Ji H. Attempted suicide among young rural women in the People's Republic of China: possibilities for prevention. *Suicide Life Threat Behav* 2002; **32**(4): 359–69.

101 Värnik A, Kõlves K, van der Feltz-Cornelis CM, et al. Suicide methods in Europe: a gender-specific analysis of countries participating in the "European Alliance Against Depression". *J Epidemiol Community Health* 2008; **62**(6): 545–51.

102 Richardson EG, Hemenway D. Homicide, suicide, and unintentional firearm fatality: comparing the United States with other high-income countries, 2003. *J Trauma* 2011; **70**(1): 238–43.

103 Aggarwal S, Patton G, Reavley N, Sreenivasan SA, Berk M. Youth self-harm in low- and middle-income countries: systematic review of the risk and protective factors. *Int J Soc Psychiatry* 2017; **63**(4): 359–75.

104 Knipe DW, Chang S-S, Dawson A, et al. Suicide prevention through means restriction: impact of the 2008-2011 pesticide restrictions on suicide in Sri Lanka. *PLoS One* 2017; **12**(3): e0172893.

105 Kõlves K, McDonough M, Crompton D, de Leo D. Choice of a suicide method: trends and characteristics. *Psychiatry Res* 2018; **260**: 67–74.

106 Snowdon J. Differences between patterns of suicide in East Asia and the West. The importance of sociocultural factors. *Asian J Psychiatr* 2018; **37**: 106–11.

107 Buckley NA, Fahim M, Raubenheimer J, et al. Case fatality of agricultural pesticides after self-poisoning in Sri Lanka: a prospective cohort study. *Lancet Glob Health* 2021; **9**(6): e854–62.

108 Rajapakse T, Russell AE, Kidger J, et al. Childhood adversity and self-poisoning: a hospital case control study in Sri Lanka. *PLoS One* 2020; **15**(11): e0242437.

109 Fekadu A, Demissie M, Birhane R, et al. Under detection of depression in primary care settings in low and middle-income countries: a systematic review and meta-analysis. *Syst Rev* 2022; **11**(1): 21.

110 Gulland A. Drop in suicide rate in China fuels global fall in deaths. The Telegraph. 2019.

111 Yip PSF, Liu KY, Hu J, Song XM. Suicide rates in China during a decade of rapid social changes. *Soc Psychiatry Psychiatr Epidemiol* 2005; **40**(10): 792–8.

112 The World Bank. Kerala: indicators at a glance. 2017. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/339981504162153632/kerala-indicators-at-a-glance (accessed Apr 2, 2023).

113 National Crime Records Bureau. Accidental deaths & suicides in India 2019. Government of India, 2019. https://ncrb.gov.in/en/accidental-deaths-suicides-india-2019 (accessed Apr 2, 2023).

114 Pollock NJ, Naicker K, Loro A, Mulay S, Colman I. Global incidence of suicide among Indigenous peoples: a systematic review. *BMC Med* 2018; **16**(1): 145.

115 Chan S, Denny S, Fleming T, Fortune S, Peiris-John R, Dyson B. Exposure to suicide behaviour and individual risk of self-harm: findings from a nationally representative New Zealand high school survey. *Aust N Z J Psychiatry* 2018; **52**(4): 349–56.

116 Ministry of Health NZ. Every life matters – he tapu te oranga o ia tangata: suicide prevention strategy 2019–2029 and suicide prevention action plan 2019–2024 for Aotearoa New Zealand. Ministry of Health NZ, 2019. https://www.health.govt.nz/system/files/documents/publications/suicide-prevention-strategy-2019-2029-and-plan-2019-2024-v2.pdf (accessed Apr 2, 2023).

117 Australian Institute of Health and Welfare. Intentional self-harm hospitalisations & Indigenous Australians. 2022. https://www.aihw.gov.au/suicide-self-harm-monitoring/data/populations-age-groups/intentional-self-harm-hospitalisations-indigenous (accessed Apr 2, 2023).

118 Rouen C, Clough AR, West C. Non-fatal deliberate self-harm in three remote Indigenous communities in Far North Queensland, Australia. *Crisis* 2019; **40**(6): 422–8.

119 Kreisfeld R, Harrison JE. Indigenous injury deaths: 2011–12 to 2015–16. Australian Institute of Health and Welfare, 2020. https://www.aihw.gov.au/reports/injury/indigenous-injury-deaths-2011-12-to-2015-16/summary (accessed Apr 2, 2023).

120 Newton AS, Tsang CI, Rosychuk RJ. Emergency health care use among sociodemographic groups of children presenting to emergency departments for self-harm in Alberta. *CJEM* 2015; **17**(5): 497–506.

121 Kumar MB, Tjepkema M. Suicide among First Nations people, Métis and Inuit (2011-2016): findings from the 2011 Canadian Census Health and Environment Cohort (CanCHEC). Statistics Canada, 2019. https://www150.statcan.gc.ca/n1/pub/99-011-x/99-011-x2019001-eng.htm (accessed Apr 2, 2023).

122 Monto MA, McRee N, Deryck FS. Nonsuicidal self-injury among a representative sample of US adolescents, 2015. *Am J Public Health* 2018; **108**(8): 1042–8.

123 Cwik MF, Barlow A, Tingey L, Larzelere-Hinton F, Goklish N, Walkup JT. Nonsuicidal self-injury in an American Indian reservation community: results from the White Mountain Apache surveillance system, 2007–2008. *J Am Acad Child Adolesc Psychiatry* 2011; **50**(9): 860–9.

124 Centers for Disease Control and Prevention. Wide ranging online data for epidemiological research (WONDER): underlying cause of death, 1999-2020. 2021. https://wonder.cdc.gov/ucd-icd10.html (accessed Apr 2, 2023).

125 Bjerregaard P, Larsen CVL. Time trend by region of suicides and suicidal thoughts among Greenland Inuit. *Int J Circumpolar Health* 2015; **74**: 26053.

126 Eckhoff C, Sørvold MT, Kvernmo S. Adolescent self-harm and suicidal behavior and young adult outcomes in indigenous and non-indigenous people. *Eur Child Adolesc Psychiatry* 2020; **29**(7): 917–27.

127 Silviken A. Prevalence of suicidal behaviour among indigenous Sami in northern Norway. *Int J Circumpolar Health* 2009; **68**(3): 204–11.

128 Vecchio EA, Dickson M, Zhang Y. Indigenous mental health and climate change: a systematic literature review. *J Clim Change Health* 2022; **6**: 100121.

129 Fitzgerald J, Curtis C. Non-suicidal self-injury in a New Zealand student population: demographic and self-harm characteristics. *NZ J Psychol* 2017; **46**(3): 156–63.

130 Fogarty W, Bulloch H, McDonnell S, Davis M. Deficit discourse and Indigenous health: how narrative framings of Aboriginal and Torres Strait Islander people are reproduced in policy. Lowitja Institute, 2018. https://www.lowitja.org.au/page/services/resources/Cultural-and-social-determinants/racism/Deficit-Discourse-and-Indigenous-Health (accessed Apr 2, 2023).

131 Kukutai T, Taylor J. Indigenous data sovereignty: toward an agenda. Canberra, Australia: ANU Press, 2016.

132 Black EB, Kisely S. A systematic review: non-suicidal self-injury in Australia and New Zealand's Indigenous populations. *Aust Psychol* 2018; **53**(1): 3–12.

133 Dickson JM, Cruise K, McCall CA, Taylor PJ. A systematic review of the antecedents and prevalence of suicide, self-harm and suicide ideation in Australian Aboriginal and Torres Strait Islander youth. *Int J Environ Res Public Health* 2019; **16**(17): 3154.

134 Gratz KL. Risk factors for and functions of deliberate self-harm: an empirical and conceptual review. *Clin Psychol (New York)* 2003; **10**(2): 192–205.

135 McPhee R, Carlin E, Seear K, et al. Unacceptably high: an audit of Kimberley self-harm data 2014-2018. *Australas Psychiatry* 2022; **30**(1): 70–3.

136 Referendum Council. Uluru Statement from the Heart. Indigenous Law Centre, University of New South Wales, 2017. https://ulurustatement.org/the-statement/ (accessed Apr 2, 2023).

137 Brave Heart MYH, DeBruyn LM. The American Indian holocaust: healing historical unresolved grief. *Am Indian Alsk Nativ Ment Health Res* 1998; **8**(2): 56.

138 Hunter E, Milroy H. Aboriginal and Torres Strait Islander suicide in context. *Arch Suicide Res* 2006; **10**(2): 141–57.

139 Kingi T, Russell L, Ashby W, The Youth Wellbeing Study Team. Mā te mātau, ka ora: the use of traditional Indigenous knowledge to support contemporary rangatahi Māori who self-injure. *NZ J Psychol* 2017; **46**(3): 137–45.

140 Royal Commission on Aboriginal Peoples. Choosing life: special report on suicide among Aboriginal people. Ottawa, Canada: Canada Communication Group Publishing, 1995.

141 Duran E, Firehammer J, Gonzalez J. Liberation psychology as the path toward healing cultural soul wounds. *J Couns Dev* 2008; **86**(3): 288–95.

142 Lawson-Te Aho K. Whāia te mauriora - in pursuit of healing: theorising connections between soul healing, tribal self-determination and Māori suicide prevention in Aotearoa/New Zealand. PhD thesis, Victoria University of Wellington, 2013.

143 Durie M. Indigenous suicide: The Turamarama Declaration. *J Indig Wellbeing* 2017; **2**(2): 5.

144 Lawson-Te Aho KR. The case for re-framing Māori suicide prevention research in Aotearoa/ New Zealand: applying lessons from Indigenous suicide prevention research. *Journal of Indigenous Research* 2017; **6**(2017): 1.

145 Brave Heart MYH. The return to the sacred path: healing the historical trauma and historical unresolved grief response among the lakota through a psychoeducational group intervention. *Smith Coll Stud Soc Work* 1998; **68**(3): 287–305.

146 Durie MH. Mauri ora: the dynamics of Māori health. Auckland, New Zealand: Oxford University Press, 2001.

147 Schure M, Allen S, Trottier C, et al. Daasachchuchik: a trauma-informed approach to developing a chronic illness self-management program for the Apsáalooke people *J Health Care Poor Underserved* 2020; **31**(2): 992–1006.

148 Green LW. Making research relevant: if it is an evidence-based practice, where's the practice-based evidence? *Fam Pract* 2008; **25**(suppl_1): i20–4.

149 Gooda M, Dudgeon P. The Elders' report into preventing Indigenous self-harm and youth suicide. People Culture Environment, 2014. https://apo.org.au/node/40060 (accessed Apr 2, 2023).

150 Hunter E, Harvey D. Indigenous suicide in Australia, New Zealand, Canada, and the United States. *Emerg Med (Fremantle)* 2002; **14**(1): 14–23.

151 Barnes R, Josefowitz N. Indian residential schools in Canada: persistent impacts on Aboriginal students' psychological development and functioning. *Can Psychol* 2019; **60**(2): 65–76.

152 Walls ML, Whitbeck LB. The intergenerational effects of relocation policies on Indigenous families. *J Fam Issues* 2012; **33**(9): 1272–93.

153 Australian Institute of Health and Welfare. Aboriginal and Torres Strait Islander stolen generations and descendants: numbers, demographic characteristics and selected outcomes. Australian Institute of Health and Welfare, 2018. https://www.aihw.gov.au/reports/indigenous-australians/stolen-generations-descendants/overview (accessed Apr 2, 2023).

154 Arawhenua NP. Te mauri the life force: rangatahi suicide report: te pūrongo mō te mate whakamomori o te rangatahi. Health Quality & Safety Commission New Zealand, 2020. https://www.hqsc.govt.nz/resources/resource-library/te-mauri-the-life-force-i-rangatahi-suicide-report-i-te-purongo-mo-te-mate-whakamomori-o-te-rangatahi/ (accessed Apr 2, 2023).

155 Moewaka Barnes H, McCreanor T. Colonisation, hauora and whenua in Aotearoa. *J R Soc N Z* 2019; **49**(sup1): 19–33.

156 Paradies Y, Ben J, Denson N, et al. Racism as a determinant of health: a systematic review and meta-analysis. *PLoS One* 2015; **10**(9): e0138511.

157 Comas-Díaz L, Hall GN, Neville HA. Racial trauma: theory, research, and healing: introduction to the special issue. *Am Psychol* 2019; **74**(1): 1–5.

158 Brave Heart MYH, Chase J, Elkins J, Altschul DB. Historical trauma among Indigenous Peoples of the Americas: concepts, research, and clinical considerations. *J Psychoactive Drugs* 2011; **43**(4): 282–90.

159 Kingston L. The destruction of identity: cultural genocide and Indigenous peoples. *J Hum Rights* 2015; **14**(1): 63–83.

160 Maguire GJ. A genocide by any other name: cultural genocide in the context of Indigenous peoples and the role of international law. *Strathclyde Law Review* 2018; **4**(1), 108–27.

161 Menzies K. Understanding the Australian Aboriginal experience of collective, historical and intergenerational trauma. *Int Soc Work* 2019; **62**(6): 1522–34.

162 Czyz EK, Glenn CR, Arango A, Koo HJ, King CA. Short-term associations between nonsuicidal and suicidal thoughts and behaviors: a daily diary study with high-risk adolescents. *J Affect Disord* 2021; **292**: 337–44.

163 Gillies D, Christou MA, Dixon AC, et al. Prevalence and Characteristics of Self-Harm in Adolescents: Meta-Analyses of Community-Based Studies 1990-2015. *J Am Acad Child Adolesc Psychiatry* 2018; **57**(10): 733–41.

164 Gratz KL. Targeting emotion dysregulation in the treatment of self-injury. *J Clin Psychol* 2007; **63**(11): 1091–103.

165 Hooley JM, Franklin JC. Why do people hurt themselves? A new conceptual model of nonsuicidal self-injury. *Clin Psychol Sci* 2017; **6**(3): 428–51.

166 O'Connor RC, Rasmussen S, Miles J, Hawton K. Self-harm in adolescents: self-report survey in schools in Scotland. *Br J Psychiatry* 2009; **194**(1): 68–72.

167 Rasmussen S, Hawton K, Philpott-Morgan S, O'Connor RC. Why do adolescents self-harm? *Crisis* 2016; **37**(3): 176–83.

168 Taylor PJ, Jomar K, Dhingra K, Forrester R, Shahmalak U, Dickson JM. A meta-analysis of the prevalence of different functions of non-suicidal self-injury. *J Affect Disord* 2018; **227**: 759–69.

169 Hjelmeland H. Cultural context is crucial in suicide research and prevention. *Crisis* 2011; **32**(2): 61–4.

170 Hochhauser S, Rao S, England-Kennedy E, Roy S. Why social justice matters: a context for suicide prevention efforts. *Int J Equity Health* 2020; **19**(1): 76.

171 Wolff JC, Thompson E, Thomas SA, et al. Emotion dysregulation and non-suicidal self-injury: a systematic review and meta-analysis. *Eur Psychiatry* 2020; **59**: 25–36.

172 Kiekens G, Hasking P, Nock MK, et al. Fluctuations in affective states and self-efficacy to resist non-suicidal self-injury as real-time predictors of non-suicidal self-injurious thoughts and behaviors. *Front Psychiatry* 2020; **11**: 214.

173 Gyori D, Balazs J. Nonsuicidal self-injury and perfectionism: a systematic review. *Front Psychiatry* 2021; **12**: 691147.

174 Zelkowitz RL, Cole DA. Self-criticism as a transdiagnostic process in nonsuicidal self-injury and disordered eating: systematic review and meta-analysis. *Suicide Life Threat Behav* 2019; **49**(1): 310–27.

175 Dillon KH, Glenn JJ, Dennis PA, et al. Anger precedes and predicts nonsuicidal self-injury in veterans: findings from an ecological momentary assessment study. *J Psychiatr Res* 2021; **135**: 47–51.

176 Keyworth C, Quinlivan L, Leather JZ, O'Connor RC, Armitage CJ. The association between COVID-19-related fear and reported self-harm in a national survey of people with a lifetime history of self-harm. *BMC Psychiatry* 2022; **22**(1): 68.

177 Coppersmith DDL, Nada-Raja S, Beautrais AL. Non-suicidal self-injury and suicide attempts in a New Zealand birth cohort. *J Affect Disord* 2017; **221**: 89–96.

178 Russell AE, Heron J, Gunnell D, et al. Pathways between early-life adversity and adolescent self-harm: the mediating role of inflammation in the Avon Longitudinal Study of Parents and Children. *J Child Psychol Psychiatry* 2019; **60**(10): 1094–103.

179 Dawkins J, Hasking P, Boyes M. Knowledge of parental nonsuicidal self-injury in young people who self-injure: the mediating role of outcome expectancies. *J Fam Stud* 2021; **27**(4): 479–90.

180 Hasking P, Rose A. A preliminary application of social cognitive theory to nonsuicidal self-injury. *J Youth Adolesc* 2016; **45**(8): 1560–74.

181 Kiekens G, Hasking P, Claes L, et al. Predicting the incidence of non-suicidal self-injury in college students. *Eur Psychiatry* 2019; **59**: 44–51.

182 Myklestad I, Straiton M. The relationship between self-harm and bullying behaviour: results from a population based study of adolescents. *BMC Public Health* 2021; **21**(1): 524.

183 van Geel M, Goemans A, Vedder P. A meta-analysis on the relation between peer victimization and adolescent non-suicidal self-injury. *Psychiatry Res* 2015; **230**(2): 364–8.

184 Fortune S, Cottrell D, Fife S. Family factors associated with adolescent self-harm: a narrative review. *J Fam Ther* 2016; **38**(2): 226–56.

185 Stallard P, Spears M, Montgomery AA, Phillips R, Sayal K. Self-harm in young adolescents (12-16 years): onset and short-term continuation in a community sample. *BMC Psychiatry* 2013; **13**: 328.

186 Victor SE, Hipwell AE, Stepp SD, Scott LN. Parent and peer relationships as longitudinal predictors of adolescent non-suicidal self-injury onset. *Child Adolesc Psychiatry Ment Health* 2019; **13**: 1.

187 Coppersmith DDL, Kleiman EM, Glenn CR, Millner AJ, Nock MK. The dynamics of social support among suicide attempters: A smartphone-based daily diary study. *Behav Res Ther* 2019; **120**: 103348.

188 Townsend E, Ness J, Waters K, et al. Life problems in children and adolescents who self-harm: findings from the multicentre study of self-harm in England. *Child Adolesc Ment Health* 2022; **27**(4): 352–60.

189 McAuliffe C, Corcoran P, Keeley HS, et al. Problem-solving ability and repetition of deliberate self-harm: a multicentre study. *Psychol Med* 2006; **36**(1): 45–55.

190 Kirtley OJ, O'Carroll RE, O'Connor RC. Pain and self-harm: a systematic review. *J Affect Disord* 2016; **203**: 347–63.

191 Koenig J, Thayer JF, Kaess M. A meta-analysis on pain sensitivity in self-injury. *Psychol Med* 2016; **46**(8): 1597–612.

192 Fox KR, Franklin JC, Ribeiro JD, Kleiman EM, Bentley KH, Nock MK. Meta-analysis of risk factors for nonsuicidal self-injury. *Clin Psychol Rev* 2015; **42**: 156–67.

193 Townsend E, Wadman R, Sayal K, et al. Uncovering key patterns in self-harm in adolescents: sequence analysis using the Card Sort Task for Self-harm (CaTS). *J Affect Disord* 2016; **206**: 161–8.

194 Kiekens G, Hasking P, Bruffaerts R, et al. Non-suicidal self-injury among first-year college students and its association with mental disorders: results from the World Mental Health International College Student (WMH-ICS) initiative. *Psychol Med* 2023; **53**(3): 875–86.

195 Hysing M, Sivertsen B, Stormark KM, O'Connor RC. Sleep problems and self-harm in adolescence. *Br J Psychiatry* 2015; **207**(4): 306–12.

196 O'Connor RC, Rasmussen S, Hawton K. Distinguishing adolescents who think about self-harm from those who engage in self-harm. *Br J Psychiatry* 2012; **200**(4): 330–5.

197 Arendt F, Scherr S, Romer D. Effects of exposure to self-harm on social media: evidence from a two-wave panel study among young adults. *New Media Soc* 2019; **21**(11–12): 2422–42.

198 Marchant A, Hawton K, Stewart A, et al. A systematic review of the relationship between internet use, self-harm and suicidal behaviour in young people: the good, the bad and the unknown. *PLoS One* 2017; **12**(8): e0181722.

199 Mars B, Heron J, Biddle L, et al. Exposure to, and searching for, information about suicide and self-harm on the Internet: prevalence and predictors in a population based cohort of young adults. *J Affect Disord* 2015; **185**: 239–45.

200 American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Washington D.C., United States: American Psychiatric Association, 2013.

201 Winsper C, Bilgin A, Thompson A, et al. The prevalence of personality disorders in the community: a global systematic review and meta-analysis. *Br J Psychiatry* 2020; **216**(2): 69–78.

202 Pompili M, Giraldi P, Ruberto A, Tatarelli R. Suicide in borderline personality disorder: a meta-analysis. *Nord J Psychiatry* 2005; **59**(5): 319–24.

203 Kleindienst N, Bohus M, Ludäscher P, et al. Motives for nonsuicidal self-injury among women with borderline personality disorder. *J Nerv Ment Dis* 2008; **196**(3): 230–6.

204 Koenig J, Klier J, Parzer P, et al. High-frequency ecological momentary assessment of emotional and interpersonal states preceding and following self-injury in female adolescents. *Eur Child Adolesc Psychiatry* 2021; **30**(8): 1299–1308.

205 Andrewes HE, Hulbert C, Cotton SM, Betts J, Chanen AM. An ecological momentary assessment investigation of complex and conflicting emotions in youth with borderline personality disorder. *Psychiatry Res* 2017; **252**: 102–10.

206 Storebø OJ, Stoffers-Winterling JM, Völlm BA, et al. Psychological therapies for people with borderline personality disorder. *Cochrane Database Syst Rev* 2020; **5**(5): CD012955.

207 Kaess M, Hooley JM, Klimes-Dougan B, et al. Advancing a temporal framework for understanding the biology of nonsuicidal self- injury: an expert review. *Neurosci Biobehav Rev* 2021; **130**: 228–39.

208 Turecki G. The molecular bases of the suicidal brain. *Nat Rev Neurosci* 2014; **15**(12): 802–16.

209 Turecki G, Meaney MJ. Effects of the social environment and stress on glucocorticoid receptor gene methylation: a systematic review. *Biol Psychiatry* 2016; **79**(2): 87–96.

210 Berardelli I, Serafini G, Cortese N, Fiaschè F, O'Connor RC, Pompili M. The involvement of hypothalamus-pituitary-adrenal (HPA) axis in suicide risk. *Brain Sci* 2020; **10**(9): 653.

211 Auerbach RP, Pagliaccio D, Allison GO, Alqueza KL, Alonso MF. Neural correlates associated with suicide and nonsuicidal self-injury in youth. *Biol Psychiatry* 2021; **89**(2): 119–33.

212 Labonté B, Abdallah K, Maussion G, et al. Regulation of impulsive and aggressive behaviours by a novel lncRNA. *Mol Psychiatry* 2021; **26**(8): 3751–64.

213 O'Connor DB, Gartland N, O'Connor RC. Stress, cortisol and suicide risk. *Int Rev Neurobiol* 2020; **152**: 101–30.

214 Solmi M, Radua J, Olivola M, et al. Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. *Mol Psychiatry* 2022; **27**(1): 281–95.

215 Blakemore S-J, Mills KL. Is adolescence a sensitive period for sociocultural processing? *Annu Rev Psychol* 2014; **65**: 187–207.

216 Turecki G, Brent DA, Gunnell D, et al. Suicide and suicide risk. *Nat Rev Dis Primers* 2019; **5**(1): 74.

217 Kimbrel NA, Ashley-Koch AE, Qin XJ, et al. A genome-wide association study of suicide attempts in the million veterans program identifies evidence of pan-ancestry and ancestry-specific risk loci. *Mol Psychiatry* 2022; **27**(4): 2264–72.

218 Mullins N, Kang J, Campos AI, et al. Dissecting the shared genetic architecture of suicide attempt, psychiatric disorders, and known risk factors. *Biol Psychiatry*; **91**(3): 313–27.

219 Docherty AR, Mullins N, Ashley-Koch AE, et al. GWAS meta-analysis of suicide attempt: identification of 12 genome-wide significant loci and implication of genetic risks for specific health factors. *Am J Psychiatry* 2023; **180**(10): 723–38.

220 Bernanke JA, Stanley BH, Oquendo MA. Toward fine-grained phenotyping of suicidal behavior: the role of suicidal subtypes. *Mol Psychiatry* 2017; **22**(8): 1080–1.

221 Navarro D, Marín-Mayor M, Gasparyan A, García-Gutiérrez MS, Rubio G, Manzanares J. Molecular changes associated with suicide. *Int J Mol Sci* 2023; **24**(23): 16726.

222 Oquendo MA, Sullivan GM, Sudol K, et al. Toward a biosignature for suicide. *Am J Psychiatry* 2014; **171**(12): 1259–77.

223 Turecki G, Brent DA. Suicide and suicidal behaviour. *Lancet* 2016; **387**(10024): 1227–39.

224 Kimbrel NA, Garrett ME, Evans MK, et al. Large epigenome-wide association study identifies multiple novel differentially methylated CpG sites associated with suicidal thoughts and behaviors in veterans. *Front Psychiatry* 2023; **14**: 1145375.

225 Case JAC, Mattoni M, Olino TM. Examining the neurobiology of non-suicidal self-injury in children and adolescents: the role of reward responsivity. *J Clin Med* 2021; **10**(16): 3561.

226 Schmaal L, van Harmelen A-L, Chatzi V, et al. Imaging suicidal thoughts and behaviors: a comprehensive review of 2 decades of neuroimaging studies. *Mol Psychiatry* 2020; **25**(2): 408–27.

227 van Velzen LS, Dauvermann MR, Colic L, et al. Structural brain alterations associated with suicidal thoughts and behaviors in young people: results from 21 international studies from the ENIGMA Suicidal Thoughts and Behaviours consortium. *Mol Psychiatry* 2022; **27**(11): 4550–60.

228 Ducasse D, Holden RR, Boyer L, et al. Psychological pain in suicidality: a meta-analysis. *J Clin Psychiatry* 2018; **79**(3): 16r10732.

229 World Health Organization. Social determinants of health. 2022. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1 (accessed Apr 2, 2023).

230 Dudgeon P, Milroy J, Calma T, et al. Solutions that work: what the evidence of our people tell us: Aboriginal and Torres Strait Islander suicide prevention evaluation report. University of Western Australia, 2016. https://doi.org/10.26182/m8y6-hn94 (accessed Apr 2, 2023).

231 Health Canada. First Nations mental wellness continuum framework: summary report. Government of Canada, 2015. https://thunderbirdpf.org/first-nations-mental-wellness-continuum-framework/ (accessed Apr 2, 2023).

232 Geulayov G, Casey D, Bale E, et al. Socio-economic disparities in patients who present to hospital for self-harm: patients' characteristics and problems in the Multicentre Study of Self-harm in England. *J Affect Disord* 2022; **318**: 238–45.

233 Barrett P, Griffin E, Corcoran P, O'Mahony MT, Arensman E. Self-harm among the homeless population in Ireland: a national registry-based study of incidence and associated factors. *J Affect Disord* 2018; **229**: 523–31.

234 Lodebo BT, Möller J, Larsson J-O, Engström K. Socioeconomic position and self-harm among adolescents: a population-based cohort study in Stockholm, Sweden. *Child Adolesc Psychiatry Ment Health* 2017; **11**: 46.

235 Hawton K, Bergen H, Geulayov G, et al. Impact of the recent recession on self-harm: longitudinal ecological and patient-level investigation from the Multicentre Study of Self-harm in England. *J Affect Disord* 2016; **191**: 132–8.

236 Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. *Annu Rev Public Health* 2019; **40**: 105–25.

237 Basu A, Boland A, Witt K, Robinson J. Suicidal behaviour, including ideation and self-harm, in young migrants: a systematic review. *Int J Environ Res Public Health* 2022; **19**(14): 8329.

238 DeSa S, Gebremeskel AT, Omonaiye O, Yaya S. Barriers and facilitators to access mental health services among refugee women in high-income countries: a systematic review. *Syst Rev* 2022; **11**(1): 62.

239 Brown H, Bryder L. Universal healthcare for all? Māori health inequalities in Aotearoa New Zealand, 1975-2000. *Soc Sci Med* 2023; **319**: 115315.

240 Chen CY, Purdie-Vaughns V, Phelan JC, Yu G, Yang LH. Racial and mental illness stereotypes and discrimination: an identity-based analysis of the Virginia Tech and Columbine shootings. *Cultur Divers Ethnic Minor Psychol* 2015; **21**(2): 279–87.

241 Ansloos J, Peltier S. A question of justice: critically researching suicide with Indigenous studies of affect, biosociality, and land-based relations. *Health (London)* 2022; **36**(1): 100–19.

242 Mills C. Decolonizing global mental health: the psychiatrization of the majority world. Hove, United Kingdom: Routledge, 2014.

243 Belcourt B-R. Meditations on reserve life, biosociality, and the taste of non-sovereignty. *Settl Colon Stud* 2018; **8**(1): 1–15.

244 Maani N, McKee M, Petticrew M, Galea S. Corporate practices and the health of populations: a research and translational agenda. *Lancet Public Health* 2020; **5**(2): e80–1.

245 Mew EJ, Padmanathan P, Konradsen F, et al. The global burden of fatal self-poisoning with pesticides 2006-15: systematic review. *J Affect Disord* 2017; **219**: 93–104.

246 Gunnell D, Knipe D, Chang S-S, et al. Prevention of suicide with regulations aimed at restricting access to highly hazardous pesticides: a systematic review of the international evidence. *Lancet Glob Health* 2017; **5**(10): e1026–37.

247 Balayannis A, Cook BR. Suicide at a distance: the paradox of knowing self-destruction. *Prog Hum Geogr* 2015; **40**(4): 530–45.

248 Pearson M, Metcalfe C, Jayamanne S, et al. Effectiveness of household lockable pesticide storage to reduce pesticide self-poisoning in rural Asia: a community-based, cluster-randomised controlled trial. *Lancet* 2017; **390**(10105): 1863–72.

249 Reifels L, Mishara BL, Dargis L, Vijayakumar L, Phillips MR, Pirkis J. Outcomes of community-based suicide prevention approaches that involve reducing access to pesticides: a systematic literature review. *Suicide Life Threat Behav* 2019; **49**(4): 1019–31.

250 Dowler C, Gaberell L. The Paraquat Papers: how Syngenta's bad science helped keep the world's deadliest weedkiller on the market. *Unearthed*, Mar 24, 2021. https://unearthed.greenpeace.org/2021/03/24/paraquat-papers-syngenta-toxic-pesticide-gramoxone/ (accessed Apr 2, 2023).

251 Amiri S, Behnezhad S. Alcohol use and risk of suicide: a systematic review and meta-analysis. *J Addict Dis* 2020; **38**(2): 200–13.

252 Borges G, Bagge CL, Cherpitel CJ, Conner KR, Orozco R, Rossow I. A meta-analysis of acute use of alcohol and the risk of suicide attempt. *Psychol Med* 2017; **47**(5): 949–57.

253 World Health Organization. Global status report on alcohol and health 2018. World Health Organization, 2018. https://www.who.int/publications/i/item/9789241565639 (accessed Apr 2, 2023).

254 Ferreira-Borges C, Rehm J, Dias S, Babor T, Parry CDH. The impact of alcohol consumption on African people in 2012: an analysis of burden of disease. *Trop Med Int Health* 2016; **21**(1): 52–60.

255 Bakke Ø, Endal D. Vested interests in addiction research and policy alcohol policies out of context: drinks industry supplanting government role in alcohol policies in sub-Saharan Africa. *Addiction* 2010; **105**(1): 22–8.

256 World Health Organization. Suicide rate estimates, age-standardized. Estimates by country. 2021. https://apps.who.int/gho/data/view.main.MHSUICIDEASDRv (accessed Jun 10, 2021).

257 Jarvi S, Jackson B, Swenson L, Crawford H. The impact of social contagion on non-suicidal self-injury: a review of the literature. *Arch Suicide Res* 2013; **17**(1): 1–19.

258 Niederkrotenthaler T, Stack S, Till B, et al. Association of increased youth suicides in the United States with the release of 13 Reasons Why. *JAMA Psychiatry* 2019; **76**(9): 933–40.

259 Niederkrotenthaler T, Voracek M, Herberth A, et al. Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *Br J Psychiatry* 2010; **197**(3): 234–43.

260 Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev* 1977; **84**(2): 191–215.

261 Doyle L, Treacy MP, Sheridan A. Self-harm in young people: prevalence, associated factors, and help-seeking in school-going adolescents. *Int J Ment Health Nurs* 2015; **24**(6): 485–94.

262 Yorkey B. 13 Reasons Why. Tape 6, Side A. Scotts Valley, CA; 2017.

263 Taiminen TJ, Kallio-Soukainen K, Nokso-Koivisto H, Kaljonen A, Helenius H. Contagion of deliberate self-harm among adolescent inpatients. *J Am Acad Child Adolesc Psychiatry* 1998; **37**(2): 211–7.

264 Wells G, Horwitz J, Seetharaman D. Facebook knows Instagram is toxic for teen girls, company documents show. The Wall Street Journal. 2021.

265 Nuij C, van Ballegooijen W, de Beurs D, et al. Safety planning-type interventions for suicide prevention: meta-analysis. *Br J Psychiatry* 2021; **219**(2): 419–26.

266 Ougrin D, Tranah T, Stahl D, Moran P, Asarnow JR. Therapeutic interventions for suicide attempts and self-harm in adolescents: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry* 2015; **54**(2): 97–107.E2.

267 Cottrell DJ, Wright-Hughes A, Collinson M, et al. Effectiveness of systemic family therapy versus treatment as usual for young people after self-harm: a pragmatic, phase 3, multicentre, randomised controlled trial. *Lancet Psychiatry* 2018; **5**(3): 203–16.

268 Ougrin D, Asarnow JR. The end of family therapy for self-harm, or a new beginning? *Lancet Psychiatry* 2018; **5**(3): 188–9.

269 Zisook S, Domingues I, Compton J. Pharmacologic approaches to suicide prevention. *Focus (Am Psychiatr Publ)* 2023; **21**(2): 137–44.

270 Hawkins EM, Coryell W, Leung S, et al. Effects of somatic treatments on suicidal ideation and completed suicides. *Brain Behav* 2021; **11**(11): e2381.

271 Lauterbach E, Felber W, Müller-Oerlinghausen B, et al. Adjunctive lithium treatment in the prevention of suicidal behaviour in depressive disorders: a randomised, placebo-controlled, 1-year trial. *Acta Psychiatr Scand* 2008; **118**(6): 469–79.

272 Oquendo MA, Galfalvy HC, Currier D, et al. Treatment of suicide attempters with bipolar disorder: a randomized clinical trial comparing lithium and valproate in the prevention of suicidal behavior. *Am J Psychiatry* 2011; **168**(10): 1050–6.

273 Katz IR, Rogers MP, Lew R, et al. Lithium treatment in the prevention of repeat suicide-related outcomes in veterans with major depression or bipolar disorder: a randomized clinical trial. *JAMA Psychiatry* 2022; **79**(1): 24–32.

274 Meltzer HY, Alphs L, Green AI, et al. Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). *Arch Gen Psychiatry* 2003; **60**(1): 82–91.

275 Taipale H, Lähteenvuo M, Tanskanen A, Mittendorfer-Rutz E, Tiihonen J. Comparative effectiveness of antipsychotics for risk of attempted or completed suicide among persons with schizophrenia. *Schizophr Bull* 2021; **47**(1): 23–30.

276 Wagstaff A, Perry C. Clozapine: in prevention of suicide in patients with schizophrenia or schizoaffective disorder. *CNS Drugs* 2003; **17**(4): 273–80.

277 Nikayin S, Sanacora G. Evaluating the role of ketamine/esketamine in the management of major depressive disorder with suicide risk. *CNS Drugs* 2021; **35**(10): 1069–79.

278 Leather JZ, Keyworth C, Kapur N, Campbell SM, Armitage CJ. Examining drivers of self-harm guideline implementation by general practitioners: a qualitative analysis using the theoretical domains framework. *Br J Health Psychol* 2022; **27**(4): 1275–95.

279 Leather JZ, O'Connor RC, Quinlivan L, Kapur N, Campbell S, Armitage CJ. Healthcare professionals' implementation of national guidelines with patients who self-harm. *J Psychiatr Res* 2020; **130**: 405–11.

280 McManus S, Bebbington P, Jenkins R, Brugha T. Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014. Leeds, United Kingdom: NHS Digital. https://digital.nhs.uk/data-and-information/publications/statistical/adult-psychiatric-morbidity-survey/adult-psychiatric-morbidity-survey-survey-of-mental-health-and-wellbeing-england-2014 (accessed Apr 2, 2023).

281 Tan SC, Tam CL, Bonn G. Feeling better or worse? The lived experience of non-suicidal self-injury among Malaysian University students. *Asia Pac J Couns Psychother* 2019; **10**(1): 3–20.

282 Quarshie EN-B, Waterman MG, House AO. Adolescents at risk of self-harm in Ghana: a qualitative interview study exploring the views and experiences of key adult informants. *BMC Psychiatry* 2020; **20**(1): 310.

283 Carr MJ, Ashcroft DM, Kontopantelis E, et al. Premature death among primary care patients with a history of self-harm. *Ann Fam Med* 2017; **15**(3): 246–54.

284 Kapur N, Steeg S, Turnbull P, et al. Hospital management of suicidal behaviour and subsequent mortality: a prospective cohort study. *Lancet Psychiatry* 2015; **2**(9): 809–16.

285 Liu B-P, Qin P, Zhang J, et al. Suicide and non-suicide mortality and associated risk factors among suicide attempters: A 10-year follow-up of a large cohort in rural China. *J Psychiatr Res* 2022; **150**: 71–8.

286 O'Keeffe S, Suzuki M, Ryan M, Hunter J, McCabe R. Experiences of care for self-harm in the emergency department: Comparison of the perspectives of patients, carers and practitioners. *BJPsych Open* 2021; **7**(5): e175.

287 Quinlivan LM, Gorman L, Littlewood DL, et al. 'Relieved to be seen'—patient and carer experiences of psychosocial assessment in the emergency department following self-harm: qualitative analysis of 102 free-text survey responses. *BMJ Open* 2021; **11**(5): e044434.

288 Graney J, Hunt IM, Quinlivan L, et al. Suicide risk assessment in UK mental health services: a national mixed-methods study. *Lancet Psychiatry* 2020; **7**(12): 1046–53.

289 Quinlivan L, Cooper J, Meehan D, et al. Predictive accuracy of risk scales following self-harm: multicentre, prospective cohort study. *Br J Psychiatry* 2017; **210**(6): 429–36.

290 Carter G, Milner A, McGill K, Pirkis J, Kapur N, Spittal MJ. Predicting suicidal behaviours using clinical instruments: systematic review and meta-analysis of positive predictive values for risk scales. *Br J Psychiatry* 2017; **210**(6): 387–95.

291 Lejeune A, Le Glaz A, Perron P-A, et al. Artificial intelligence and suicide prevention: A systematic review. *Eur Psychiatry* 2022; **65**(1): e19.

292 Pokorny AD. Prediction of suicide in psychiatric patients. Report of a prospective study. *Arch Gen Psychiatry* 1983; **40**(3): 249–57.

293 Husain N, Afsar S, Ara J, et al. Brief psychological intervention after self-harm: randomised controlled trial from Pakistan. *Br J Psychiatry* 2014; **204**(6): 462–70.

294 Tharani A, Farooq S, Lakhdir MPA, Talib U, Khan MM. Characteristics and patterns of individuals who have self-harmed: a retrospective descriptive study from Karachi, Pakistan. *BMC Psychiatry* 2022; **22**(1): 367.

295 Shidhaye R, Murhar V, Gangale S, et al. The effect of VISHRAM, a grass-roots community-based mental health programme, on the treatment gap for depression in rural communities in India: a population-based study. *Lancet Psychiatry* 2017; **4**(2): 128–35.

296 Hjelmeland H, Knizek BL. Time to change direction in suicide research. In: O'Connor RC, Pirkis J, eds. The international handbook of suicide prevention. 2nd ed. Chichester, United Kingdom: John Wiley & Sons, 2016: 696–709.

297 Abrutyn S, Mueller AS. Toward a robust science of suicide: epistemological, theoretical, and methodological considerations in advancing suicidology. *Death Stud* 2021; **45**(7): 522–7.

298 Chandler A. Socioeconomic inequalities of suicide: sociological and psychological intersections. *Eur J Soc Theory* 2019; **23**(1): 33–51.

299 Baker C, Shaw C, Biley F. Our encounters with self-harm. Monmouth, United Kingdom: PCCS Books, 2014.

300 Faulkner A. Survivor research and Mad Studies: the role and value of experiential knowledge in mental health research. *Disabil Soc* 2017; **32**(4): 500–20.

301 Groot B, Haveman A, Abma T. Relational, ethically sound co-production in mental health care research: epistemic injustice and the need for an ethics of care. *Crit Public Health* 2022; **32**(2): 230–40.

302 Beresford P. PPI or user involvement: taking stock from a service user perspective in the twenty first century. *Res Involv Engagem* 2020; **26**(6): 36.

303 Presson B, Barnes B, Rambo C, Author X. Traces and shards of self-injury: 123Strange accounting with "Author X". In: Adams TE, Boylorn RM, Tillmann LM, eds. Advances in autoethnography and narrative inquiry: reflections on the legacy of Carolyn Ellis and Arthur Bochner. 1st ed. Abingdon, United Kingdom: Routledge, 2021: 123–41.

304 Beresford P, Farr M, Hickey G, et al. COVID-19 and co-production in health and social care research, policy, and practice: volume 1: the challanges and necessity of co-production. Bristol, United Kingdom: Policy Press, 2021.

305 Bronfenbrenner U. The ecology of human development. Cambridge, Massachusetts, United States: Harvard University Press, 1979.

306 Centers for Disease Control and Prevention. The social-ecological model: a framework for prevention. 2021. https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html (accessed Jul 30, 2021).

307 O'Connor RC, Worthman CM, Abanga M, et al. Gone too soon: priorities for action to prevent premature mortality associated with mental illness and mental distress. *Lancet Psychiatry* 2023; **10**(6): 452–64.

308 Standley CJ. Expanding our paradigms: intersectional and socioecological approaches to suicide prevention. *Death Stud* 2020; **46**(1): 224–32.

309 Standley CJ, Foster-Fishman P. Intersectionality, social support, and youth suicidality: a socioecological approach to prevention. *Suicide Life Threat Behav* 2021; **51**(2): 203–11.

310 Mueller AS, Abrutyn S, Pescosolido B, Diefendorf S. The social roots of suicide: theorizing how the external social world matters to suicide and suicide prevention. *Front Psychol* 2021; **12**: 621569.

311 Caine ED. Building the foundation for comprehensive suicide prevention – based on intention and planning in a social-ecological context. *Epidemiol Psychiatr Sci* 2019; **29**: e69.

312 Ssewanyana D, van Baar A, Mwangala PN, Newton CR, Abubakar A. Inter-relatedness of underlying factors for injury and violence among adolescents in rural coastal Kenya: a qualitative study. *Health Psychol Open* 2019; **6**(1).

313 Chaney S. Am I a researcher or a self-harmer? Mental health, objectivity and identity politics in history. *Soc Theory Health* 2020; **18**(2): 152–68.

314 Rimke H. Introduction – mental and emotional distress as a social justice issue: beyond psychocentrism. *Stud Soc Justice* 2016; **10**(1): 4–17.

315 McLachlan A, Waitoki W, Harris P, Jones H. Whiti te rā: a guide to connecting Māori to traditional wellbeing pathways. *J Indig Wellbeing* 2021; **6**(1): 8.

316 Stanley LR, Swaim RC, Kaholokula JK, Kelly KJ, Belcourt A, Allen J. The imperative for research to promote health equity in Indigenous communities. *Prev Sci* 2020; **21**(Suppl 1): 13–21.

317 Wexler L, Chandler M, Gone JP, et al. Advancing suicide prevention research with rural American Indian and Alaska Native populations. *Am J Public Health* 2015; **105**(5): 891–9.

318 Bainbridge R, McCalman J, Jongen C, et al. Improving social and emotional wellbeing for Aboriginal and Torres Strait Islander people: an evidence check rapid review brokered by the Sax Institute for Beyond Blue. Sax Institute, 2018. https://www.beyondblue.org.au/docs/default-source/policy-submissions/aboriginal-programs-for-sewb_final-4.pdf?sfvrsn=157bbfea_4 (accessed Apr 2, 2023).

319 Redvers J, Bjerregaard P, Eriksen H, et al. A scoping review of Indigenous suicide prevention in circumpolar regions. *Int J Circumpolar Health* 2015; **74**: 27509.

320 Pham TV, Fetter AK, Wiglesworth A, et al. Suicide interventions for American Indian and Alaska Native populations: a systematic review of outcomes. *SSM - Mental Health* 2021; **1**: 100029.

321 Dudgeon P, Bray A, Ring I, McPhee R. Beyond evidence-deficit narratives in Indigenous suicide prevention. Australian Institute of Health and Welfare, 2021. https://doi.org/10.25816/7evx-x848 (accessed Apr 2, 2023).

322 Dudgeon P, Bray A, Darlaston-Jones D, Walker R. Aboriginal participatory action research: an Indigenous research methodology strengthening decolonisation and social and emotional wellbeing. Lowitja Institute, 2020. https://doi.org/10.48455/smch-8z25 (accessed Apr 2, 2023).

323 Million D. Felt theory: an Indigenous feminist approach to affect and history. *Wicazo Sa Rev* 2009; **24**(2): 53–76.

Cai Z, Chang Q, Yip PSF. A scientometric analysis of suicide research: 1990-2018. *J Affect Disord* 2020; **266**: 356–65.

Skegg K. Self-harm. *Lancet* 2005; **366**(9495): 1471–83.

Kinyanda E, Wamala D, Musisi S, Hjelmeland H. Suicide in urban Kampala, Uganda: a preliminary exploration. *Afr Health Sci* 2011; **11**(2): 219–27.

Pedersen B, Ssemugabo C, Nabankema V, Jørs E. Characteristics of pesticide poisoning in rural and urban settings in Uganda. *Environ Health Insights* 2017; **11**: 1178630217713015.

Boduszek D, Debowska A, Ochen EA, et al. Prevalence and correlates of non-suicidal self-injury, suicidal ideation, and suicide attempt among children and adolescents: findings from Uganda and Jamaica. *J Affect Disord* 2021; **283**: 172–8.

World Health Organization. National suicide prevention strategies: progress, examples and indicators. World Health Organization, 2018. https://www.who.int/publications/i/item/national-suicide-prevention-strategies-progress-examples-and-indicators (accessed Apr 2, 2023).

Woelbert E, Lundell-Smith K, White R, Kemmer D. Accounting for mental health research funding: developing a quantitative baseline of global investments. *Lancet Psychiatry* 2021; **8**(3): 250–8.

Woelbert E, White R, Lundell-Smith K, Grant J, Kemmer D. The inequities of mental health research (IAMHRF). International Alliance of Mental Health Research Funders, 2020. https://digitalscience.figshare.com/articles/report/The_Inequities_of_Mental_Health_Research_IAMHRF_/13055897 (accessed Apr 2, 2023).

Quarshie EN-B, Waterman MG, House AO. Self-harm with suicidal and non-suicidal intent in young people in sub-Saharan Africa: a systematic review. *BMC Psychiatry* 2020; **20**(1): 234.

Marecek J. Young women's suicide in Sri Lanka: cultural, ecological, and psychological factors. *Asian J Couns* 2006; **13**(1): 63–92.

Nichter M. Idioms of distress: alternatives in the expression of psychosocial distress: a case study from South India. *Cult Med Psychiatry* 1981; **5**(4): 379–408.

Sørensen JB, Agampodi T, Sørensen BR, Siribaddana S, Konradsen F, Rheinländer T. 'We lost because of his drunkenness': the social processes linking alcohol use to self-harm in the context of daily life stress in marriages and intimate relationships in rural Sri Lanka. *BMJ Glob Health* 2017; **2**(4): e000462.

Amitai M, Apter A. Social aspects of suicidal behavior and prevention in early life: a review. *Int J Environ Res Public Health* 2012; **9**(3): 985–94.

Kiekens G, Robinson K, Tatnell R, Kirtley OJ. Opening the black box of daily life in nonsuicidal self-injury research: with great opportunity comes great responsibility. *JMIR Ment Health* 2021; **8**(11): e30915.

Kleiman EM, Turner BJ, Fedor S, et al. Digital phenotyping of suicidal thoughts. *Depress Anxiety* 2018; **35**(7): 601–8.

339 Nock MK, Prinstein MJ, Sterba SK. Revealing the form and function of self-injurious thoughts and behaviors: a real-time ecological assessment study among adolescents and young adults. *J Abnorm Psychol* 2009; **118**(4): 816–27.

340 Owens C, Fox F, Redwood S, et al. Measuring outcomes in trials of interventions for people who self-harm: qualitative study of service users' views. *BJPsych Open* 2020; **6**(2): e22.

341 Csikszentmihalyi M, Larson R. Validity and reliability of the experience-sampling method. *J Nerv Ment Dis* 1987; **175**(9): 526–36.

342 Myin-Germeys I, Kasanova Z, Vaessen T, et al. Experience sampling methodology in mental health research: new insights and technical developments. *World Psychiatry* 2018; **17**(2): 123–32.

343 Stone AA, Shiffman S. Ecological momentary assessment (EMA) in behavioral medicine. *Ann Behav Med* 1994; **16**(3): 199–202.

344 Kleiman EM, Glenn CR, Liu RT. Real-time monitoring of suicide risk among adolescents: potential barriers, possible solutions, and future directions. *J Clin Child Adolesc Psychol* 2019; **48**(6): 934–46.

345 Kleiman EM, Turner BJ, Fedor S, Beale EE, Huffman JC, Nock MK. Examination of real-time fluctuations in suicidal ideation and its risk factors: results from two ecological momentary assessment studies. *J Abnorm Psychol* 2017; **126**(6): 726–38.

346 Gratch I, Choo T-H, Galfalvy H, et al. Detecting suicidal thoughts: the power of ecological momentary assessment. *Depress Anxiety* 2021; **38**(1): 8–16.

347 Oquendo MA, Galfalvy HC, Choo T-H, et al. Highly variable suicidal ideation: a phenotypic marker for stress induced suicide risk. *Mol Psychiatry* 2021; **26**(9): 5079–86.

348 Coppersmith DDL, Bentley KH, Kleiman EM, Nock MK. Variability in the functions of nonsuicidal self-injury: evidence from three real-time monitoring studies. *Behav Ther* 2021; **52**(6): 1516–28.

349 Myin-Germeys I, Klippel A, Steinhart H, Reininghaus U. Ecological momentary interventions in psychiatry. *Curr Opin Psychiatry* 2016; **29**(4): 258–63.

350 Coppersmith DDL, Dempsey W, Kleiman EM, Bentley KH, Murphy SA, Nock MK. Just-in-time adaptive interventions for suicide prevention: promise, challenges, and future directions. *Psychiatry* 2022; **85**(2): 317–33.

351 Hetrick SE, Subasinghe A, Anglin K, Hart L, Morgan A, Robinson J. Understanding the needs of young people who engage in self-harm: a qualitative investigation. *Front Psychol* 2019; **10**(10): 2916.

352 Owens C, Farrand P, Darvill R, Emmens T, Hewis E, Aitken P. Involving service users in intervention design: a participatory approach to developing a text-messaging intervention to reduce repetition of self-harm. *Health Expect* 2011; **14**(3): 285–95.

353 Robinson J, Bailey E, Witt K, et al. What works in youth suicide prevention? A systematic review and meta–analysis. *EClinicalMedicine* 2018; **4–5**: 52–91.

354 Hetrick SE, Robinson J, Burge E, et al. Youth codesign of a mobile phone app to facilitate self-monitoring and management of mood symptoms in young people with major depression, suicidal ideation, and self-harm. *JMIR Ment Health* 2018; **5**(1): e9.

355 Piccirillo ML, Rodebaugh TL. Foundations of idiographic methods in psychology and applications for psychotherapy. *Clin Psychol Rev* 2019; **71**: 90–100.

356 Stanley B, Brown GK. Safety planning intervention: a brief intervention to mitigate suicide risk. *Cogn Behav Pract* 2012; **19**(2): 256–64.

357 Verhagen SJW, Hasmi L, Drukker M, van Os J, Delespaul PAEG. Use of the experience sampling method in the context of clinical trials. *Evid Based Ment Health* 2016; **19**(3): 86–9.

358 Barlow D, Nock M, Hersen M. Single case experimental designs: strategies for studying behavior change. 3rd ed. Boston, United States: Pearson, 2008.

359 Barlow DH, Nock MK. Why can't we be more idiographic in our research? *Perspect Psychol Sci* 2009; **4**(1): 19–21.

360 Rizvi SL, Nock MK. Single-case experimental designs for the evaluation of treatments for self-injurious and suicidal behaviors. *Suicide Life Threat Behav* 2008; **38**(5): 498–510.

361 Kessler RC. Clinical epidemiological research on suicide-related behaviors-where we are and where we need to go. *JAMA Psychiatry* 2019; **76**(8): 777–8.

362 Allender S, Hayward J, Gupta S, et al. Bayesian strategy selection identifies optimal solutions to complex problems using an example from GP prescribing. *NPJ Digit Med* 2020; **3**: 7.

363 Czyz EK, King CA, Prouty D, Micol VJ, Walton M, Nahum-Shani I. Adaptive intervention for prevention of adolescent suicidal behavior after hospitalization: a pilot sequential multiple assignment randomized trial. *J Child Psychol Psychiatry* 2021; **62**(8): 1019–31.

364 Jaroszewski AC, Morris RR, Nock MK. Randomized controlled trial of an online machine learning-driven risk assessment and intervention platform for increasing the use of crisis services. *J Consult Clin Psychol* 2019; **87**(4): 370–9.

365 Kirtley OJ, van Mens K, Hoogendoorn M, Kapur N, de Beurs D. Translating promise into practice: a review of machine learning in suicide research and prevention. *Lancet Psychiatry* 2022; **9**(3): 243–52.

366 Franklin JC, Ribeiro JD, Fox KR, et al. Risk factors for suicidal thoughts and behaviors: a meta-analysis of 50 years of research. *Psychol Bull* 2017; **143**(2): 187–232.

367 Barak-Corren Y, Castro VM, Javitt S, et al. Predicting suicidal behavior from longitudinal electronic health records. *Am J Psychiatry* 2017; **174**(2): 154–62.

368 Barak-Corren Y, Castro VM, Nock MK, et al. Validation of an electronic health record-based suicide risk prediction modeling approach across multiple health care systems. *JAMA Netw Open* 2020; **3**(3): e201262.

369 Simon GE, Johnson E, Lawrence JM, et al. Predicting suicide attempts and suicide deaths following outpatient visits using electronic health records. *Am J Psychiatry* 2018; **175**(10): 951–60.

370 Tran T, Luo W, Phung D, et al. Risk stratification using data from electronic medical records better predicts suicide risks than clinician assessments. *BMC Psychiatry* 2014; **14**: 76.

371 Zheng L, Wang O, Hao S, et al. Development of an early-warning system for high-risk patients for suicide attempt using deep learning and electronic health records. *Transl Psychiatry* 2020; **10**(1): 72.

372 Barnett S, Huckvale K, Christensen H, Venkatesh S, Mouzakis K, Vasa R. Intelligent sensing to inform and learn (InSTIL): a scalable and governance-aware platform for universal, smartphone-based digital phenotyping for research and clinical applications. *J Med Internet Res* 2019; **21**(11): e16399.

373 Allen NB, Nelson BW, Brent D, Auerbach RP. Short-term prediction of suicidal thoughts and behaviors in adolescents: can recent developments in technology and computational science provide a breakthrough? *J Affect Disord* 2019; **250**: 163–9.

374 Braithwaite SR, Giraud-Carrier C, West J, Barnes MD, Hanson CL. Validating machine learning algorithms for Twitter data against established measures of suicidality. *JMIR Ment Health* 2016; **3**(2): e21.

375 Domínguez-Baleón C, Gutiérrez-Mondragón LF, Campos-González AI, Rentería ME. Neuroimaging studies of suicidal behavior and non-suicidal self-injury in psychiatric patients: a systematic review. *Front Psychiatry* 2018; **9**: 500.

376 González-Castro TB, Tovilla-Zárate CA, Genis-Mendoza AD, et al. Identification of gene ontology and pathways implicated in suicide behavior: systematic review and enrichment analysis of GWAS studies. *Am J Med Genet B Neuropsychiatr Genet* 2019; **180**(5): 320–9.

377 Johnston JAY, Wang F, Liu J, et al. Multimodal neuroimaging of frontolimbic structure and function associated with suicide attempts in adolescents and young adults with bipolar disorder. *Am J Psychiatry* 2017; **174**(7): 667–75.

378 Levey DF, Polimanti R, Cheng Z, et al. Genetic associations with suicide attempt severity and genetic overlap with major depression. *Transl Psychiatry* 2019; **9**(1): 22.

379 Peng H, Wu K, Li J, et al. Increased suicide attempts in young depressed patients with abnormal temporal-parietal-limbic gray matter volume. *J Affect Disord* 2014; **165**: 69–73.

380 Garcia-Ceja E, Riegler M, Nordgreen T, Jakobsen P, Oedegaard KJ, Tørresen J. Mental health monitoring with multimodal sensing and machine learning: a survey. *Pervasive Mob Comput* 2018; **51**: 1–26.

381 Ramírez-Cifuentes D, Freire A, Baeza-Yates R, et al. Detection of suicidal ideation on social media: multimodal, relational, and behavioral analysis. *J Med Internet Res* 2020; **22**(7): e17758.

382 Nock MK, Kleiman EM, Abraham M, et al. Consensus statement on ethical & safety practices for conducting digital monitoring studies with people at risk of suicide and related behaviors. *Psychiatr Res Clin Pract* 2021; **3**(2): 57–66.

383 Bradley A, van der Meer R, McKay C. Personalized pancreatic cancer management: a systematic review of how machine learning is supporting decision-making. *Pancreas* 2019; **48**(5): 598–604.

384 de Filippis R, Carbone EA, Gaetano R, et al. Machine learning techniques in a structural and functional MRI diagnostic approach in schizophrenia: a systematic review. *Neuropsychiatr Dis Treat* 2019; **15**: 1605–27.

385 Shung D, Simonov M, Gentry M, Au B, Laine L. Machine learning to predict outcomes in patients with acute gastrointestinal bleeding: a systematic review. *Dig Dis Sci* 2019; **64**(8): 2078–87.

386 Coley RY, Johnson E, Simon GE, Cruz M, Shortreed SM. Racial/ethnic disparities in the performance of prediction models for death by suicide after mental health visits. *JAMA Psychiatry* 2021; **78**(7): 726–34.

387 Raad H, Cornelius V, Chan S, Williamson E, Cro S. An evaluation of inverse probability weighting using the propensity score for baseline covariate adjustment in smaller population randomised controlled trials with a continuous outcome. *BMC Med Res Methodol* 2020; **20**(1): 70.

388 Li Y, Xie H, Lin Y, Lui JCS. Unifying offline causal inference and online bandit learning for data driven decision. The World Wide Web Conference WWW 2021. 2021; 2291–303.

389 Ribeiro JD, Huang X, Fox KR, Walsh CG, Linthicum KP. Predicting imminent suicidal thoughts and nonfatal attempts: the role of complexity. *Clin Psychol Sci* 2019; **7**(5): 941–57.

390 Carpenter TP, Law KC. Optimizing the scientific study of suicide with open and transparent research practices. *Suicide Life Threat Behav* 2021; **51**(1): 36–46.

391 Kirtley OJ, Janssens JJ, Kaurin A. Open science in suicide research is open for business. *Crisis* 2022; **43**(5): 355–60.

392 Morthorst BR, Soegaard B, Nordentoft M, Erlangsen A. Incidence rates of deliberate self-harm in Denmark 1994-2011. *Crisis* 2016; **37**(4): 256–64.

393 Qin P, Mehlum L. Deliberate self-harm: Case identification and incidence estimate upon data from national patient registry. *PLoS One* 2020; **15**(4): e0231885.

394 Ejlskov L, Antonsen S, Wulff JN, et al. Multilevel interactions between family and neighbourhood socioeconomic indices in childhood and later risks of self-harm and violent criminality in Denmark: a national cohort study. *Lancet Public Health* 2023; **8**(2): E99–108.

395 Hawton K, Bergen H, Casey D, et al. Self-harm in England: a tale of three cities. Multicentre study of self-harm. *Soc Psychiatry Psychiatr Epidemiol* 2007; **42**(7): 513–21.

396 Perry IJ, Corcoran P, Fitzgerald AP, Keeley HS, Reulbach U, Arensman E. The incidence and repetition of hospital-treated deliberate self harm: findings from the world's first national registry. *PLoS One* 2012; **7**(2): e31663.

397 Robinson J, Witt K, Lamblin M, et al. Development of a self-harm monitoring system for Victoria. *Int J Environ Res Public Health* 2020; **17**(24): 9385.

398 Mars B, Heron J, Klonsky D, et al. What distinguishes adolescents with suicidal thoughts from those who have attempted suicide? A population-based birth cohort study. *J Child Psychol Psychiatry* 2019; **60**(1): 91–99.

399 Beesdo-Baum K, Voss C, Venz J, et al. The Behavior and Mind Health (BeMIND) study: methods, design and baseline sample characteristics of a cohort study among adolescents and young adults. *Int J Methods Psychiatr Res* 2020; **29**(1): e1804.

400 Janssens J, Myin-Germeys I, Lafit G, et al. Lifetime and current self-harm thoughts and behaviours and their relationship to parent and peer attachment. *OSF Preprints* 2022.

401 Kiekens G, Claes L, Hasking P, et al. A longitudinal investigation of non-suicidal self-injury persistence patterns, risk factors, and clinical outcomes during the college period. *Psychol Med* 2023; **53**(13): 6011–26.

402 Pirkis J, Currier D, Carlin J, et al. Cohort profile: Ten to Men (the Australian Longitudinal Study on Male Health). *Int J Epidemiol* 2017; **46**(3): 793–4i.

403 de Beurs D, Bockting C, Kerkhof A, et al. A network perspective on suicidal behavior: understanding suicidality as a complex system. *Suicide Life Threat Behav* 2021; **51**(1): 115–26.

404 Fox KR, Huang X, Linthicum KP, Wang SB, Franklin JC, Ribeiro JD. Model complexity improves the prediction of nonsuicidal self-injury. *J Consult Clin Psychol* 2019; **87**(8): 684–92.

405 de Beurs D. Network analysis: a novel approach to understand suicidal behaviour. *Int J Environ Res Public Health* 2017; **14**(3): 219.

406 Hinze V, Ford T, Evans R, Gjelsvik B, Crane C. Exploring the relationship between pain and self-harm thoughts and behaviours in young people using network analysis. *Psychol Med* 2021; **52**(15): 1–10.

407 Kiekens G, Hasking P, Nock MK, et al. A comparison of affective-cognitive states in daily life between emerging adults with and without past-year nonsuicidal self-injury. *Behav Ther* 2023.

408 Kim S, Woo S, Lee J-S. Investigation of the subtypes of nonsuicidal self-injury based on the forms of self-harm behavior: examining validity and utility via latent class analysis and ecological momentary assessment. *J Korean Med Sci* 2023; **38**(17): e132.

409 Shahwan S, Lau JH, Abdin E, et al. A typology of nonsuicidal self-injury in a clinical sample: a latent class analysis. *Clin Psychol Psychother* 2020; **27**(6): 791–803.

410 Uh S, Dalmaijer ES, Siugzdaite R, Ford TJ, Astle DE. Two pathways to self-harm in adolescence. *J Am Acad Child Adolesc Psychiatry* 2021; **60**(12): 1491–1500.

411 Millner AJ, Robinaugh DJ, Nock MK. Advancing the understanding of suicide: the need for formal theory and rigorous descriptive research. *Trends Cogn Sci* 2020; **24**(9): 704–16.

412 Nock MK, Prinstein MJ. A functional approach to the assessment of self-mutilative behavior. *J Consult Clin Psychol* 2004; **72**(5): 885–90.

413 O'Connor RC, Kirtley OJ. The integrated motivational-volitional model of suicidal behaviour. *Philos Trans R Soc Lond B Biol Sci* 2018; **373**(1754): 20170268.

414 Stack S. Contributing factors to suicide: political, social, cultural and economic. *Prev Med* 2021; **152**(Pt 1): 106498.

415 Meda N, Miola A, Slongo I, Zordan MA, Sambataro F. The impact of macroeconomic factors on suicide in 175 countries over 27 years. *Suicide Life Threat Behav* 2022; **52**(1): 49–58.

416 Yur'yev A, Värnik A, Värnik P, Sisask M, Leppik L. Role of social welfare in European suicide prevention. *Int J Soc Welf* 2012; **21**(1): 26–33.

417 Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *Lancet* **374**(9686): 315–23.

418 Kaufman JA, Salas-Hernández LK, Komro KA, Livingston MD. Effects of increased minimum wages by unemployment rate on suicide in the USA. *J Epidemiol Community Health* 2020; **74**(3): 219–24.

419 Gertner AK, Rotter JS, Shafer PR. Association between state minimum wages and suicide rates in the U.S. *Am J Prev Med* 2019; **56**(5): 648–54.

420 Dow WH, Godøy A, Lowenstein C, Reich M. Can labor market policies reduce deaths of despair? *J Health Econ* 2020; **74**: 102372.

421 Isacsson G, Rich CL. Management of patients who deliberately harm themselves. *BMJ* 2001; **322**(7280):213–5.

422 de Beurs DP, de Groot MH, de Keijser J, van Duijn E, de Winter RFP, Kerkhof AJFM. Evaluation of benefit to patients of training mental health professionals in suicide guidelines: cluster randomised trial. *Br J Psychiatry* 2016; **208**(5): 477–83.

423 Zarska A, Barnicot K, Lavelle M, Dorey T, McCabe R. A systematic review of training interventions for emergency department providers and psychosocial interventions delivered by emergency department providers for patients who self-harm. *Arch Suicide Res* 2023; **27**(3): 829–50.

424 National Collaborating Centre for Mental Health. Self-harm and suicide prevention competence framework. Health Education England, 2018. https://www.ucl.ac.uk/pals/research/clinical-educational-and-health-psychology/research-groups/core/competence-frameworks/self (accessed Feb 7, 2023).

425 Garcia CL, de Abreu LC, Ramos JLS, et al. Influence of burnout on patient safety: systematic review and meta-analysis. *Medicina (Kaunas)* 2019; **55**(9): 553.

426 Castro-Ramirez F, Al-Suwaidi M, Garcia P, Rankin O, Ricard JR, Nock MK. Racism and poverty are barriers to the treatment of youth mental health concerns. *J Clin Child Adolesc Psychol* 2021; **50**(4): 534–46.

427 Rees SN, Crowe M, Harris S. The lesbian, gay, bisexual and transgender communities' mental health care needs and experiences of mental health services: an integrative review of qualitative studies. *J Psychiatr Ment Health Nurs* 2021; **28**(4): 578–89.

428 King AJ, Brophy LM, Fortune TL, Byrne L. Factors affecting mental health professionals' sharing of their lived experience in the workplace: a scoping review. *Psychiatr Serv* 2020; **71**(10): 1047–64.

429 Lavis A, Winter R. #Online harms or benefits? An ethnographic analysis of the positives and negatives of peer-support around self-harm on social media. *J Child Psychol Psychiatry* 2020; **61**(8): 842–54.

430 Abou Seif N, Bastien RJ-B, Wang B, et al. Effectiveness, acceptability and potential harms of peer support for self-harm in non-clinical settings: systematic review. *BJPsych Open* 2022; **8**(1): e28.

431 Boyce M, Munn-Giddings C, Secker J. 'It is a safe space': self-harm self-help groups. *Ment Health Rev (Brighton)* 2018; **23**(1): 54–63.

1 2 3 432 Faulkner A, Rowan Olive R. Not a naughty child: people's experiences of service responses to self-injury. National Survivor User Network, 2022. https://www.nsun.org.uk/not-a-naughty-child-peoples-experiences-of-service-responses-to-self-injury/ (accessed Apr 2, 2023).

4 5 433 Make Space. Community, care, and creativity: supporting LGBTQ+ people with experience of self-harm. Make Space, 2021. https://www.makespaceco.org/learn (accessed Apr 2, 2023).

6 7 434 Make Space. Support and solidarity: supporting LGBTQ+ people with experience of self-harm. Make Space, 2021. https://www.makespaceco.org/learn (accessed Apr 2, 2023).

8 9 435 Cresswell M. Psychiatric "survivors" and testimonies of self-harm. *Soc Sci Med* 2005; **61**(8): 1668–77.

10 11 12 436 Kola L, Kohrt BA, Hanlon C, et al. COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health. *Lancet Psychiatry* 2021; **8**(6): 535–50.

13 14 437 Fricker M. Epistemic injustice: power and the ethics of knowing. New York, United States: Oxford University Press, 2007.

15 16 17 438 Knowles S, Sharma V, Fortune S, Wadman R, Churchill R, Hetrick S. Adapting a codesign process with young people to prioritize outcomes for a systematic review of interventions to prevent self-harm and suicide. *Health Expect* 2022; **25**(4): 1393–404.

18 19 439 Fitzpatrick SJ, River J. Beyond the medical model: future directions for suicide intervention services. *Int J Health Serv* 2018; **48**(1): 189–203.

20 21 22 440 Taylor-King S, Carr S, Edwards-White T. Unkindest cuts: reflections on destruction and resilience in LGBTQ community-based mental health support. *Asylum Magazine* 2016; **23**(3): 10–2.

23 24 25 441 Johansson BA, Holmström E, Eberhard S, Lindgren A, Rask O. Introducing brief admissions by self-referral in child and adolescent psychiatry: an observational cohort study in Sweden. *Lancet Psychiatry* 2023; **10**(8): 598–607.

26 27 28 442 Hanlon CA, Chopra J, Boland J, et al. A mixed-methods evaluation of the acceptability and fidelity of the James' Place model for men experiencing suicidal crisis. *Health Psychol Behav Med* 2023; **11**(1): 2265142.

29 30 443 De Leon G, Unterrainer HF. The therapeutic community: a unique social psychological approach to the treatment of addictions and related disorders. *Front Psychiatry* 2020; **11**: 786.

31 32 33 444 Chiesa M, Fonagy P, Holmes J, Drahorad C. Residential versus community treatment of personality disorders: a comparative study of three treatment programs. *Am J Psychiatry* 2004; **161**(8): 1463–70.

34 35 445 Pearce S, Scott L, Attwood G, et al. Democractic therapeutic community treatment for personality disorder: randomised controlled trial. *Br J Psychiatry* 2017; **210**(2): 149–56.

36 37 38 446 Sander LB, Lemor ML, Van der Sloot RJA, et al. A systematic evaluation of mobile health applications for the prevention of suicidal behavior or non-suicidal self-injury. *Front Digit Health* 2021; **3**: 689692.

39 40 447 Cliffe B, Tingley J, Greenhalgh I, Stallard P. mHealth interventions for self-harm: scoping review. *J Med Internet Res* 2021; **23**(4): e25140.

448 Russell K, Rasmussen S, Hunter SC. Does mental well-being protect against self-harm thoughts and behaviors during adolescence? A six-month prospective investigation. *Int J Environ Res Public Health* 2020; **17**(18): 6771.

449 Rose G. Sick individuals and sick populations. *Int J Epidemiol* 1985; **14**(1): 32–8.

450 Yip PSF. A public health approach to suicide prevention. *Hong Kong J Psychiatry* 2005; **15**(1).

451 Steeg S, Carr MJ, Mok PLH, et al. Temporal trends in incidence of hospital-treated self-harm among adolescents in Denmark: national register-based study. *Soc Psychiatry Psychiatr Epidemiol* 2020; **55**(4): 415–21.

452 Gunnell D, Appleby L, Arensman E, et al. Suicide risk and prevention during the COVID-19 pandemic. *Lancet Psychiatry* 2020; **7**(6): 468–71.

453 Pirkis J, Gunnell D, Shin S, et al. Suicide numbers during the first 9-15 months of the COVID-19 pandemic compared with pre-existing trends: An interrupted time series analysis in 33 countries. *EClinicalMedicine* 2022; **51**: 101573.

454 Steeg S, John A, Gunnell D, et al. The impact of the COVID-19 pandemic on health service utilisation following self-harm: a systematic review. *Br J Psychiatry* 2022; **221**(4): 603–12.

455 Lee S, Kim C-J, Kim DH. A meta-analysis of the effect of school-based anti-bullying programs. *J Child Health Care* 2015; **19**(2): 136–53.

456 Wasserman D, Hoven CW, Wasserman C, et al. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *Lancet* 2015; **385**(9977): 1536–44.

457 Quarshie EN-B, Waterman MG, House AO. Adolescent self-harm in Ghana: a qualitative interview-based study of first-hand accounts. *BMC Psychiatry* 2020; **20**(1): 275.

458 Adinkrah M. Anti-suicide laws in nine African countries: criminalization, prosecution and penalization. *Afr J Criminol Justice Stud* 2016; **9**(1): 279–92.

459 Mishara BL, Weisstub DN. The legal status of suicide: a global review. *Int J Law Psychiatry* 2016; **44**: 54–74.

460 MacDonald S, Sampson C, Turley R, et al. Patients' experiences of emergency hospital care following self-harm: systematic review and thematic synthesis of qualitative research. *Qual Health Res* 2020; **30**(3): 471–85.

461 Anonymous. Mentally unwell or criminal? My experience of being criminalised for my mental health. *Recovery In The Bin*, Aug 19, 2020. https://recoveryinthebin.org/2020/08/19/mentally-unwell-or-criminal/ (accessed Apr 2, 2023).

462 Thomson A, Eales S, McAllister E, Molodynski A. CriSiS-SR: criminal sanctions for self-harm or suicidality - scoping review. 2022. https://osf.io/ytqxm (accessed Apr 2, 2023).

463 Anonymous. Commentary: "I've lost count of the times my door has been broken by the police". *BMJ* 2017; **356**: j1165.

464 Thomson AB, Eales S, McAllister E, Molodynski A. Criminal sanctions for suicidality in the 21st century UK. *Br J Psychiatry* 2022; **221**(5): 653–4.

465 StopSIM Coalition. Category archives: coalition statements: findings from the Freedom of Information Request to Hampshire Constabulary. StopSIM Coalition, 2022. https://stopsim.co.uk/category/coalition-statements/ (accessed Apr 2, 2023).

466 Chu C, Buchman-Schmitt JM, Stanley IH, et al. The interpersonal theory of suicide: a systematic review and meta-analysis of a decade of cross-national research. *Psychol Bull* 2017; **143**(12): 1313–45.

467 Hamza CA, Stewart SL, Willoughby T. Examining the link between nonsuicidal self-injury and suicidal behavior: a review of the literature and an integrated model. *Clin Psychol Rev* 2012; **32**(6): 482–95.

468 World Health Organization. Preventing suicide: a global imperative. World Health Organization, 2014. https://www.who.int/publications/i/item/9789241564779 (accessed Apr 2, 2023).

469 Berman AL. Estimating the population of survivors of suicide: seeking an evidence base. *Suicide Life Threat Behav* 2011; **41**(1): 110–6.

470 Cerel J, Brown MM, Maple M, et al. How many people are exposed to suicide? Not six. *Suicide Life Threat Behav* 2019; **49**(2): 529–34.

471 World Health Organization. LIVE LIFE: an implementation guide for suicide prevention in countries. Geneva, Switzerland: World Health Organization, 2021.

472 Manuweera G, Eddleston M, Egodage S, Buckley NA. Do targeted bans of insecticides to prevent deaths from self-poisoning result in reduced agricultural output? *Environ Health Perspect* 2008; **116**(4): 492–5.

473 Decker MR, Wilcox HC, Holliday CN, Webster DW. An integrated public health approach to interpersonal violence and suicide prevention and response. *Public Health Rep* 2018; **133**(1_suppl): 65S–79S.

474 Roberts T, Miguel Esponda G, Torre C, Pillai P, Cohen A, Burgess RA. Reconceptualising the treatment gap for common mental disorders: a fork in the road for global mental health? *Br J Psychiatry* 2022; **221**(3): 553–7.

475 Asare-Doku W, Osafo J, Akotia CS. Comparing the reasons for suicide from attempt survivors and their families in Ghana. *BMC Public Health* 2019; **19**(1): 412.

476 Asare-Doku W, Osafo J, Akotia CS. The experiences of attempt survivor families and how they cope after a suicide attempt in Ghana: a qualitative study. *BMC Psychiatry* 2017; **17**(1): 178.

477 Farrelly T. The Aboriginal suicide and self-harm help-seeking quandary. *Aborig Isl Health Work* 2008; **32**(1): 11–5.

478 Chandler MJ, Dunlop WL. Cultural wounds require cultural medicines. In: Greenwood M, de Leeuw S, Lindsay NM, Reading C, eds. Determinants of Indigenous peoples' health in Canada: beyond the social. 2nd ed. Toronto, Canada: Canada Scholars' Press, 2015: 147–60.

479 Inuit Tapiriit Kanatami. National Inuit suicide prevention strategy. Inuit Tapiriit Kanatami, 2016. https://www.itk.ca/national-inuit-suicide-prevention-strategy/ (accessed Apr 2, 2023).

480 Sámi Norwegian National Advisory Unit on Mental Health and Substance Abuse, Saami Council. Plan for suicide prevention among Sami people in Norway, Sweden, and Finland. Sámi Norwegian National Advisory Unit on Mental Health and Substance Abuse, 2017. https://static1.squarespace.com/static/5dfb35a66f00d54ab0729b75/t/5e1efe6a16e8b24815a570e6/1579089522996/Suicide_plan_EN.pdf (accessed Apr 2, 2023).

481 Chandler M, Lalonde C. Cultural continuity as a protective factor against suicide in First Nations youth. *Horizons: Special Issue on Aboriginal Youth, Hope or Heartbreak: Aboriginal Youth and Canada's Future* 2008; **10**(1): 68–72.

482 Eades S, Eades F, McCaullay D, Nelson L, Phelan P, Stanley F. Australia's First Nations' response to the COVID-19 pandemic. *Lancet* 2020; **396**(10246): 237–8.

483 Crawford A. Project CREATeS: youth engagement in suicide prevention. *Lancet* 2019; **394**(10205): 1222–3.

484 Wright M, Getta D, Green O, et al. Co-designing health service evaluation tools that foreground First Nation worldviews for better mental health and wellbeing outcomes. *Int J Environ Res Public Health* 2021; **18**(16): 8555.

485 Dudgeon P, Calma T, Milroy J, et al. Indigenous governance for suicide prevention in Aboriginal and Torres Strait Islander communities: a guide for primary health networks. Perth, Australia: University of Western Australia, 2018.

486 Gee G, Dudgeon P, Schultz C, Hart A, Kelly K. Aboriginal and Torres Strait Islander social and emotional wellbeing. In: Dudgeon P, Milroy H, Walker R, eds. Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice. 2nd ed. Canberra, Australia: Commonwealth of Australia, 2014: 55–68.

487 Mia T, Dudgeon P, Mascall C, Grogan G, Murray B, Walker R. An evaluation of the National Empowerment Project Cultural, Social, and Emotional Wellbeing Program. *J Indig Wellbeing* 2017; **2**(2): 3.

488 Appleby G, Davis M. The Uluru Statement and the promises of truth. *Aust Hist Stud* 2018; **49**(4): 501–9.

489 Sones R, Hopkins C, Manson S, Watson R, Durie M, Naquin V. The Wharerata Declaration – the development of indigenous leaders in mental health. *Int J Leadership Public Serv* 2010; **6**(1): 53–63.

490 Milroy H, Dudgeon P, Walker R. Community life and development programs – pathways to healing. In: Dudgeon P, Milroy H, Walker R, eds. Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice. 2nd ed. Canberra, Australia: Commonwealth of Australia, 2014: 419–36.

491 Wirhana R, Smith C. Historical trauma, healing and wellbeing in Māori communities. *MAI Journal* 2014; **3**(3): 197–210.

492 National Congress of American Indians. Tribal nations and the United States: an introduction. National Congress of American Indians, 2020. https://www.ncai.org/about-tribes (accessed Apr 2, 2023).

493 Stoor JPA, Eriksen HA, Silviken AC. Mapping suicide prevention initiatives targeting Indigenous Sámi in Nordic countries. *BMC Public Health* 2021; **21**(1): 2035.

494 Smith LT. Decolonizing methodologies: Research and Indigenous peoples. 3rd ed. London, United Kingdom: Zed Books, 2021.

495 Suicide Prevention Resource Center. Expanding suicide prevention to include upstream approaches. Suicide Prevention Resource Center, 2012. https://sprc.org/sites/default/files/migrate/library/Upstream_Youth_Suicide_Prevention_Expert_Panel_Meeting%20Summary.pdf (accessed Apr 2, 2023).

496 Wyman PA. Developmental approach to prevent adolescent suicides: research pathways to effective upstream preventive interventions. *Am J Prev Med* 2014; **47**(3 Suppl 2): S251–6.

497 National Aboriginal Health Strategy Working Party. A national Aboriginal health strategy. Canberra, Australia: Australian Government Department of Aboriginal Affairs, 1989.

498 The Aboriginal and Torres Strait Islander Healing Foundation Development Team. Voices from the campfires: establishing the Aboriginal and Torres Strait Islander Healing Foundation. Commonwealth of Australia, 2009. https://apo.org.au/node/19232 (accessed Apr 2, 2023).

499 Marsh TN, Coholic D, Cote-Meek S, Najavits LM. Blending Aboriginal and Western healing methods to treat intergenerational trauma with substance use disorder in Aboriginal peoples who live in northeastern Ontario, Canada. *Harm Reduct J* 2015; **12**: 14.

500 Bourke S, Wright A, Guthrie J, Russell L, Dunbar T, Lovett R. Evidence review of Indigenous culture for health and wellbeing. *Int J Health Well Soc* 2018; **8**(4): 11–27.

501 Colquhoun S, Dockery AM. The link between Indigenous culture and wellbeing: qualitative evidence for Australian Aboriginal peoples. The Centre for Labour Market Research, 2012. https://nla.gov.au/nla.obj-2496469627/view (accessed Apr 2, 2023).

502 Stoor JPA, San Sebastián M. Sametingets individuella analys för nationell strategi psykisk hälsa och suicidprevention. Umeå Universitet, 2021. https://www.sametinget.se/160565 (accessed Apr 2, 2023).

503 Simpson LB. A short history of the blockade: giant beavers, diplomacy, and regeneration. Edmonton, Canada: University of Alberta Press, 2021.

504 Gone JP. Redressing First Nations historical trauma: theorizing mechanisms for indigenous culture as mental health treatment. *Transcult Psychiatry* 2013; **50**(5): 683–706.

505 Usborne E, de la Sablonnière R. Understanding my culture means understanding myself: the function of cultural identity clarity for personal identity clarity and personal psychological well-being. *J Theory Soc Behav* 2014; **44**(4): 436–58.

506 Dockery AM. Inter-generational transmission of Indigenous culture and children's wellbeing: evidence from Australia. *Int J Intercult Relat* 2020; **74**: 80–93.

507 Johnson-Jennings M, Billiot S, Walters K. Returning to our roots: tribal health and wellness through land-based healing. *Genealogy* 2020; **4**(3): 91.

508 Pihama L, Smith LT, Evans-Campbell T, et al. Investigating Māori approaches to trauma informed care *J Indig Wellbeing* 2017; **2**(3): 2.

509 Thomas D, Mitchell T, Arseneau C. Re-evaluating resilience: from individual vulnerabilities to the strength of cultures and collectivities among indigenous communities. *Resilience* 2016; **4**(2): 116–29.

510 Burrin C, Daniels NF, Cardinal RN, Hayhurst C, Christmas D, Zimbron J. Iatrogenic complications of compulsory treatment in a patient presenting with an emotionally unstable personality disorder and self-harm. *Case Rep Psychiatry* 2021; **2021**: 6615723.

511 Harris J. Self-harm: cutting the bad out of me. *Qual Health Res* 2000; **10**(2): 164–73.

512 Jeffery R. Normal rubbish: deviant patients in casualty departments. *Sociol Health Illn* 1979; **1**(1): 90–107.

513 Harrison D. Understanding self-harm. MIND, 1994.

514 Strike C, Rhodes AE, Bergmans Y, Links P. Fragmented pathways to care: the experiences of suicidal men. *Crisis* 2006; **27**(1): 31–8.

515 Monteux S, Monteux A. Human encounters: The core of everyday care practice. *Int J Soc Pedagog* 2020; **9**(1): 15.

516 Boyle D, Harris M. The challenge of co-production: how equal partnerships between professionals and the public are crucial to improving public services. NESTA, 2009. https://www.nesta.org.uk/report/the-challenge-of-co-production/ (accessed Apr 2, 2023).

517 Lambert N, Carr S. 'Outside the original remit': Co-production in UK mental health research, lessons from the field. *Int J Ment Health Nurs* 2018; **27**(4): 1273–81.

518 Faulkner A, Carr S, Gould D, et al. 'Dignity and respect': An example of service user leadership and co-production in mental health research. *Health Expect* 2021; **24**(Suppl 1): 10–9.

519 Fortune S, Sinclair J, Hawton K. Adolescents' views on preventing self-harm. A large community study. *Soc Psychiatry Psychiatr Epidemiol* 2008; **43**(2): 96–104.

520 Cox G, Hetrick S. Psychosocial interventions for self-harm, suicidal ideation and suicide attempt in children and young people: what? How? Who? And where? *Evid Based Ment Health* 2017; **20**(2): 35–40.

521 Franits LE. Nothing about us without us: searching for the narrative of disability. *Am J Occup Ther* 2005; **59**(5): 577–9.

522 Braun M, Till B, Pirkis J, Niederkrotenthaler T. Effects of suicide prevention videos developed by and targeting adolescents: a randomized controlled trial. *Eur Child Adolesc Psychiatry* 2023; **32**(5): 847–57.

523 Thabrew H, Fleming T, Hetrick S, Merry S. Co-design of eHealth interventions with children and young people. *Front Psychiatry* 2018; **9**: 481.

524 Thorn P, Hill NTM, Lamblin M, et al. Developing a suicide prevention social media campaign with young people (The #Chatsafe Project): co-design approach. *JMIR Ment Health* 2020; **7**(5): e17520.

525 Black Dog Institute. What can be done to decrease suicidal behaviour in Australia? A call to action. Sydney, Australia: Black Dog Institute, 2020. https://www.blackdoginstitute.org.au/suicide-prevention-white-paper/ (accessed Apr 2, 2023).

526 Shand F, Woodward A, McGill K, et al. Suicide aftercare services: an Evidence Check rapid review brokered by the Sax Institute for the NSW Ministry of Health. 2019. https://www.saxinstitute.org.au/publications/evidence-check-library/suicide-aftercare-services/ (accessed Apr 2, 2023).

527 Carbonell Á, Navarro-Pérez J-J, Mestre M-V. Challenges and barriers in mental healthcare systems and their impact on the family: a systematic integrative review. *Health Soc Care Community* 2020; **28**(5): 1366–79.

528 McKay K, Shand F. Advocacy and luck: Australian healthcare experiences following a suicide attempt. *Death Stud* 2018; **42**(6): 392–9.

529 Kapur N, Steeg S, Webb R, et al. Does clinical management improve outcomes following self-harm? Results from the multicentre study of self-harm in England. *PLoS One* 2013; **8**(8): e70434.

530 Aggarwal S, Patton G, Berk M, Patel V. Psychosocial interventions for self-harm in low-income and middle-income countries: systematic review and theory of change. *Soc Psychiatry Psychiatr Epidemiol* 2021; **56**(10): 1729–50.

531 Niederkrotenthaler T, Braun M, Pirkis J, et al. Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 2020; **368**: m575.

532 Vijayakumar L, Shastri M, Fernandes TN, et al. Application of a scorecard tool for assessing and engaging media on responsible reporting of suicide-related news in India. *Int J Environ Res Public Health* 2021; **18**(12): 6206.

533 Cheng Q, Lui C, Ip FWL, Yip PSF. Typology and impact of YouTube videos posted in response to a student suicide crisis: social media metrics and content analyses. *JMIR Ment Health* 2021; **8**(6): e15551.

534 Niederkrotenthaler T, Tran US, Gould M, et al. Association of Logic's hip hop song "1-800-273-8255" with Lifeline calls and suicides in the United States: interrupted time series analysis. *BMJ* 2021; **375**: e067726.

535 Sinyor M, Williams M, Zaheer R, et al. The association between Twitter content and suicide. *Aust N Z J Psychiatry* 2021; **55**(3): 268–76.

536 Till B, Arendt F, Scherr S, Niederkrotenthaler T. Effect of educative suicide prevention news articles featuring experts with vs without personal experience of suicidal ideation: a randomized controlled trial of the Papageno effect. *J Clin Psychiatry* 2018; **80**(1): 17m11975.

537 Khasawneh A, Madathil KC, Dixon E, Wiśniewski P, Zinzow H, Roth R. Examining the self-harm and suicide contagion effects of the Blue Whale Challenge on YouTube and Twitter: qualitative study. *JMIR Ment Health* 2020; **7**(6): e15973.

538 Lewis SP, Heath NL, Michal NJ, Duggan JM. Non-suicidal self-injury, youth, and the Internet: what mental health professionals need to know. *Child Adolesc Psychiatry Ment Health* 2012; **6**(1): 13.

539 Niederkrotenthaler T, Till B. Effects of suicide awareness materials on individuals with recent suicidal ideation or attempt: online randomised controlled trial. *Br J Psychiatry* 2020; **217**(6): 693–700.

Niederkrotenthaler T, Till B, Kirchner S, et al. Effects of media stories of hope and recovery on suicidal ideation and help-seeking attitudes and intentions: systematic review and meta-analysis. *Lancet Public Health* 2022; **7**(2): e156–68.

Pirkis J, Burgess P, Francis C, Blood RW, Jolley D. The relationship between media reporting of suicide and actual suicide in Australia. *Soc Sci Med* 2006; **62**(11): 2874–86.

Sinyor M, Schaffer A, Nishikawa Y, et al. The association between suicide deaths and putatively harmful and protective factors in media reports. *CMAJ* 2018; **190**(30): E900–7.

King K, Schlichthorst M, Turnure J, Phelps A, Spittal MJ, Pirkis J. Evaluating the effectiveness of a website about masculinity and suicide to prompt help-seeking. *Health Promot J Austr* 2019; **30**(3): 381–9.

Woods A, Hart A, Spandler H. The recovery narrative: politics and possibilities of a genre. *Cult Med Psychiatry* 2022; **46**(2): 221–247.

Make Space, National Survivor User Network, Self injury Support. Open letter on self-harm and the Online Safety Bill: a call for caution, nuance, and care. National Survivor User Network, 2023. https://www.nsun.org.uk/news/open-letter-on-self-harm-and-the-online-safety-bill-make-space-and-self-injury-support/ (accessed Apr 29, 2023).

Marchant A, Hawton K, Burns L, Stewart A, John A. Impact of web-based sharing and viewing of self-harm-related videos and photographs on young people: systematic review. *J Med Internet Res* 2021; **23**(3): e18048.

World Health Organization, International Association for Suicide Prevention. Preventing suicide: a resource for media professionals, 2017 update. World Health Organization, 2017. https://apps.who.int/iris/handle/10665/258814 (accessed Apr 2, 2023).

Bellairs-Walsh I, Perry Y, Krysinska K, et al. Best practice when working with suicidal behaviour and self-harm in primary care: a qualitative exploration of young people's perspectives. *BMJ Open* 2020; **10**(10): e038855.

Robinson J, Hill NTM, Thorn P, et al. The #chatsafe project. Developing guidelines to help young people communicate safely about suicide on social media: a Delphi study. *PLoS One* 2018; **13**(11): e0206584.

Mo PKH, Ko TT, Xin MQ. School-based gatekeeper training programmes in enhancing gatekeepers' cognitions and behaviours for adolescent suicide prevention: a systematic review. *Child Adolesc Psychiatry Ment Health* 2018; **12**: 29.

Torok M, Calear AL, Smart A, Nicolopoulos A, Wong Q. Preventing adolescent suicide: a systematic review of the effectiveness and change mechanisms of suicide prevention gatekeeping training programs for teachers and parents. *J Adolesc* 2019; **73**(1): 100–12.

Bailey E, Spittal MJ, Pirkis J, Gould M, Robinson J. Universal suicide prevention in young people. *Crisis* 2017; **38**(5): 300–8.

Montague AE, Varcin KJ, Simmons MB, Parker AG. Putting technology into youth mental health practice. *SAGE Open* 2015; **5**(2).

Dodemaide P, Joubert L, Merolli M, Hill N. Exploring the therapeutic and nontherapeutic affordances of social media use by young adults with lived experience of self-harm or suicidal ideation: A scoping review. *Cyberpsychol Behav Soc Netw* 2019; **22**(10): 622–33.

555 Turnbull T. Sextortion case: two arrested in Nigeria after Australian boy's suicide. *BBC News*, Apr 8, 2024. https://www.bbc.co.uk/news/world-australia-68720247/ (accessed Apr 26, 2024).

556 Anonymous. Molly Russell: social media users 'at risk' over self-harm inquest delay. *BBC News*, Feb 8, 2021. https://www.bbc.co.uk/news/uk-england-london-55986728/ (accessed Apr 26, 2024).

557 Ofcom. Children and parents: media use and attitudes report 2020/21. Ofcom, 2021. https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217825/children-and-parents-media-use-and-attitudes-report-2020-21.pdf (accessed Apr 26, 2024).

558 *Online Safety Act 2023* (UK) c 50. https://bills.parliament.uk/bills/3137 (accessed Apr 26, 2024).

559 Susi K, Glover-Ford F, Stewart A, Knowles Bevis R, Hawton K. Research review: viewing self-harm images on the internet and social media platforms: systematic review of the impact and associated psychological mechanisms. *J Child Psychol Psychiatry* 2023; **64**(8): 1115–39.

560 Valkenburg PM, Meier A, Beyens I. Social media use and its impact on adolescent mental health: an umbrella review of the evidence. *Curr Opin Psychol* 2022; **44**: 58–68.

561 Sanders T, Noetel M, Parker P, et al. An umbrella review of the benefits and risks associated with youths' interactions with electronic screens. *Nat Hum Behav* 2024; **8**(1): 82–99.

562 Haidt J. The anxious generation: how the great rewiring of childhood is causing an epidemic of mental illness. New York, United States: Penguin Press, 2024.

563 Etchells P. Unclocked: the real science of screen time (and how to spend it better). London, United Kingdom: Piatkus, 2024.

564 Levitz E. What the evidence really says about social media's impact on teens' mental health: did smartphones actually "destroy" a generation? *Vox*, Apr 12, 2024. https://www.vox.com/24127431/smartphones-young-kids-children-parenting-social-media-teen-mental-health/ (accessed Apr 26, 2024).

565 Orben A, Przybylski AK. The association between adolescent well-being and digital technology use. *Nat Hum Behav* 2019; **3**(2): 173–82.

566 Orben A, Przybylski AK. Reply to: underestimating digital media harm. *Nat Hum Behav* 2020; **4**(4): 349–51.

567 Twenge JM, Haidt J, Joiner TE, Campbell WK. Underestimating digital media harm. *Nat Hum Behav* 2020; **4**(4): 346–8.

568 Tang S, Werner-Seidler A, Torok M, Mackinnon AJ, Christensen H. The relationship between screen time and mental health in young people: a systematic review of longitudinal studies. *Clin Psychol Rev* 2021; **86**: 102021.

569 Stade EC, Wiltsey Stirman S, Ungar LH, et al. Large language models could change the future of behavioral healthcare: a proposal for responsible development and evaluation. *Npj Ment Health Res* 2024; **3**(1): 12.

570 Xu X, Yao B, Dong Y, et al. Mental-LLM: leveraging large language models for mental health prediction via online text data. *Proc ACM Interact Mob Wearable Ubiquitous Technol* **8**(1): 31.

571 The U.S. Surgeon General's Advisory. Social media and youth mental health. Office of the Surgeon General, 2023. https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf (accessed Apr 26, 2023).

572 Coleman C. Social media: potential harm to children. UK Parliament House of Lords, 2022. https://lordslibrary.parliament.uk/social-media-potential-harm-to-children/ (accessed Apr 26, 2024).

573 Fleischmann A, Bertolote JM, Wasserman D, et al. Effectiveness of brief intervention and contact for suicide attempters: a randomized controlled trial in five countries. *Bull World Health Organ* 2008; **86**(9): 703–9.

574 Wei S, Liu L, Bi B, et al. An intervention and follow-up study following a suicide attempt in the emergency departments of four general hospitals in Shenyang, China. *Crisis* 2013; **34**(2): 107–15.

575 Vijayakumar L, Armstrong G. Surveillance for self-harm: an urgent need in low-income and middle-income countries. *Lancet Psychiatry* 2019; **6**(8): 633–4.

576 Hajebi A, Ahmadzad-Asl M, Ershadi M, Nikfarjam A, Davoudi F. National registration system of suicide behaviors in Iran: barriers and challenges. *Arch Suicide Res* 2013; **17**(4): 416–25.

577 Osafo J, Akotia CS, Andoh-Arthur J, Quarshie EN-B. Attempted suicide in Ghana: motivation, stigma, and coping. *Death Stud* 2015; **39**(1–5): 274–80.

578 Abimbola S. The foreign gaze: authorship in academic global health. *BMJ Glob Health* 2019; **4**(5): e002068.

579 Gautier L, Sieleunou I, Kalolo A. Deconstructing the notion of "global health research partnerships" across Northern and African contexts. *BMC Med Ethics* 2018; **19**: 49.