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

[*] *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.*

for self-harm remains highly variable and is often inaccessible. Unfortunately, in many settings, there 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]

[†] *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.*

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 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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