

The Lancet Commission on self-harm



Paul Moran*, Amy Chandler†, Pat Dudgeon‡, Olivia J Kirtley§, Duleeka Knipe¶, Jane Pirkis||, Mark Sinyor||, Rosie Allister, Jeffrey Ansoos, Melanie A Ball, Lai Fong Chan, Leilani Darwin, Kate L Derry, Keith Hawton, Veronica Heney, Sarah Hetrick, Ang Li, Daiane B Machado, Emma McAllister, David McDaid, Ishita Mehra, Thomas Niederkrotenthaler, Matthew K Nock, Victoria M O'Keefe, Maria A Oquendo, Joseph Osafo, Vikram Patel, Soumitra Pathare, Shanna Peltier, Tessa Roberts, Jo Robinson, Fiona Shand, Fiona Stirling, Jon P A Stoor, Natasha Swingler, Gustavo Turecki, Svetha Venkatesh, Waikaremoana Waitoki, Michael Wright, Paul S F Yip, Michael J Spoelma, Navneet Kapur*, Rory C O'Connor*, Helen Christensen*

Executive summary

By delivering transformative shifts in societal attitudes and initiating a radical redesign 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 the last five years. It consolidates evidence and knowledge derived from empirical research and the lived experience of self-harm. Self-harm refers to intentional self-poisoning or injury, irrespective of apparent purpose, 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—however, in some settings, distinctions are not this clear cut. Self-harm is a behaviour, not a psychiatric diagnosis, 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 overlooked the perspectives of people living in low-income 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 global policy arena and improving the treatment of people who self-harm internationally.

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 estimate is likely to be a considerable underestimate, because most people who self-harm 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 within a 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 most common method of self-harm in LMICs) has a high case fatality rate.

For people who self-harm, 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 potentially important roles in driving the behaviour. Numerous psychological and social factors are associated with self-harm and the social determinants of health—poverty, in particular, heavily influences the distribution of self-harm within all communities. Yet we know little about how individual-level factors interact with social context to drive self-harm, or whether 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, could help to shed light on the nature and timing of self-harm.

Psychological treatments can help some people who self-harm, but service users and practitioners often differ in their opinions of what constitutes effective treatment. Furthermore, treatment provision for self-harm remains highly variable and is often inaccessible, particularly within LMICs and to Indigenous peoples. 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 can 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 (panel 1).

We already know that tackling societal drivers such as poverty, social isolation, and access to means of suicide 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 must stop internationally, and government approaches should address the conditions that make self-harm more likely. For Indigenous peoples, effective self-harm prevention strategies should prioritise

Lancet 2024; 404: 1445–92

Published Online
October 9, 2024
[https://doi.org/10.1016/S0140-6736\(24\)01121-8](https://doi.org/10.1016/S0140-6736(24)01121-8)

See [Comment](#) page 1381

See [Perspectives](#) pages 1393, 1394, and 1395

*Executive Group

†Lead commissioner for lived experience

‡Lead commissioner for Indigenous perspectives

§Lead commissioner for individual perspectives

¶Lead commissioner for LMICs

||Joint lead commissioners for societal perspectives

Centre for Academic Mental Health, Population Health Sciences Department, Bristol Medical School, University of Bristol, Bristol, UK
(Prof P Moran MD, D Knipe PhD);

NIHR Biomedical Research Centre at the University Hospitals Bristol NHS

Foundation Trust, Bristol, UK
(Prof P Moran); School of Health in Social Science

(Prof A Chandler PhD) and Business School (R Allister PhD), University of Edinburgh, Edinburgh, UK; Poche Centre

for Indigenous Health, School of Indigenous Studies, University of Western

Australia, Perth, WA, Australia
(Prof P Dudgeon PhD,

K L Derry PhD); Center for Contextual Psychiatry, KU

Leuven, Leuven, Belgium
(O J Kirtley PhD); Melbourne

School of Population and Global Health (Prof J Pirkis PhD) and Centre for Youth Mental

Health (Prof J Robinson PhD), The University of Melbourne, Melbourne, VIC, Australia;

Department of Psychiatry (M Sinyor MD) and Ontario Institute for Studies in

Education (J Ansoos PhD, S Peltier MA), University of Toronto, Toronto, ON, Canada; Department of Psychiatry, Sunnybrook Health Sciences

Panel 1: Key recommendations of the Lancet Commission on self-harm

Recommendations for governments

- In all countries, a whole-of-government approach should address the upstream conditions that promote self-harm. This approach should build on existing national strategies aimed narrowly at mental health and suicide to acknowledge that many other societal efforts are needed to reduce self-harm. Tackling poverty, means restriction, and the societal drivers of misery can reduce suicide rates—this evidence can usefully inform government policy in relation to self-harm.
- The punishment of people who self-harm around the world must stop; this effort must also include the decriminalisation of self-harm.
- There is an urgent need to prioritise the prevention and management of self-harm in LMICs. The banning of pesticides will lead to a reduction of pesticide-related fatal self-harm. Interventions for self-harm need to be tailored to local and cultural contexts.
- For Indigenous peoples, effective self-harm prevention strategies should prioritise self-determination and building healthy societies, thus empowering thriving cultures. Indigenous peoples should control their health services and design culturally appropriate prevention and intervention strategies. Interventions should include access to cultural healers, Elders, and Indigenous cultural activities.

Recommendations for the delivery of services

- People with lived experience of self-harm should be robustly supported to lead and participate in the design, delivery, leadership, and evaluation of care. Considering the rising rates of self-harm among young people, they should be particularly involved in the codesign of interventions.
- Better integration of services and adequate staffing capacity is needed to ensure that individuals who repeatedly self-harm receive the help they need.
- Health and social-care professionals should be trained in the compassionate assessment and management of self-harm. Ongoing supervision, staff support, and the direct involvement of people with lived experience (particularly from previously marginalised groups) should be key principles underpinning service delivery.

Recommendations for the media and wider society

- 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 conveyed by people with lived experience. Other narratives which could have positive effects should also be carefully considered, ensuring that discussions do not lead to harm.
- The online media industry must take greater responsibility for the online safety of their users, particularly young people and other vulnerable users.

Recommendations for researchers and research funders

- International research funding should be directed towards LMICs, with priority given to areas where the burden is greatest.
- Robust and anonymised self-harm surveillance systems should be set up in all countries, to monitor trends in self-harm across the world.
- Mixed methods biopsychosocial research applying social ecological approaches to understanding self-harm should be prioritised.

LMICs=low-income and middle income countries.

Centre, Toronto, ON, Canada
(M Sinyor); Midlands
Partnership University NHS
Foundation Trust, Stafford, UK
(M A Ball MST); Department of
Psychiatry, Faculty of Medicine,
National University of
Malaysia, Kuala Lumpur,

self-determination and the building of healthy societies, thus empowering cultures to thrive. Indigenous peoples should have greater control over their health and social care services and design culturally appropriate prevention and intervention strategies. In LMICs, reducing access to means of self-harm could be particularly important, as

could an emphasis on self-harm surveillance, and a redistribution 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 at-risk users. Discussions 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 of self-harm. 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 recommendations that have emerged from this Commission are ambitious, but we believe that they can be achieved with targeted advocacy and the strategic deployment of resources. Success will require ongoing efforts 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, but not limited to, overdoses of medication, ingestion of harmful substances, cutting, burning, or punching. Self-harm is a behaviour, not a psychiatric diagnosis, and is a complex phenomenon 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 the 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 the scope of this Commission. Body modification or self-inflicted mutilation, whether performed for cultural, religious, or social reasons, challenges conventional representations of self-harm. Although these practices might 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 the restrictive eating behaviour seen in anorexia nervosa is 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 decision is because anorexia nervosa is aetiologically distinct from self-harm and requires a different treatment approach to that offered for self-harm.

Self-harm with a fatal outcome (ie, suicide) has received considerable clinical and policy attention, while self-harm more generally has been neglected. Although for many, an episode of self-harm might 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 could later die by suicide without intervention. In LMICs, because of the high lethality of methods people use to harm themselves, even those with apparently no, or low suicidal intent, might end up dying by suicide. However, given the complex relationship between self-harm and suicide, we have still referred to suicide as fatal self-harm in places where it is crucial, as we do not wish to ignore this relationship's existence.

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 (so-called suicide attempts), and those who have self-harmed with no suicidal intent (non-suicidal self-injury [NSSI]).³ Indeed, non-suicidal self-injury disorder was included in the fifth version of the Diagnostic and Statistical 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” 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 can evolve into self-poisoning, and vice versa. Those who advocate for NSSI suggest that it could 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 NSSI are overlapping constructs.⁴ Opponents of the NSSI construct suggest any distinction

is arbitrary, that it could at best have limited clinical use, and at worst might be actively harmful because people who are considered non-suicidal could end up being excluded from busy clinical services.

There is no consensus on the optimal approach to how we conceptualise self-harm. 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. 50 years ago, WHO categorised suicidal behaviour theorists into groups including 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

Self-harm is not a new phenomenon and accounts of self-harm can be traced back to antiquity.⁶ But only more recently has self-harm become a major concern for health-care professionals as something which needs to be prevented, managed, and treated.⁷ Self-harm accounts 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. Although its onset is often in adolescence,¹⁰ and it is most common in this group,⁸ self-harm can occur at any age—however, 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} but 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 cultures that are dominant in high-income countries (HICs), and this can lead to very different interpretations about the meaning, causes, and significance of self-harm. It is crucial to appreciate the cultural differences that shape self-harm because the behaviour shines a light on the effect 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 substantially 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 might be a precursor to suicide. Evidently, self-harm is about both living and dying.²²

Malaysia (Prof L F Chan MD); First Nations Co, Melbourne, VIC, Australia (L Darwin DipCouns); Centre for Suicide Research, Department of Psychiatry, University of Oxford, Oxford, UK (Prof K Hawton DSc); Institute for Medical Humanities, Durham University, Durham, UK (V Heney PhD); Department of Psychological Medicine, University of Auckland, Auckland, New Zealand (S Hetrick DPsych); Department of Psychology, Beijing Forestry University, Beijing, China (A Li PhD); Centre of Data and Knowledge Integration for Health (CIDACS), Gonçalo Moniz Institute, Oswaldo Cruz Foundation, Salvador, Brazil (D B Machado PhD); Department of Global Health and Social Medicine (D B Machado, Prof V Patel PhD) and Department of Psychology (Prof M K Nock PhD), Harvard University, Boston, MA, USA; Edinburgh, UK (E McAllister PhD); Care Policy and Evaluation Centre, London School of Economics and Political Science, London, UK (D McDaid MSc); New Delhi, India (I Mehra); Department of Social and Preventive Medicine, Center for Public Health, Medical University of Vienna, Vienna, Austria (Prof T Niederkerrothaler DrMedUniv); Center for Indigenous Health, Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA (V M O'Keefe PhD); Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, United States (Prof M A Oquendo MD); Department of Psychology, University of Ghana, Accra, Ghana (Prof J Osafo PhD); Centre for Mental Health Law & Policy, Indian Law Society, Pune, India (S Pathare PhD); Unit for Social and Community Psychiatry, Centre for Psychiatry & Mental Health, Wolfson Institute of Population Health, Faculty of Medicine and Dentistry, Queen Mary University of London, London, United Kingdom (T Roberts PhD); Orygen, Melbourne, VIC, Australia (Prof J Robinson, N Swingler VCE); Black Dog Institute, Sydney, NSW, Australia (F Shand PhD).

M J Spoelma BPsych, Prof H Christensen PhD); Faculty of Medicine and Health, University of New South Wales, Sydney, NSW, Australia (F Shand, M J Spoelma, Prof H Christensen); School of Health and Social Sciences, Abertay University, Dundee, UK (F Stirling MSc); Department of Epidemiology and Global Health, Umeå University, Umeå, Sweden (J P A Stoor PhD); Department of Community Medicine, UiT The Arctic University of Norway, Tromsø, Norway (J P A Stoor); Royal Children's Hospital, Melbourne, VIC, Australia (N Swingler); Department of Psychiatry, McGill University, Montreal, QC, Canada (Prof G Turecki MD); Applied Artificial Intelligence Institute, Deakin University, Geelong, VIC, Australia (Prof S Venkatesh PhD); Faculty of Māori and Indigenous Studies, The University of Waikato, Hamilton, New Zealand (W Waitoki PhD); School of Allied Health, Curtin University, Perth, WA, Australia (M Wright PhD); Hong Kong Jockey Club Centre for Suicide Research and Prevention and Department of Social Work and Social Administration, University of Hong Kong, Hong Kong Special Administrative Region, China (Prof P S F Yip PhD); Centre for Mental Health and Safety and National Institute for Health Research Greater Manchester Patient Safety Research Collaboration, Manchester Academic Health Sciences Centre, The University of Manchester, Manchester, UK (Prof N Kapur MD); Mersey Care NHS Foundation Trust, Prescott, UK (Prof N Kapur); Suicidal Behaviour Research Lab, School of Health & Wellbeing, University of Glasgow, Glasgow, UK (Prof R C O'Connor PhD)

Correspondence to Professor Paul Moran, Centre for Academic Mental Health, Population Health Sciences Department, Bristol Medical School, University of Bristol, Bristol BS8 2BN, UK
paul.moran@bristol.ac.uk

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: to review and synthesise the literature on our current understanding about self-harm by updating mainstream scientific thinking about self-harm with new evidence on individual and societal factors and, for the first time, combining this knowledge with previously neglected perspectives (individuals with lived experience, those from LMICs, and those from Indigenous communities); to identify key gaps in our understanding of self-harm and, by doing so, identify outstanding scientific opportunities for the field; and 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 the last five years. At the outset, an Executive Group for the Commission was formed (PM, HC, NK, and RCO), and this group provided overall leadership for the Commission and defined the structure of the final piece. With support from *The Lancet*, the Executive Group 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 previous systematic reviews, or a textbook-style distillation of facts about self-harm. To achieve this aim, we invited Commissioners from Indigenous cultures and from LMIC countries, as well as Commissioners with knowledge of the societal and cultural traditions of HICs. Highlighting the views of people from LMICs was deemed essential for promoting equity, cultural relevance, and community engagement 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 an absence of representation and influence in policy making. We also invited Commissioners with lived experience of self-harm, 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 an equal voice by structuring discussions within smaller, team-led specialist groups as well as full-team online and face-to-face events, and by circulating multiple iterations of draft sections for review and comment.

Working groups

The Executive Group convened four working groups (lived experience, Indigenous populations, LMICs, and individual and societal influences) who were asked to

summarise the current state of knowledge related to self-harm, identify key gaps in knowledge, and to formulate key recommendations for action.

Commissioners

Our primary objective was to convene a team of Commissioners who were leading academics, clinicians, and lived experience experts, with a balance of representation from both HICs and LMICs, 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, OJK, 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”; and “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 crucial, 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 is considered to be as legitimate as scientific methods in HICs.

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 were attended by representatives from the team at *The Lancet*, on Dec 19, 2019, March 19, 2020, and June 23, 2020. Each working group produced a single document, summarising the literature, their perspectives on new ideas, and recommendations for action (panel 2). 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 Lancet* and 35 Commissioners) on Nov 9–10, 2022. At that meeting, agreements and differences were reviewed around the main themes, together with gaps identified by the working groups in the 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, Commissioners from African countries were under-represented. The Indigenous groups represented by the Commissioners were primarily from countries with a history of colonisation, and marginalised groups with a high risk of self-harm, such as prisoners and refugee populations, were not represented in the team of Commissioners. Our synthesis of literature was restricted to papers written in English, with most of the papers being derived from HIC countries (reflecting 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 and that there is still much to learn about the distribution and nature of self-harm in LMICs and Indigenous communities.

Presentation of key findings

The structure of this Commission follows the aims described previously (figure 1). 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.

Inevitably, with such a diverse and multidisciplinary group, we did not agree on everything. Our aim was not to integrate all the different views into a singular voice. Some tensions that exist in relation to the conceptualisation of self-harm defy integration and easy resolution, such as whether we should include relevant literature on fatal self-harm (ie, suicide). When considering the lived experience of self-harm, especially across different global settings, the line between fatal and non-fatal self-harm, including how we conceptualise its intent and function, is indistinct and difficult to parse out. For this reason, where appropriate, we have judiciously retained the term fatal self-harm and distinguished this clearly from non-fatal self-harm. The other area where we had 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 and responsibility for clinical services. However, for some lived experience contributors, self-harm was

Panel 2: Reflective panel on the Commission process

Individual and public health

We reviewed the literature on risk factors, treatment, prevention, and management of self-harm. We also drew on the past experience of our author group, who are actively studying self-harm and devising and implementing self-harm interventions. Given the societal focus, our aim was to identify a selection of foundational, evidence-based principles for self-harm prevention at a population level that a broad range of stakeholders can readily translate into meaningful action. For the individual approaches section, we aimed to focus on the individual in context and to propose a multifaceted array of ways to advance our understanding of and ability to respond to self-harm.

Lived experience

All coauthors have different lived—and living—experience of self-harm. Some have a long history of engaging in practices that are called self-harm, others have known and cared for those who self-harm (or have done previously), and many live in and with communities marked by a range of self-harmful practices, including those understood as suicidal. Together we drew on our experiences, research, and practice-based knowledge to provide insights into the lived experience of self-harm, to highlight ongoing injustices, and to set out potential actions in response. Our aim was to elevate and empower individuals with lived experiences of self-harm, as we acknowledge our own lived experiences are partial in their representation of gender, race, and socioeconomic status.

Indigenous

Across the globe, there are many Indigenous nations, languages, and cultures, and it is difficult to identify terminology that is appropriate and acceptable to all these groups. We have chosen to use the term Indigenous peoples to refer to the global grouping of Indigenous nations and use a plural to show that there is no single Indigenous culture or group, but numerous groups, languages, tribes, and ways of living, even within each country. When discussing separate countries, we respect the terms preferred by most Indigenous peoples within that country; for example, we use Māori peoples for Indigenous peoples of Aotearoa or 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 USA; 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. The Indigenous authors are custodians of their respective knowledge systems and are respected within their communities and the academic institutions of their nations. The authors are therefore appropriate advocates in the context of Indigenous self-harm and suicide prevention in Aotearoa (New Zealand), Australia, Canada, Sweden, and the USA.

Low-income and middle-income countries (LMICs)

The LMIC authors are all authors who have actively engaged in research related to self-harm in LMICs and who have lived in these countries. We have used our experiences and expertise to showcase the challenges and opportunities for self-harm prevention. Our aim was to highlight the considerable gaps in our understanding in terms of self-harm prevention, and how structural barriers are hindering progress in this area in LMICs. The LMIC authors present knowledge and experiences from six LMICs (India, China, Brazil, Malaysia, Ghana, and Sri Lanka), which represents where approximately 50% of LMIC populations live.

viewed as a positive coping strategy or even a core part their identity, not something to be treated away. In addition, although recognising that clinical services can be important sources of support for those who self-harm

1	2	3	4
<p>Problem Self-harm is prevalent, causes distress globally, and is poorly understood</p> <p>A new approach using diverse perspectives is needed to determine how this can change</p>	<p>Approach Four perspectives were sought:</p> <ul style="list-style-type: none"> • Lived experience • LMICs • Indigenous peoples • Individual and societal perspectives <p>A synthesis brought together scientific evidence and broader cultural and lived experience knowledge</p>	<p>Discovery</p> <p>Section 1 What is already known</p> <p>Section 2 New ways of thinking about self-harm</p> <p>Section 3 New areas of responding to self-harm</p>	<p>Key areas for action 12 recommendations targeted at:</p> <ul style="list-style-type: none"> • Governments • Service delivery • Media and wider society • Researchers and funders

Figure 1: Flowchart outlining the processes underlying the Lancet Commission on self-harm
(1) The summary panel outlines the problem, (2) the broad approach we took to understand this problem and our methods, (3) our findings, (4) and the people and organisations required to address our recommendations.
LMICs=low-income and middle-income countries.

(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 can encounter judgemental attitudes from health-care providers which could 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 can result in a focus on symptom management, rather than the provision of care. Furthermore, social and psychological support for self-harm might, in some cases, be more effectively provided in non-clinical, community-based settings.

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 estimate 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 self-harm of around 3% in adults and 14% in children and adolescents.^{25,26} Rates are higher in females than males and highest in people younger than 25 years, although self-harm can occur at any age.²⁶ The prevalence of self-harm, particularly in young people, seems to have increased in a number of countries within the last decade.²⁷⁻³² 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 globally.²⁶

The incidence of self-harm rises sharply during adolescence,^{8,10} and an earlier onset might indicate a more severe trajectory.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 the stress and pressure on young people, which could lead to an increased risk of 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 health-care professionals.³⁴ This decision is partly due to the stigma associated with self-harm,³⁵ and partly the result of structural barriers including cost, access, and privacy concerns. These issues are compounded by the fact that some young people who self-harm can 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 1 year,³⁷ and a third of people who repeat self-harm within a year 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 health-care services for self-harm^{30,40-42}—a phenomenon termed the iceberg model of self-harm, with people presenting to services being the tip of the iceberg and self-harm that occurs in the community, which is common but often hidden, being the submerged part of the iceberg.

Within societies, some groups are at substantially higher risk of self-harm. Individuals diagnosed with mental health disorders are more vulnerable to self-harm, particularly those diagnosed with borderline personality disorder,⁴³ depression, anxiety, alcohol misuse,⁴⁴ and eating disorders.⁴⁵ Marginalised groups are also at risk. LGBTQIA+ people in HICs have approximately double the risk of engaging in self-harm compared to the general population,⁴⁶ a finding that has 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 (DALYs) lost to self-harm.²³ This approach has been used to estimate the global economic costs of non-fatal and fatal self-harm for young people up to the age of 24 years. Extending this approach to cover self-harm at all ages, and valuing all DALYs lost based on the mean world gross domestic product (GDP) per capita in 2021, would imply a cost of US\$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 sociodemographic index. Globally, 25% of the costs would fall on those under the age of 25, but this increases

to more than 33% of costs in countries with a low or lower-middle sociodemographic index.

Lived experience of self-harm

Within the last decade, the research evidence on the lived experience of self-harm has burgeoned and deepened our knowledge beyond traditional biomedical models. People describe diverse motivations for self-harming behaviour that include: self-soothing, self-care, emotional management, communication, finding comfort, self-protection, validation of identity, self-expression, and the enaction of power or agency.⁵²⁻⁵⁵ Research prefiltered through a (however well-intended) lens of medicalisation or pathology could, 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 a person with lived experience is both the researcher and researched, has provided rich and powerful accounts where stigmatising discourses are resisted and disrupted.⁶²⁻⁶⁴

Qualitative research has indicated substantial phenomenological differences between different forms of self-harm⁵⁹ 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 (figures 2, 3). Those researching or working with individuals with lived experience of self-harm should therefore be prepared to engage with uncertainty and 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 ill health. 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 can parallel other practices that are marked as pathological or stigmatised, such as drug and alcohol abuse.⁵⁹ Self-harm 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}



Figure 2: No simple answers by Fiona Stirling

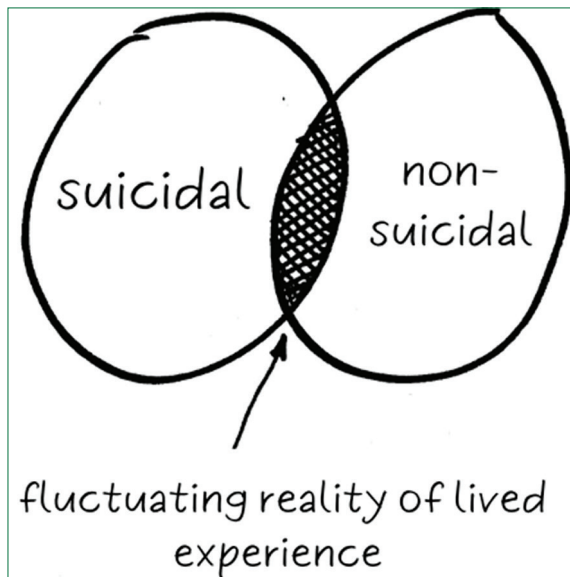


Figure 3: Fluctuating reality of lived experience by Fiona Stirling

Globally, the types of care available to people who self-harm vary widely. In many countries financial barriers are in place that prevent 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 in relation to accessing treatment. Acutely, the clinical response to self-harm involves treating the symptoms of injury rather than the causes, and in doing so does not respond fully to the lived experience of self-harm. Such lived experiences are located often in situations of oppression, marginalisation, and disenfranchisement.⁷¹ Although responding well to self-harm in clinical spaces is crucial, so too is responding

effectively to the structural drivers that often precipitate self-harm: colonialism, capitalism, racism, heteropatriarchy—drivers that target diverse groups, bodies, cultures, and peoples differently.^{56,60,72}

Self-harm in LMICs

The distribution of self-harm globally is unequal, with people in LMICs having the greatest burden.^{24,73}

Definitive sources of data are lacking in these settings as there are few surveillance systems,²⁴ and therefore international comparisons and therefore valid international comparisons are not possible. The 2019 Global Burden of Disease Study²³ 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-care services vary considerably between countries, and so estimates should be interpreted cautiously. Rates of self-harm appear to be highest in the northern hemisphere and the lowest rates appear in Africa and Latin America (although there were few countries with data in these settings). One finding that is consistent between HICs and LMICs 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 a third of all total episodes.

As in HICs, self-harm can serve a variety of functions in individuals in LMICs, including emotional regulation and the communication of distress.⁷⁴ The major difference is that in HICs, these acts typically use means that have a low case fatality, whereas in LMICs the most frequent method of self-harm is highly toxic pesticide ingestion—a method that often results in death.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 mins 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 substantially lower in some LMICs, most likely because of pesticide self-poisoning's high case fatality rate.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 a 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 the ratio being more equal in LMICs and a higher rate of fatal self-harm observed among females in Bangladesh, China, Lesotho, Morocco, and Myanmar.⁷⁹ The high rate of fatal self-harm seen in young women could 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. Based on HIC data, marriage and having young children are protective factors against self-harm, yet appear to be risk factors (especially for women) in some Asian settings.^{88,89,108} Although 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 LMICs. It is possible that there is a genuinely lower prevalence of psychiatric disorders among people who self-harm from LMICs. However, it is also possible that psychiatric morbidity is underdetected in LMIC settings.¹⁰⁹

The substantial reduction of China's fatal self-harm rate by nearly two thirds over two decades⁸¹ has received the attention of policy makers and international media.¹¹⁰ Possible explanations include improved standards of living, medical care, access to education, and economic development.^{92,111} Although these could be part of the explanation in China, it does not necessarily follow that improvements to macro-social drivers that have taken place in LMICs would have yielded similar reductions in China (an upper-middle income country). 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 substantially lower rates.¹¹³

Indigenous peoples

Indigenous peoples across the world, especially Indigenous youth, are disproportionately affected by self-harm (panel 3).^{114–127} In particular, there is growing recognition of the link between climate change, mental health of Indigenous peoples, and self-harm.¹²⁸ Current estimates of self-harm among Indigenous peoples are likely to be conservative, as self-harm rates are often identified by hospitalisations, which only represent the tip of the iceberg. Furthermore, Indigenous peoples are often under-represented 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 affected by mental illness, social and emotional distress, negative early life experiences, substance use, incarceration, homelessness, and interpersonal violence, which are associated with an increased risk of self-harm.^{122,132–135} The pervasiveness of this crisis of health

inequity, of which self-harm represents only a small part, “tell[s] plainly the structural nature of our problem”.¹³⁶

Although there is huge diversity between and within Indigenous peoples globally, 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} The Royal Commission on Aboriginal Peoples¹⁴⁰ 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.”

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 intergenerationally until grief resolution,¹⁴⁵ mauri ora (flourishing life force),^{143,146} or strong spirit or strong heart¹⁴⁷ is achieved.

Colonisation and racism are key factors in the cause of Indigenous health crises, including self-harm. They are also the most complex to address, predict, or measure, and remain under-examined in the conceptual underpinnings and intervention science driving much research in the field.^{21,148} Gooda and Dudgeon¹⁴⁹ posit that, “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 [the] 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

Panel 3: Self-harm and suicide among Indigenous peoples

A nationally representative study of high school students in Aotearoa (13–17 years, n=8500), found that the odds of non-fatal self-harm in the last 12 months were two times higher for Māori or Pacific students than for students of European descent, after adjusting for age, sex, ethnicity, mood, and socioeconomic deprivation.¹¹⁵ The risk of repeated self-harm in the past 12 months was highest for Māori and lowest for Asian and Pacific students in this study. The risk of self-harm was twice as high among students from homes with economic deprivation and students exposed to suicide among friends or family.¹¹⁵ In Aotearoa, Māori suicide rates between 2012 and 2016 were estimated to be approximately 17.1 per 100 000 people (11.3 per 100 000 in non-Indigenous people).¹¹⁶

In Australia, between 2019 and 2020, the rate of self-harm hospitalisations for Indigenous peoples (348 per 100 000) was over three times the rate for non-Indigenous peoples (104 per 100 000).¹¹⁷ A study of self-harm presentations between 2006 and 2011 at a primary health-care centre across three remote Indigenous communities reported a presentation rate of 1638 per 100 000 people.¹¹⁸ The age standardised suicide rate for Aboriginal and Torres Strait Islander peoples was estimated to be 27.1 per 100 000 people in 2019 (12.2 per 100 000 in non-Indigenous people).¹¹⁹

In Canada, a study of emergency room youth admissions (<18 years, n=41 159) in Alberta, Canada, between 2002 and 2011, found that over 16% of young people treated for self-harm were Indigenous, despite Indigenous peoples accounting for only 6% of the total population.¹²⁰ These young people also had considerably fewer follow-up visits. In Canada, suicide rates among First Nations, Métis, and Inuit peoples in 2016 were estimated to be 24.3 per 100 000 people (8.0 per 100 000 in non-Indigenous people).¹²¹

In a representative sample of young people in the USA (aged 14–18 years, n=64 671), 21% of Indigenous youths, 18% of White youths, and 12% of Black youths reported self-harm in the previous 12 months.¹²² In a study with one southwest tribe (n=182), the data from 2007–08 show that the rate of self-harm among tribal members of all ages was 600 per 100 000, and 3000 per 100 000 for youths aged 10–14 years.¹²³ In the USA, rates of suicide among American Indians and Alaska Natives were estimated to be 23.9 per 100 000 people in 2015 (13.5 per 100 000 in non-Indigenous people).¹²⁴

In Greenland, a country with a 90% Indigenous population, the self-harm rate is 100 per 100 000.¹²⁵ In a study of Norwegian youth (n=3987, aged 15–16 years), there was a non-significant trend of higher rates of self-harm in Sámi adolescents compared to non-Indigenous youths.¹²⁶ In Norway, suicide rates among Sámi people between 1970 and 1998 were estimated to be 18.5 per 100 000 (13.0 per 100 000 in non-Indigenous people).¹²⁷

context in many communities. With muted voice, the pain and hurt being experienced by our young is being turned upon themselves.”

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 effects 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 disorders, impaired relational attachment and developmental maturation, negative cascades of events, and social marginalisation.¹⁵¹ The effects of government relocation policies in the USA 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 social, economic, and health disadvantages compared to the Indigenous population that has not been removed—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.¹⁵³ In New Zealand, the effect 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 effect 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 issue. Risk factors for self-harm include both internal (eg, neurobiological, psychological) and external (eg, interpersonal relationships, culture, and the sociopolitical landscape) factors, which together form the context through 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 perfectionism¹⁷³ and self-criticism,¹⁷⁴ anger,¹⁷⁵ fear,¹⁷⁶ adverse childhood experiences,^{177,178} beliefs and expectancies about self-injury,^{179,180} interpersonal violence¹⁸¹ and peer victimisation,^{182,183} peer and family relationships,^{103,184–186} social

support,^{181,187} life problems,¹⁸⁸ social problem solving,¹⁸⁹ pain,^{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 Given the complex interplay of this multitude of factors, effective prevention and intervention strategies need to be multifaceted, addressing both the immediate behaviors and the broader psychological and social influences underlying self-harm.

Self-harm is one of the nine core symptoms of borderline personality disorder. Individuals diagnosed with this condition have enduring instability in the domains of emotion regulation, interpersonal relationships, impulse control, and self-image.²⁰⁰ Borderline personality disorder has a community prevalence of 2%²⁰¹ and individuals diagnosed with borderline personality disorder have serious health problems and a suicide rate that is 50 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 borderline personality disorder.²⁰³ Ecological momentary assessment studies indicate that among young people diagnosed with borderline personality disorder, the acute onset of negative feelings is strongly associated with subsequent incidents of self-harm.^{204,205} Research has even suggested that self-harm might be an early, readily observable phenotypic marker of later borderline personality disorder,⁴³ although currently there are no robust longitudinal data to support this assertion. Perhaps more importantly, cessation of self-harm is often targeted as a focus for the psychological treatment of people with borderline personality disorder. 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 a spectrum of behaviour has been considered within both the self-harm definition and research base, including so-called suicidal behaviour and NSSI. Neurobiological factors related to self-harm can be broadly organised into three distinct categories:²⁰⁷ distal factors, which can be present from early in life, such as genetic and epigenetic processes;^{208,209} proximal or precipitating factors such as stress and associated biological alterations (including pain and deficits in reward processing)^{210,211} that could immediately precede a single episode of self-harm; and 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 psychopathology²¹⁴ 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 genome-wide association studies published within the past 5 years 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 studies are in non-coding parts of the genome and thus the exact protein and function that is being affected 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 could have a unique genetic architecture that is 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. 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 particular biological pathways, such as those related to the 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} A 2023 study also reported that suicide attempts could be associated with three DNA methylation probes in a statistically robust manner,²²⁴ 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 *PLAAT4* (with function related to skin ageing). 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.

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-striato-limbic systems that regulate emotions and impulsive behaviour. Among the cortical structures most 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 indicated young people who self-harm have a lower frontal pole surface.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 so-called 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 absent.²⁰⁷

Enhancing our understanding about the neurobiology of self-harm could help inform the development of effective interventions.^{16,211} Currently we do not have a clear picture about whether 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 that 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.²²⁹ These factors account for up to 55% of health outcomes²²⁹ and most likely 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—particularly for people living in LMICs and Indigenous peoples.^{116,229–31}

A multitude of structural factors in societies can 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.²³² The trauma from such experiences can lead to mental health struggles and, in this context, self-harm can emerge as a coping mechanism. Sexual discrimination and a scarcity of opportunities in education, employment, and leadership contribute to feelings of powerlessness, which could in turn lead to mental health difficulties and associated self-harm. In addition, women are more likely to face economic hardship and dependency due to wage gaps, higher rates of part-time work, and responsibilities for unpaid care work.²³³ The associated financial strain can adversely affect mental health and could 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 are associated with the frequency of hospital-presenting self-harm. In the Multicentre Study of Self-harm in England,²³⁴ individuals from the most deprived geographical areas accounted for more than three times the presentations to hospital for self-harm relative to patients from the

least deprived areas—this finding represents 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.²³⁵ Adolescent offspring of parents with lower education and lower income are more likely to engage in self-harm.²³⁶ 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.²³⁷

Although HICs 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 health care.²³⁸ 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 these traumas can contribute to the ongoing mental health challenges they face, which in turn could manifest as self-harm. Immigrants and their descendants living in HICs can 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; this in turn can increase the risk of self-harm, particularly among younger migrants.²³⁹ 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, might face compounded challenges.

Furthermore, health-care disparities, including limited access to culturally competent mental health services, can affect ethnic minority populations.^{240,241} Inadequate representation of diverse perspectives in health-care systems can result in services that do not address the unique needs of these populations. Negative stereotypes and misrepresentation of ethnic minority groups in media can also contribute to the perpetuation of harmful narratives. These narratives, in turn, can influence societal perceptions that increase marginalisation and stress within communities,²⁴² and thus also conceivably increase the risk of self-harm.

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

Panel 4 focuses on an Indian context—there are complex relationships between social structures (such as gender and caste) and economic organisation and availability of

Panel 4: Economies of pain (Ishita Mehra)

I have come to understand that social hierarchy stemming from an unjust past is the basis of an economic structure that leads to present-day India. I do not see any way that this economic system, based on racial, caste, gender, and sexual inequalities, can produce a healthy society.

When looked at closely, the causes for depression and high stress which can lead to suicide and self-harm have their roots in discriminatory socioeconomic structures that marginalised groups in India face. For instance, women in India can face high stress in their households due to patriarchal practices, domestic abuse, forced marriage, lack of access to education, and financial dependence.

I am from a fairly privileged background; upper caste, fair-skinned, English speaking, urban. I was taught to grow into a sense of entitlement simply for being upper caste. Despite having some privilege, my experiences led me to re-examine the social system I was born into, to better understand the injustices that many people face. For instance, even with my privileges, I faced substantial financial and practical challenges in accessing mental health care.

The economic structure of capitalism sells an illusion of freedom of choice, freedom to create new business, and have variety in lifestyle. However, this freedom of capital and choices seems to only be provided to a handful of us in society: it is an economy of pain. Do Dalit students like Rohith Vemula have freedom of choice in what they can do when the system oppresses them daily into extreme stress and poverty? Do people like me have freedom of choice in health care when I see the lack of quality health care in my environment? How much choice do farmers have when they have little to no socioeconomic support, considering the high rates of suicide in their community?

Can people be blamed and stigmatised for suicide attempts or self-harm if they feel like it is their only way out? This issue affects so many people. I might sound hopeless, but if that was the case, maybe I would not be writing these thoughts out. I still have hope that we are walking towards a new era of society where talking about suicide and self-harm is not without an honest acknowledgment that addresses the sociocultural and economic injustices which are deep-rooted causes of why suicides and acts of self-harm take place.

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.

Panel 4 also illustrates that 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 groups⁷¹ and the meanings and functions it can have vary according to the social caste 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 a psychiatric disorder.^{55,59,243,244} This individualising perspective might not sufficiently address social and structural drivers of pain and misery,^{243,245} and can result in individual interventions that ignore wider factors that impinge on wellbeing.

These factors must be considered in the context of a society's pre-existing rates of self-harm as well as sociocultural attitudes, particularly those that could encourage shame, hopelessness, or both. The latter can be shaped by cultural messaging and portrayals in news, entertainment, and social media.¹⁹⁷ This cultural milieu might have a substantial effect on people's self-harm behaviours. 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

Although 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 substantial, and its influence might be greater in LMICs.²⁴⁶ Two examples follow 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 both 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,²⁴⁷ and given the substantial case fatality rates associated with pesticide ingestion,¹⁰⁷ many acts of self-harm with no or 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 LMICs,²⁴⁸ and has the potential to save lives. 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.²⁴⁹ There is, however, no evidence showing that the introduction of locked boxes

to households is effective in reducing pesticide-related self-poisoning.²⁵⁰ 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.²⁵¹ 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.²⁵² The extent to which the pesticide industry has influenced self-harm prevention is unknown but 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 (eg, mental ill health).

Alcohol

Alcohol is a known risk factor for self-harm.^{253,254} The alcohol attributable fraction (the proportion of the incidence of self-harm that can be attributed to alcohol) for fatal self-harm is as high as 18% (ie, assuming causality, removing this exposure would prevent roughly 140 000 deaths from self-harm annually). With increasing awareness of alcohol-related harms and government regulation, many HICs have seen reductions in overall alcohol consumption.²⁵⁵ The shrinking market has resulted in industry focusing their efforts on other avenues for profit generation, namely LMIC markets,²⁵⁶ which have seen steady growth in alcohol consumption.²⁵⁵ Evidence from the African continent has documented corporate influences on health, where companies are lobbying governments and guiding policy to support growth.²⁵⁶ The alcohol industry has not only influenced but has provided exact wording for national policy documents in at least four sub-Saharan countries that are in line with the industry's policy vision, but against public health.²⁵⁷ Notably, three of these countries have a fatal self-harm rate that is two to four times higher than the global average, with Lesotho having the highest rate of fatal self-harm globally.²⁵⁸

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

The influence of media on self-harm

Despite substantial public health efforts in HICs to decrease stigma and to increase and improve discourse about mental health, rates of self-harm are increasing—especially among young people. A scan of the media environment could yield clues, given that media exposures are among the most powerful influences on

behaviour at a societal level.^{259–261} The social environment influences behaviour through social learning, whereby individuals emulate the actions of others with whom they identify.²⁶² This process happens at a macro level (eg, 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, friends, or peers). Empirical evidence suggests that people exposed to self-harm in others are more likely themselves to engage in self-harm.²⁶³

Widespread depictions of self-harm as a useful 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.^{259,260,264}

Skye: “Why would I be jealous of a dead girl. What she did was stupid...She didn’t go through anything different than any of us. We all get through it.”

Clay: “Yeah...then what’s that” [grabbing Skye’s arm and revealing cuts on her wrist]

Skye: “It’s what you do instead of killing yourself. Suicide is for the weak.”

*13 Reasons Why, Season 1, Episode 11*²⁶⁴

Cutting for emotional regulation, for example, a behaviour once incorrectly considered restricted to people diagnosed with borderline personality disorder, is now much more common in young adults across mainstream populations, especially among young women,³⁰ and this rise might, in part, have arisen as a result of social learning.

Potentially powerful visual images of self-harm are more accessible than they have ever been, and this fact must be contextualised 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,²⁶⁵ who could be especially susceptible to suggestion. These exposures could 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. People worldwide have increased access to information and methods pertaining to self-harm and could falsely perceive self-harm as being an acceptable and normal way to respond 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 Netflix series *13 Reasons Why*. Some have argued that *13 Reasons Why* 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 self-harm, and that the responsibility to prevent a person’s self-harm rests with others.²⁶⁰ The messaging landscape, of which *13 Reasons Why* is an example, informs cultural norms that

might 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 is far more complex and should be further interrogated.

Although social media is often linked with negative effects on mental health, it could also have protective effects under some circumstances. Social media platforms provide opportunities for individuals to connect with others and these opportunities could 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 can offer emotional support, helpful advice, understanding, and even a sense of belonging. However, the effect of social media on mental health varies among individuals, and this area warrants ongoing investigation.

Psychosocial and pharmacological treatments for self-harm

Three high-quality systematic reviews from 2021 have highlighted a paucity of good quality evidence regarding the effectiveness of psychosocial and pharmacological interventions to treat self-harm in adults^{16,17} and children and adolescents.¹⁵ Although the number of randomised controlled trials testing efficacy of psychosocial interventions for self-harm have increased, there were no new randomised controlled trials of pharmacological interventions for self-harm identified for adults¹⁶ or children and adolescents.¹⁵ In adults, cognitive behavioural therapy can reduce repetition of self-harm and dialectical behaviour therapy can reduce the 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 could reduce self-harm repetition, however there were very few trials investigating these interventions.¹⁷ There has also been growing focus and evidence on brief interventions to reduce self-harm.^{216,266} Another challenge for the treatment field is that it is not clear whether any of the psychosocial interventions work for specific sub-populations (eg, men). For adolescents, dialectical behaviour therapy could reduce self-harm repetition, but clarity regarding the effectiveness of dialectical behaviour therapy is highly uncertain given the very low to moderate quality of evidence.¹⁵ Interventions for self-harm in adolescents could be more effective if they have some focus on family interactions,²⁶⁷ yet a multi-site randomised controlled trial found no benefit of family therapy over treatment as usual in reducing self-harm in adolescents.²⁶⁸ 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.²⁶⁹ Although current

evidence in children and adolescents does not indicate cognitive behavioural therapy for self-harm reduction, the low to moderate quality evidence for its effectiveness in reducing repeat self-harm in adults might indicate that there is value in further developing CBT-based interventions for self-harm in children and adolescents.¹⁵

In the study of pharmacological treatment of self-harm, the terminology in relation to self-harm and suicidal behaviour is heterogeneous. For accuracy, we have retained the terms used by the study authors. Most randomised controlled trials 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 efficacy in relation to self-harm remains uncertain.^{16,270,271} Nevertheless, several high quality randomised controlled trials have investigated the effect of lithium on suicidal behaviour, as observational and naturalistic data suggest that lithium can reduce the risk of attempting and death from suicide.²⁷² The small number of randomised controlled trials comparing lithium to placebo or to an active comparator have had disappointing results²⁷³⁻²⁷⁵ in three different populations: adults with a recent suicide attempt and affective spectrum disorders,²⁷³ adults with bipolar disorder and past suicidal behaviour,²⁷⁴ and US veterans with a mood disorder at risk for suicide.²⁷⁵ 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.²⁷⁶ These findings have also been replicated.^{277,278} Studies of ketamine—administered either intravenously or intranasally—have been promising. Over the past decade, several groups from multiple countries have shown positive effects of ketamine on suicidal ideation. However, many of these studies do not have suicidal behaviour as an endpoint and do not show evidence of benefit in terms of behavioural change (for a review see Nikayin and Sanacora²⁷⁹). Thus, there remains a strong need to develop a pharmacological arsenal to address risk of suicidal behaviour.¹⁶

Even when evidence exists for means of preventing and treating self-harm, such as the value of psychosocial assessment, there is a major implementation gap.^{280,281} Indeed, much could be achieved simply by ensuring that existing evidence-based strategies for preventing and treating self-harm are used in practice. Panel 5 summarises the current knowledge on treatments and interventions for self-harm.

Health-care responses

Many incidents of self-harm never come to the attention of health services. A household survey from the UK suggested that only half of adults received help from clinical services following an incident of self-harm.²⁸² Rates of help seeking for adolescents are even lower, with a large UK multicentre study finding that just one in seven adolescents presented to hospital following an

Panel 5: Current knowledge about treatments and interventions for self-harm

Evidence regarding psychosocial and pharmacological interventions and treatments for self-harm thoughts and behaviours in both adults and adolescents is limited, has largely been derived from high-income countries, and is generally of low to moderate quality.

- Cognitive behavioural therapy might reduce repetition of self-harm in adults
- Dialectical behaviour therapy might reduce the frequency of self-harm repetition in adults
- Mentalisation-based therapy and emotion-regulation therapy might reduce self-harm repetition in adults
- Brief interventions such as safety planning might reduce self-harm repetition in adults
- Dialectical behaviour therapy in children and adolescents does not appear to reduce repetition of self-harm, but could reduce frequency of self-harm over a longer period of time
- Some pharmacological interventions might reduce self-harm repetition in adults, but evidence is very low quality
- There is a growing number of app-based digital interventions for self-harm, but little to no evidence of effectiveness; most mental health apps available in commercial app stores are not evidence-based
- It is not clear whether these interventions are effective in subpopulations (eg, men)

However, even in cases where evidence suggests a particular intervention has value (eg, psychosocial assessment following hospital presentation for self-harm), these interventions are not consistently implemented internationally and even nationally within health-care services.

incident of self-harm.⁴⁰ Although data on help seeking following self-harm in LMICs are scarce, there is some evidence from Ghana and Malaysia suggesting that young people who self-harm are unlikely to access services.^{283,284} Health-care use after self-harm could 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 globally, self-harm is a common reason for presentation to health services. People who present to primary care services, emergency departments, or mental health services following an incident of self-harm have a much higher risk of suicide than the general population.^{37,285,286} There is also some evidence of this pattern in LMICs.^{78,287} 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 and empathic response. Unfortunately, service users in many settings still report adverse health-care experiences.²⁸⁸ Comprehensive psychosocial assessments can facilitate access to evidence-based aftercare, but more importantly

can be therapeutic in themselves.²⁸⁹ Patients have indicated that an undue focus on risk—either in the form of broad high-risk and low-risk categories or scores on risk scales—is unhelpful.²⁹⁰ Such risk assessments have little predictive validity, even in prospective studies.²⁹¹ 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.²⁹² Some have argued that the challenge is that we simply need to improve risk assessment, potentially through measures such as AI.²⁹³ However, it is extremely challenging to predict statistically rare events, such as a suicide, even in high-risk populations.²⁹⁴ Risk assessments can also have adverse effects—they could provide false reassurance or exclude people who will go on to repeat self-harm.²⁹⁰ They are also sometimes used as a post-hoc way to rationalise treatment decisions (eg, “this patient is not high enough risk to warrant in-patient admission”; “this service user has active thoughts of self-harm and so is too high risk for our service”).²⁹⁰ Leaving prediction behind does not, of course, equate to not assessing people. Some qualitative work has suggested how assessment and risk assessment practices might be improved (making them more individualised and collaborative, involving families, undertaking assessments that directly inform management).²⁹⁰ A focus on clinical needs (rather than risk) and population-based approaches to intervention have been suggested as alternatives to a risk-based framework. Aftercare is an important component of management and should be provided quickly, as follow-up studies conducted in HICs

suggest that repetition of self-harm is most likely in the immediate aftermath—one in ten people who repeat self-harm after attending hospital will do so within 5 days of the initial presentation.³⁸

Several clinical guidelines are available internationally.¹¹³ 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 clear. There are few data on help seeking after self-harm, and health and social care services might be less available in LMICs. In LMICs where we have data to suggest self-harm repetition is low,^{78,295,296} any health response should focus on primary prevention by supporting individuals to address the underlying risk factors for self-harm. These are likely to be factors that would be difficult to address in health services alone (eg, poverty, domestic abuse), therefore the health-care response needs to act to join up existing services to best support individuals. Such action would be best supported by community health workers who have intimate knowledge of their communities.²⁹⁷

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 meaningfully engages with lived experience (figure 4). Unfortunately, research about self-harm has prioritised methods that rely on quantitative approaches, drawing on statistics rather than stories.²⁹⁸ The reliance on such methods might have resulted in a diminished understanding of the lived experience of self-harm and how self-harm might be best responded to across society.^{299,300}

Qualitative methods are a key approach that centre lived experience in research. In the context of self-harm, qualitative approaches can help to extend understandings beyond epidemiologically centred approaches that prioritise self-harm’s prevalence or its association with a range of other risk factors.⁶⁰ This view aligns broadly with a Mad Studies or Survivor Research tradition that emphasises attending to experiential knowledge.^{301,302} Mad Studies is an interdisciplinary field that emerged from the experiences and activism of individuals who have experienced mental health difficulties. This field critiques traditional psychiatric practices and seeks to develop alternative understandings of mental health and illness.

Debates persist regarding whether individuals with lived experience are in control of research, or simply occupy a consultative role.³⁰³ 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.³⁰⁴ Although methods such as autoethnography counter this concern by positioning the person with lived experience as one of authority and knowledge, the inherent exposure involved can itself bring



Figure 4: I have hope by Ishita Mehra

“I never wished to feel the way I felt during my lowest moments. My soul desperately yearned for a ray of sunlight to brighten my fainting heart. I knew there was more to life than my sickness, but that magnificence could not reach my vision. My eyes grew weary. I felt like I didn’t recognize myself when I saw myself in the mirror. Despite all the emptiness, the centre of my eye held a bright iris, the spectrum of light that reflected my heart’s hope. I knew the pain, I could see it and feel it, but I knew the existence of hope, too, and that made all the difference in my life from being one step closer to life than death.”

challenges to personal wellbeing—an issue exacerbated by the ongoing criminalisation of self-harm in some countries. Some authors have established creative solutions, such as Presson and colleagues,³⁰⁵ who collaborate with pseudonymised Author X as a method for keeping identities concealed. 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 who have self-harmed recently, 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. Young people might not have the same level of maturity, experience, or capacity to fully understand the risks and benefits associated with research. As such they require additional safeguards to ensure they are not exploited or harmed by research. However, the additional safeguards (such as the need to obtain consent from both the young person and their parents or carers) can also create barriers to participating in research. These barriers result in self-harm being mediated by strict parameters that can push inquiries farther away from lived experience. Although involvement of people with lived experience could be seen as desirable, particularly in attracting research funding, the institutional and financial contexts that make such involvement possible are often missing.⁶¹ Despite substantial shifts within the last 10 years it can still be difficult to identify sources of funding to compensate those with lived experience for the time, energy, and expertise they provide to researchers (for further information, see Beresford³⁰⁶).

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, racism, and other forms of discrimination can 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 causes of behaviours and their antecedents at multiple contextual levels is the social ecological model,³⁰⁷ which has been adopted by the US Centers for Disease Control and Prevention as a model for violence prevention³⁰⁸ and for reducing mortality from mental illness.³⁰⁹ The social ecological model³⁰⁷ 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 social ecological model to suicide research and prevention is gaining increasing traction across various fields.^{170,310–313} To our knowledge, however, the social ecological model has rarely been applied to understanding self-harm,³¹⁴ but its application to understanding, preventing, and managing these behaviours is highly relevant.

Research into self-harm has tended to prioritise positivist³¹⁵ and psychocentric inquiries.³¹⁶ Positivist inquiry seeks to understand the world in a systematic way, by focusing on observable events. 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 overemphasis and overinvestment in biomedical and psychocentric frameworks, at the expense of the development of frameworks and interventions that are appropriate to Indigenous contexts.^{230,317,318} These critiques recognise the role of individual, biological, or psychological factors, but highlight their limitations in understanding the causes of self-harm.³¹⁹ 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 HICs, that has traditionally been positioned in opposition to Indigenous knowledge systems.^{320,321} Furthermore, the evidence hierarchy is impractical—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 do not align with the needs of Indigenous communities and perpetuate colonising behaviours and power structures.³²² 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 promote interventions that deconstruct societal structures and systems of oppression, and the reclamation of Indigenous ways of knowing, being, and doing.^{319,323} One example of an alternative way of theorising self-harm is felt theory, which Ansloos and Peltier²⁴³ have argued for as a way of considering—and transforming—responses to suicide, with clear resonance for self-harm (appendix p 2).^{243,324}

See Online for appendix

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.³²⁵ The continued involvement of industry in self-harm prevention might also further impede progress.^{107,216,246–258,326} Evidence from Uganda, a country with a high fatal self-harm rate and many deaths due to pesticide poisoning,^{327,328} shows high rates of non-fatal self-harm (one in four) among young people.³²⁹ Because of the methods used (ie, pesticide poisoning) many acts of self-harm with no or low suicidal intent result in death. Given the social and economic effects of these deaths (over 500 000 deaths in economically active age groups each year in LMICs⁷³) policy has perhaps understandably been directed towards the prevention of fatal self-harm. This focus has meant that non-fatal self-harm has received less focus, attention, and funding.

Self-harm prevention in LMICs has not only been absent from 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,³³⁰ and India and China, where over a third of the global population live, are not on this list.

The dearth 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.³³¹ Although researchers in the USA received 76% of funding for self-harm research (despite accounting for 6% of fatal and non-fatal self-harm⁷³), less than 1% of funding was allocated to India (0·2%) and China (0·5%; appendix pp 3–4).³³²

Finally, the relevance of some of the concepts and measures used to assess self-harm have also been questioned, with the authors of a 2020 systematic review from sub-Saharan Africa arguing that the findings of the reviewed studies were overly influenced by the use of pre-existing derived models and measures from HICs, with questionable validity to the local setting.³³³ In contexts where particular individuals (ie, those at the bottom of generational and gender hierarchies) are disempowered and the verbal communication of distress or disagreement is socially unacceptable,^{334,335} self-harm can be seen as a non-stigmatised socially sanctioned means of communicating distress.³³⁶ In these contexts, therefore, self-harm can have an important social function that might reinforce the behaviour. In addition, sociocultural differences between settings have a substantial influence on the presentation and course of self-harming behaviours,³³⁷ as illustrated by the lower rates of fatal self-harm in countries where the dominant religion proscribes these acts.³²⁶ Limited evidence also highlights important differences in self-harm practices

in LMICs, with head banging and hitting being more common methods of self-harm.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 processes,^{338–340} 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 absence of nuanced 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 might transition into self-harm behaviours, or when interventions should be targeted. Understanding this course is particularly important for the development of interventions that can be delivered in a timely manner.

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, could be expected.¹⁷ It is important to note, however, that although repetition of self-harm is commonly used as an outcome in intervention studies, it might not be of central importance to individuals with lived experience of self-harm.³⁴¹

Capturing self-harm thoughts and behaviours in context, as well as the biopsychosocial processes that precede them, is achievable by using an experience sampling methodology (ESM).^{342–344} ESM typically involves prompting individuals to complete brief, self-report questionnaires, multiple times per day over days or weeks, regarding their thoughts, feelings, and behaviours. Such methods could shed new light on the contexts, variability,^{172,338,339,345,346} and frequency³⁴⁷ of self-harm thoughts and behaviours during individuals' everyday lives.

ESM research has already delivered valuable new insights regarding the context of self-harm thoughts and behaviours. Nock and colleagues³⁴⁰ showed 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 or worthless. Kleiman and colleagues³⁴⁶ also 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 shown distinct digital phenotypes based on differences in intensity and variability of the thoughts associated with thoughts of self-harm.^{220,339,348} ESM research has also shed light on the differential functions of self-harm, both between and within individuals.³⁴⁹ ESM is therefore a powerful tool for understanding self-harm thoughts and behaviours in the context of everyday life, and, as such, potentially lays the foundations for personalised models of self-harm and precision treatment.

Although ESM has 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.³³⁸ Recall bias and issues of inconsistent reporting might 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.³⁴⁷ 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 individual's self-harm. These data from ESM digital monitoring could be used to inform the delivery of ecological momentary interventions,³⁵⁰ including personalised just-in-time-adaptive-interventions,³⁵¹ which could prompt participants to use skills learned in therapy at the very moment in their daily life when they are at risk for engaging in self-harm.

The need to triangulate different sources of individual-level data
Qualitative^{341,352–354} and coproduced research^{341,354,355} are key to gaining insights into self-harm as complex and individual acts. ESM and digital monitoring techniques can also be used to develop personalised, idiographic models of individuals' self-harm that 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

Qualitative research has shown 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.³⁴¹ Individuals with lived experience of self-harm valued alternative outcome measures such as general functioning and activities of daily living, social participation, and engagement with services above traditional trial outcome measures of self-harm frequency.³⁴¹ These results emphasise the need to consider

alternative outcomes. For example, an individual's self-harm frequency might not be reduced, but their social participation could 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 shown marked differences between individuals in proximal risk factors for self-harm.³⁵² Risk factors were diverse, including emotional distress, feelings of isolation, relationship and school difficulties, as well as exposure to self-harm. By coproducing 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 could 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 coproducing 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.^{310,311}

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 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.^{338,356} In principle, personalised interventions, such as safety planning,³⁵⁷ ecological momentary interventions,³⁵⁰ and just-in-time adaptive interventions,³⁵¹ have the advantage of being deliverable in the right context and when most needed. Personalised monitoring can also be used to track effects of pharmacological and psychological therapies in individuals' daily lives.³⁵⁸ Such interventions are not intended to replace clinical or community-based support; in fact, they could 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.³³⁸ 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.^{359–361}

Additionally, machine learning techniques could be used to help guide the selection of optimal interventions and to evaluate the development and implementation of contextually embedded interventions (eg, via Bayesian adaptive trials or sequential multiple assignment randomised trials).^{362–364} Access to technology and health-care services might, however, be a barrier to using technology-based interventions such as ecological momentary interventions³³⁸ and machine learning-based interventions,^{365,366} especially among populations where structural disadvantages exist.

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. Although the predictive capacity of each single risk factor is limited,³⁶⁷ 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 (eg, electronic health records data)^{368–372} and non-traditional data sources (eg, digital phenotyping data) will be useful.³⁶⁶ 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.^{345,373} For example, the InSTIL platform³⁷³ 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 smartphones and wearable devices)³⁷⁴ 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,^{226,374–380} which can be studied simultaneously. Different sensing modalities (eg, ambient sensors, wearable sensors, and software and social media sensing)³⁸¹ can be used to collect information at different contextual levels, including individual characteristics (eg, physiology and behaviour), interpersonal relations (eg, social interactions), and environmental contexts (eg, location and social context). Because different types of data are characterised by different statistical properties,³⁸² future research on the combination of these different data types (multimodal data fusion methods) and novel analytical 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.^{338,383} Such developments are also relevant in discussions about the use of increasingly sophisticated machine learning models³⁶⁶ and the need for more rapidly deployed digital interventions.

Most of the health-related machine learning research has been conducted in HICs.^{366,384–386} This narrow scope

makes global interoperability an important concern, and reflects the wider issues with the under-representation of LMICs in research and intervention development. In HICs, electronic health record data are frequently biased and do not adequately represent individuals from important subpopulations at risk of self-harm.³⁸⁷ 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 might naturally have demographic subpopulation inequalities. Modern machine learning methods suggest statistical techniques to resample the existing data to correct distributional bias for all subgroups for whom data exists, although non-uniformly.³⁸⁸ When a subgroup is completely absent in the data, active and purposive data acquisition methods will be required.³⁸⁹

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 used for the training of machine learning, limiting the scope of available information that models can learn from.^{366,390} Although specially designed studies could be set up to gather data on psychosocial risk and protective factors for self-harm thoughts and behaviours (eg, Ribeiro and colleagues³⁹⁰), the scale of data needed to rigorously train and test machine learning models would require either huge numbers of participants (eg, from population level studies) or huge numbers of observations (high-dimensional data from ESM, wearables, social media, etc), which present substantial feasibility challenges for researchers.

Raising the bar on data quality

Generating the quality and quantity of data necessary to apply complex analytical 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,^{391,392} 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.^{393,394} Linking data from different national or regional registries—for example, linking medical records with indices of area-level deprivation and judiciary records³⁹⁵—enables us to build a rich picture of the context that self-harm emerges in and how it changes over time, across different levels of the social ecological model. Linking different data sources raises considerable privacy issues, and developing secure platforms and workflows for handling these data is essential. DATAMIND is an excellent example of how secure integration of genetic, routine care, and trial datasets can be achieved. Although some registries were specifically established to record self-harm data,^{396–398} and we urgently need more of these worldwide, such registries record only clinical service presentations for self-harm. Where the primary outcome of an intervention trial is hospital-treated self-harm (eg, Cottrell and colleagues' study²⁶⁸), loss to follow-up and non-presentation to clinical services for self-harm could compromise outcome assessment, as also indicated by the disparity in hospital-recorded versus self-reported self-harm.²⁶⁸ Large-scale,³⁹⁹ and ideally multimodal, cohort studies^{400,401}—including data from ESMs, wearables, and self-report questionnaire data to enable both fast and slow cognitive and emotional 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. 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.⁴⁰² 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

complexity. 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,^{366,403} network analysis,^{404,405} and dynamic and multilevel structural equation modelling.^{172,406}

The use of latent class and clustering analysis could also be helpful in identifying subgroups of self-harming behaviour with different profiles. Latent class analysis has been used to classify self-harm subtypes in populations of young adults,⁴⁰⁷ as well as in an outpatient sample.⁴⁰⁸ In a sample of more than 10 000 community-dwelling adolescents, Uh and colleagues⁴⁰⁹ reported clustering of multiple behavioural and emotional longitudinal risk factors: those with a long history of psychopathology, and those without. Both had sleep problems, but the first group were more likely to have experienced bullying and were more likely to display poorer emotional regulation from an earlier age.

A caveat of applying these complex modelling techniques is that the data should be suited to the analytical 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. Similarly, 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,⁴¹⁰ such as the four-function model⁴¹¹ and the integrated motivational-volitional model.⁴¹² 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 could help to refine the precision of theories of self-harm.⁴¹⁰

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 the manuscript contributes to self-harm in a broad sense, however a precise quantification of their relative contribution and to what degree they act synergistically is missing. Numerous studies examining suicide have shown that rates are reduced with increased per-capita GDP, employment, minimum wage, as well as governmental spending on social welfare and labour market programmes.^{413–419} We would expect similar findings for rates of self-harm. However, studies on these relationships are absent even though, in principle, it

For more on the Wellcome Trust's open research policy see <https://wellcome.org/grant-funding/guidance/open-access-guidance/open-access-policy>

For more on DATAMIND see <https://datamind.org.uk/>

should be easier to detect the effect of such measures on self-harm as it is more prevalent. Likewise, we would expect that efforts to improve overall social wellbeing (eg, improved access to health care, access to green spaces, support encouraging social connectivity, effective substance control policies) and to address fundamental upstream causes (eg, support programmes for new parents to promote secure attachment, prevention of childhood and inter-generational trauma, educational programmes in schools fostering coping and resilience) would reduce rates of self-harm. However, at present, the evidence in this area is scarce.

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 acute mental health care.⁴²⁰ High quality assessment requires a workforce that is appropriately trained and supervised. Although there are many training packages available (many of which are marketed commercially), evidence on the efficacy of training is scarce. One randomised trial from the Netherlands showed a significant effect on staff knowledge and confidence after training and a significant clinical effect on some of the patients they went on to treat.⁴²¹ 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.⁴²¹ A 2023 quantitative review of training interventions for non-specialist staff in HICs⁴²² included only one randomised controlled trial and eight observational studies. It concluded that training was linked with postintervention 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 training content. Instead, the content tends to be agreed by consensus. An authoritative systematic review¹ of qualitative studies 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 simultaneously 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 that outlines the key competencies (skills, knowledge, and attitudes) that mental health and non-specialist staff who encounter people who have self-harmed might be expected to acquire.⁴²³ 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 also crucial in providing high quality, safe care to service users.⁴²⁴

Training needs to be general but also tackle the specific needs of groups who might have been underserved by traditional services. Clinicians in mental health services should be equipped to provide culturally sensitive support. Racially minoritised groups often have numerous risk factors for self-harm, greater barriers to treatment, and decreased likelihood of receiving evidence-based treatments.⁴²⁵ LGBTQIA+ communities might be discriminated against, excluded, and not receive the mental health care they need.⁴²⁶ 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 an effort to employ a diverse health workforce, particularly those from under-represented groups such as Indigenous peoples and those from ethnic minority backgrounds. Finally, it is important to recognise that health and social care professionals might 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.⁴²⁷

Peer support

All care provision for those who self-harm, in any setting, 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 approach offers a way in which lived experience is not just listened to but is propelled into action-driven innovation in care. Although evidence regarding self-harm specifically is relatively sparse, there are indications that experiences of peer support (including in online spaces) are positive.^{428–430}

Recent reports commissioned by the UK-based Self-Injury Support show service users' desire for peer-support based services.⁴³¹ In the appendix (p 5), Veronica Heney discusses Make Space, a user-led collective she cofounded with two colleagues that emerged from their own and others' experiences with self-harm.^{432,433} This collective 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).⁴³⁴

Peer support is increasingly visible in LMIC settings. For example, HeartSounds Uganda and Using Peer Support In Developing Empowering Mental Health Services aim to widen access to peer support interventions for people with mental health difficulties. 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 LMICs that 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 might 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 poem called *An Open Letter*. An excerpt of this poem can be found in the appendix (p 6), which evocatively shows 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 (figure 5).

Within peer-reviewed literature, there has been very little research into non-clinical, peer-led support for those who self-harm.⁴³⁰ This absence can be related to Fricker's⁴³⁵ testimonial on 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.^{16,436} A 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 and other positive changes including friendship and decreased isolation, a sense of empowerment and self-worth through witnessing and supporting each other's struggles and successes, and improvements in self-awareness, mood, and interpersonal skills.⁴²⁹

Peer-to-peer relationships can be effective in confronting those who self-harm with the relational effects of their actions, forming a radical and positively disruptive incentive and catalyst for change. Pairing this confrontation with a context that creates relationships whereby group members can rely on each other 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 and colleagues,⁴²⁹ however, evidence in peer-reviewed literature that explores such changes or evaluates peer-support for self-harm in general is scarce. This scarcity could reflect biases in research that tend to diminish the role and value of lived experience in mental health-related interventions and support and emphasise the importance of clinical or professional support.³⁰³

Crisis support is another arena where peer-support can prove revolutionary—in both clinical and non-clinical spaces.⁴³⁷ Alternative crisis care contexts, such as recovery houses and crisis cafes, are run by voluntary and community non-government organisations, and often



Figure 5: Sacred tear by Ishita Mehra

"I created this image in response to Mel Ball and Fiona Kuhn-Thomas' performative dialogue (appendix p 12). This honest dialogue felt like a voice from my past, an experience I had felt before but distanced myself away from. It influenced the colours I imagined when reading those sentences. I shed a tear for myself and all the other people who have had to experience something similar, knowing there is no way to unknow an experience. There is no going back from the harm that has been done."

include peer workers. However, the pay of these workers, and the resourcing of these community-based services, are often uncertain, contingent, or absent.⁴³⁸ The scarcity of robust research evidence in this area⁴²⁹ likely further contributes to the failure to properly resource and value such non-clinical, peer-based, or community-based spaces in supporting those who self-harm. Observational research from Sweden has found that brief self-referred admission to hospital might be an effective crisis intervention for young people who self-harm;⁴³⁹ similarly, in the UK, the James' Place community-based crisis model⁴⁴⁰ 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 that emphasise peer-to-peer relationships, as seen in therapeutic communities, can facilitate recovery.⁴⁴¹ Therapeutic community treatment is associated with a

promising signal of efficacy in reducing self-harm among people diagnosed with personality disorders.^{442,443}

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,^{30,40,42} 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-based interventions could 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.⁴⁴⁴ Mobile health interventions for self-harm have also been tested in predominantly White female individuals from affluent societies, and the results might not generalise to other groups of individuals and settings.⁴⁴⁵ Furthermore, until recently, few mobile health interventions have been co-produced by individuals with lived experience of self-harm thoughts or behaviours. Therefore, the extent to which available mobile health interventions effectively meet the needs of individuals who think about or engage in self-harm is unclear and warrants further investigation.⁴⁴⁵

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 might be most effectively conducted by particular sectors and actors. Although there is inevitable 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 might reduce the incidence of self-harm.⁴⁴⁶ Improving wellbeing can be achieved through individual-level strategies, but society-wide efforts to improve wellbeing could be much more effective.^{447,448}

Relatively few governments and other high-level stakeholders are considering self-harm as a factor in economic, social welfare, and climate policy decisions. This oversight 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 might have played a role in fewer hospital presentations for self-harm observed from 2007–16, in contrast to many other European countries.⁴⁴⁹

There is a dearth of studies examining the economic cost-effectiveness of investment in education, employment

programmes and unemployment protection 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 health-care 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 might increase the chances of more widespread implementation of robust policies aimed at societal wellbeing. 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 affect poverty and could also reduce the strain on households that might otherwise lead to more relationship breakdowns and separations. Reductions in poverty and family disruption could 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.⁴⁵⁰ Such protections, which were widely implemented in HICs, might have played a role in the observation that, overall, rates of self-harm presenting to health services in HICs did not rise internationally during the pandemic.^{451,452}

Many countries have already created national strategies for the prevention of suicide.³³⁰ 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 approach 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 could include greater investment in social welfare as described previously, added support for families with children, school-based interventions aimed at improving mental health and reducing bullying,^{453,454} responsible climate policies, efforts to reduce gender-based violence, and criminal justice reform. Furthermore, health-care systems should focus on enhancing access to specialised interventions.

Recommendations for governments: the punishment of people who self-harm around the world must stop

Punitive responses to self-harm are widespread—this must stop. Such responses occur most starkly in countries where self-harm is deemed to be attempted suicide and subject to prosecution.^{455,456} One in ten countries criminalise self-harm,⁴⁵⁷ and many of these countries are LMICs. Decriminalisation of self-harm is actionable and requires bipartisan 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, as well as reducing unnecessary burden on criminal justice systems.

Punitive responses to self-harm are also implicit in negative and abusive responses from clinical staff.⁴⁵⁸ Even in countries such as the UK, where self-harm and suicide are decriminalised, people can still face criminal justice consequences.^{459,460} These can take several forms, including community protection notices that 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-harm⁴⁶¹ and people have described health-care plans that instruct and plan for calling police in a crisis.^{460,462} Lived experience perspectives have been key in challenging policies such as these,⁴⁶³ but for individuals, speaking about their own experiences can come at substantial personal and social cost.

In Panel 6, Emma McAllister highlights the way that criminalisation of self-harm continues to intensify the problems faced by those with lived experience of self-harm.

Recommendations for governments: addressing the needs of people who self-harm in LMICs

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 that have been developed from the perspective of HICs, informed by the features of self-harming behaviours observed in the US, western Europe, or Australia. These prominent theories focus predominantly on individual-level psychological processes and do not consider broader contextual factors.^{216,464,465} 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 the application of these theories to more diverse settings, leading to the use of scarce resources to evaluate interventions that are contextually inappropriate and possibly ineffective (appendix p 7).^{295,465} Interventions therefore need to be developed that are specific to the context, and assumptions that an intervention suitable in one LMIC would be applicable in another need to be eliminated. This is because there could be substantial between-country differences in cultural norms, beliefs,

Panel 6: The labour of being heard (Emma McAllister)

The creeping criminalisation of self-harm brings with it a dual effect: not just the consequences of criminalisation, but also threats to credibility, which can make achieving change as an individual with lived experience even harder.

Being prosecuted for self-harm brings with it societal shame, stigma, discrimination, as well as epistemic injustice, making the person less likely to be believed when they try to speak about what has been done to them. There can also be affective bias—listeners may not want to believe or hear experiences of prosecution and harm which make them feel uncomfortable.

Being heard requires a person to have or find a platform after the life impacts of criminal justice processes, and then be prepared to work unpaid giving evidence to inquiries, raising concerns through formal processes, working with the press and others, using social media to build networks, and extensive work to rebuild credibility. Even with all that I am still often dismissed; people assume that to have been arrested and prosecuted after self-harm, there must be more to it. They do not want to hear or believe lived experience that unsettles them.

Transformation can only happen when people are ready to recognise the damage caused by criminal justice involvement in self-harm. The current practices of aversive responses, punitive measures, or criminal sanctions for some who self-harm is widespread and is contrary to international policies on the decriminalisation of suicide, and ethical practices of treating people with dignity.

and practices surrounding self-harm, as well as around mental health. Additionally, variations in health-care infrastructure, resource availability, and socioeconomic conditions are likely to affect the feasibility and effectiveness of interventions across different LMICs.

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

Structural and social interventions

With an estimated 11 million people in LMICs either self-harming or dying because of self-harm,^{73,466} and a further 4–82 million affected or bereaved by self-harm,^{467,468} there is an urgent need to prioritise self-harm prevention in these countries.

Achieving this will require radical shifts in policy and practice. Decriminalising self-harm is just one of the factors that could help to reduce self-harm rates in LMICs. Others include tackling the vested interests of commercial entities that 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 (eg, state-sanctioned

discrimination of sexual minorities). The implementation of such changes requires the building of a coalition across ideologies—a formidable challenge, but one that needs to be addressed to prioritise self-harm prevention globally.

The banning of highly toxic pesticides at a national level led to reductions in non-fatal and fatal self-harm (without negatively affecting crop yield⁴⁶⁹) and is recommended by WHO.⁴⁷⁰ This ban needs to be urgently actioned in LMICs. Many pesticide self-poisoning deaths might be the result of a non-suicidal self-harm attempt in LMICs where highly toxic pesticides are readily available. The banning of these pesticides could lead to a reduction of pesticide-related fatal self-harm by 35–50%, and a reduction of overall fatal self-harm by 24–50%.²⁴⁸ 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 in this population.

Socioeconomic interventions, such as cash transfer programmes, could potentially improve welfare and reduce self-harm by mitigating socioeconomic hardship. A recent longitudinal study of over 100 million Brazilians found that financial protections for the most economically vulnerable reduced fatal self-harm rates by 61% (appendix p 8).⁹⁷ Strategies targeting poverty and financial hardship due to unemployment during the pandemic should be urgently evaluated across all economic contexts to assess their efficacy in preventing self-harm.⁴⁵⁰ 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.⁴⁷¹ 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 communication strategies from settings where self-harm risk factors may vary substantially.

Individual interventions

Universal health coverage requires investment to ensure that all those in need can access physical and mental health care without incurring financial strain. 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 health-care services and social services is also essential for those requiring face-to-face treatment.

As previously highlighted, health-care response plays a substantial role in preventing self-harm by supporting

individuals to access services and support available outside of the medical sector. This support 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 might not be universally applicable (as it is currently presented), and where available, point to evidence from diverse settings on risk and protective factors and effective intervention strategies.

Attempts to implement mental health services based on HIC models frequently encounter low uptake in LMICs when they do not take into account important contextual factors to which people attribute their distress.⁴⁷² 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 access early help.^{473,474}

Recommendations for governments: 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 views from HICs about mental health could propagate institutional racism and create barriers to treatments as the health practices 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. The interventions can also unintentionally inflict further psychological oppression by promoting social conformity and reinforcing existing power structures.¹⁴¹ The absence of cultural safety in mainstream services is a major obstacle to help seeking for Indigenous peoples who self-harm.⁴⁷⁵ 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.⁴⁷⁶

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 we present six guiding principles

for action (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 also provide illustrative case studies to highlight these principles in action (appendix p 9).^{230,231,477–485}

Guiding principles for action: human rights

A human rights framework is essential to health equity more broadly, including in the prevention of self-harm. Although the UN Declaration for the Rights of Indigenous Peoples (UNDRIP) was adopted by the General Assembly on Sept 13 2007, it was initially opposed by Australia, Canada, New Zealand, and the USA. The initial opposition stemmed from concerns including: national sovereignty (which could lead to claims of independence by Indigenous groups); land rights (which could conflict with existing national laws and policies); and the recognition of consent (which would require negotiations over resource developments on Indigenous lands). Although their positions were later reversed, none of these countries, nor others including Brazil, Mexico, Peru, Colombia, Ecuador, Norway, Sweden, Finland, Russia, China, India, Indonesia, and the Philippines with Indigenous populations, have meaningfully engaged with the Declaration.^{116,486,487}

What would meaningful engagement entail? Truth-telling and reconciliation, an acknowledgment 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 had a collective assault on their ability to self-determine their future, which has resulted in an extreme sense of powerlessness and loss^{137,488,489} which are both key drivers to self-harm.¹⁵⁰ 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.⁴⁷⁹ However, the issues of sovereignty and self-determination are complex.⁴⁹⁰ Participation in society, without ownership and resources, is not the same as self-determination and autonomy. Steps that are being taken to create Indigenous-specific self-harm prevention strategies are illustrated in the appendix (p 9).

Guiding principles for action: 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 counter colonial rationales (eg, Stoor and colleagues⁴⁹¹). However, Indigenous communities and community-controlled organisations can challenge the status quo.

Holistic approaches to the prevention of self-harm must concurrently target individual distress, community

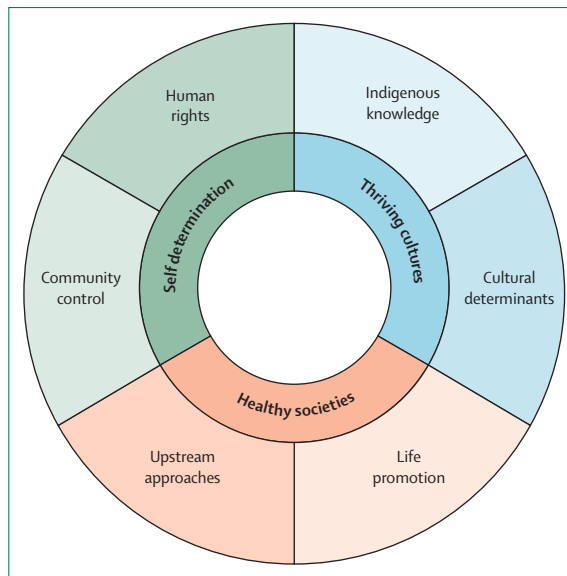


Figure 6: System-based approaches and guiding principles for action

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.^{323,492} 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 (appendix p 9).^{323,492}

Guiding principles for action: 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 could ultimately diminish.

Upstream (structural) interventions address the foundational social and economic structures, including colonial structures, which affect health equity on the macro level.^{493,494} This approach 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 that seek to increase the quality, relevance, and equitable

access to health and social services, including mental health services, 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 (appendix p 9).

Guiding principles for action: life promotion

Indigenous communities are now focusing 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.

According to the National Aboriginal Health Strategy Working Party,⁴⁹⁵ Aboriginal health is “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.”

In research and practice, life promotion prioritises holistic wellbeing as the key strategy and mechanism of change.^{231,484} This prioritisation enables a systemic shift towards the creation of comprehensive sociopolitical, cultural, environmental, and economic conditions conducive for thriving. Although innovative to non-Indigenous communities, this approach is established in 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 (appendix p 10).⁴⁹⁶

Guiding principles for action: cultural determinants

Systematic policies of cultural dispossession and disintegration, including the criminalisation of cultural practices and languages and sociopolitical 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 recognised.

Linda Tuhiwai Smith⁴⁹² describes colonisation as experienced by Indigenous peoples as a process of disconnecting them from their histories, landscapes, languages, social relations, and their own ways of thinking, feeling, and interacting with the world. Many

HICs are yet to fully acknowledge their histories of colonisation and systems of racism.

Raising awareness about historical trauma and approaching the subject with honesty are essential to grief resolution.^{145,485,497} Research on self-harm among Indigenous communities must consider the breadth of Indigenous knowledges, to offer genuine solutions to the distress felt by these communities.

The role of maintaining traditional culture in enhancing wellbeing and preventing self-harm is described by 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 shown that maintaining traditional culture can help to promote physical health, holistic wellbeing, and mitigates against risk-taking and self-defeating behaviours within Indigenous communities (appendix p 11).^{498–500}

Guiding principles for action: Indigenous knowledges

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

Leanne Betasamosake Simpson⁵⁰¹ 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 preventive practices that affirm and nourish cultural identity and restoration, recognise cultural idioms of distress, and identify culturally connected and community-based approaches to health.^{139,488,502,503} 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.⁴⁹⁷ 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.^{488,504–507}

Recommendations for the delivery of services

Clinical services play a clear role in responding to self-harm by providing medical treatment to serious injuries, which saves lives. However, services designed to help those who self-harm can also cause iatrogenic harm.⁵⁰⁸

Evidence of poor treatment and negative attitudes among health-care practitioners towards those who self-harm goes back at least as far as the 1970s and continues today.^{59,434,509,510} In the UK, extensive patient survivor testimonies were published in the 1990s, detailing problematic treatment experiences^{52,511} that are echoed in more recent reports.⁴⁵⁸ 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.⁴⁵⁸ Abusive, dismissive, or otherwise negative treatment can have far-reaching effects on those who self-harm. In the UK, a 2016 study reported a range of negative consequences highlighted by those who self-harmed following poor treatment, including avoiding future help seeking and exacerbation of distress, leading in some cases to severe acts of self-harm.³⁶ It also showed that concerns about being taken seriously when seeking help were said to result in the infliction of more serious wounds before help seeking.^{36,458} One individual reported, “...I ended up doing some damage to my wrist so that they’d admit me...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.”^{458,512}

Considering such reports, there are frequent calls for more training for clinical staff to help them better understand and respond to self-harm.²⁸⁹ However, without more radical changes occurring in the way that care is delivered to people who self-harm, there is only so much that training efforts can achieve. As Monteux and Monteux⁵¹³ argue, all too often, care practices centre on doing to rather than more everyday care of being with.

In Panel 7 and the appendix (p 12), 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 stories of poor care^{59,289,458} suggests that there has been an overall failure to heed the knowledge shared by testimonies of those who self-harm.⁴³⁴ Furthermore, the apparent resistance to change might also represent a form of testimonial injustice (appendix p 13).⁴³⁵ The question is how do we transform listening into real change?

Recommendations for the delivery of services: is coproduction a way forward?

Coproduction is defined by Boyle and Harris⁵¹⁴ as a means of delivering public services in an equal and reciprocal relationship between professionals, people using services, their families, and their neighbours. Similarly, codesign provides a way for people with lived experience of self-harm to be meaningfully involved in the design and delivery of services. An example of how codesign can work in practice can be found in the appendix (p 14).

Clinical guidelines, such as those from the National Institute for Health and Care Excellence,¹ emphasise the

Panel 7: Good care is rare, but it should not be extraordinary (Tash Swingler)

Good care after self-harm has been a rare experience for me. Often, my belongings and phone are taken away and searched, I am guarded by a security officer, or placed in a room with security cameras to watch me. Often I am sutured without any anaesthetic or pain medication and told that it is because I have self-harmed, or I am left in the waiting room for longer than anyone else, bleeding onto the floor and wiping it up with the bandages attached to my skin. Good care looks like none of these things; it is compassion and an attempt at understanding, it is the time and effort to talk about harm minimisation approaches, to stitch carefully to avoid keloids, to talk gently as you clean the wound. It is as simple as asking what I need from you, or how best we can work together in that moment, free from judgement and fear of punishment. Good care after self-harm, is not extraordinary.

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 health-care providers and patients in managing self-harm. The benefits of coproduction as a means of democratising assumed expertise related to the design of services has been written about extensively elsewhere.³⁰⁶ This work is time intensive and requires adequate resourcing. There are also considerable challenges to be met regarding power and the relative value that knowledge from lived experience could be accorded.^{303,515} However, there are radical benefits of coproduction—by challenging hierarchies of knowledge and developing meaningful relationships between service providers and service users, some of the injustices and silencing we have detailed can be avoided.^{303,341,436,516}

Having those with lived experience of self-harm more centrally involved in the design, delivery, and leadership of care might offer some ways forward in tackling long-standing mistreatment and poor care. Within this, young people warrant particular attention for several reasons. First, the incidence of self-harm rises sharply during adolescence. Second, both clinical interventions and those offered outside of standard health care generally do not 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.³⁵⁴ Young people 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.⁵¹⁷ 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 young people of today and the adults of tomorrow.^{518,519} Such progress could be particularly important for groups who might experience stigma such as LGBTQIA+ youth, many of whom might 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. Evidence suggests that suicide prevention videos developed by young people can increase help seeking and reduce suicidal thoughts and feelings.⁵²⁰ Youth self-harm prevention efforts should therefore be codesigned with young people to optimise their effectiveness (appendix p 15).^{521,522} This approach requires an infrastructure to support meaningful and ongoing youth involvement, and adults who are willing to forge genuine partnerships with young people.

Recommendations for the delivery of services: enhancing the coordination of care

People who repeatedly self-harm often have complex needs. These needs can be clinical, but many are social and economic, such as unemployment, homelessness, and social isolation.⁵²³ In some HICs, this need is being partly met through services that offer care coordination to people who have presented to the emergency department following self-harm.⁵²⁴ 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 these 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.^{525,526} Better integration of services and adequate staffing capacity is needed to ensure that all people who could benefit from these services are able to access them. There are currently no evidence-based care pathways for self-harm, but the principles underpinning them as well as their components have been delineated in clinical guidelines and previous research (eg, providing care which is compassionate, collaborative, and timely).^{1,16,17} Involving family members and carers can be helpful and continuity of care (both in terms of health-care personnel but also informational continuity) is key. Continuity might best

be achieved through having multidisciplinary specialist teams who work across traditional boundaries such as primary and secondary care, acute care, 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.^{1,16,17,527} However, 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.⁵²⁸

Recommendations for the media and wider 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 validate that emotional distress can be difficult to manage but 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.⁵²⁹ 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 (appendix p 16).⁵³⁰ There is hope that communication challenges surrounding self-harm can be overcome as they have been successful in other efforts to shift norms and discourse and improve public health (eg, smoking prevention, safe sex practices, road safety, physical distancing in the context of the COVID-19 pandemic). We argue that discourse related to self-harm communication across media and society requires a reorientation towards safe communication that establishes adaptive coping and help seeking as the norm. In Panel 8, we set out our Commission's four key principles that 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 could lead to reduced subsequent suicides, and there is every reason to

suspect that the same principles would hold for self-harm in general.^{261,531–534} The scientific community has an increasingly comprehensive understanding of the kinds of content and narratives that cause harm and those that often confer benefit.^{260,261,534–540} Narratives of mastery involve a scenario where 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 *I–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.^{532,541} Logic's song was also associated with 245 fewer suicides (–5.5%) in a one-month period across the United States.⁵³² Against this, we also acknowledge that there is literature highlighting the potentially detrimental effects of recovery stories if, for example, they include particular problematic content (eg, depictions of self-harm methods) and the necessity to tell only appropriate stories about self-harm.^{542,543} The key gaps in this area, therefore, do not relate to an absence of theoretical or practical understanding. Rather, there are challenges with knowledge transfer, exchange, and implementation, for example, because journalists, news editors, and social media platforms are often incentivised to spread sensational or attention-grabbing stories that capture the public's attention. This circumstance, nevertheless, provides one of the most promising opportunities for mainstream societal-level intervention if there is careful attention to content so that inadvertent harm is avoided.

Recommendations for the media and wider society: changing how we view self-harm as a society

The way in which society views self-harm can have a major effect on the likelihood of people 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 (figure 7).

One of the challenges of this approach is that some discourse about self-harm, even discourse that could be harmful in particular circumstances for some people, might confer benefit in others or for specific individuals (eg, youth who share about self-harm on social media receiving support from peers; figure 8).⁵⁴⁴ Nevertheless, such benefits are undermined if they are not paired with broader efforts to avoid normalisation and to promote alternative coping strategies for managing adversity as well as help seeking.⁵³⁶ It is therefore essential to strike a careful balance between speaking openly about self-harm and avoiding inadvertently presenting these behaviours as normative or desirable outcomes.

Panel 8: Principles of healthy communication about self-harm

There should continue to be substantial, healthy public discussion about mental health with careful attention to non-stigmatising content and language. However, this discourse should not usually involve description of self-harm behaviour in order to avoid a public expectation that these factors are present in all or even the majority of mental health crises.

Caution should be exercised in large public discussions of self-harm in both traditional and newer media, and in educational and community settings. This is not to say that they should not occur—but when they do, they should focus on relatable stories of survival, recovery, coping, and help seeking with an emphasis on practical strategies. These stories should ideally be conveyed by people with lived experience.

Other narratives that could have positive effects should also be explored, in a careful way that ensures that discussions do not lead to harm. Because people are different, it is inevitable that stories of survival and recovery might not resonate for everyone and some people might remain feeling isolated and invisible. Alternative narratives could work for them, but there is a tension because of a gap in knowledge. We need to build this evidence base in a cautious way, evaluating the effects of different narratives with different groups.

Descriptions of self-harm behaviour should be avoided where possible. In situations where there is a compelling reason to describe self-harm behaviour, it should be presented as complex, unnecessary, and preventable. These discussions should emphasise the multiplicity of factors that lead to self-harm, and the fact that this behaviour is rarely the result of a single cause or event. Information that can cause harm (eg, depictions of self-harm methods) should be avoided and helpful information (eg, self-regulation strategies, crisis resources, messages of hope) should be promoted. Discussions of self-harm may also highlight long-term harms such as physical scarring and desensitisation to pain. Opportunities should be taken to advocate for the best possible supports for those who might be struggling.

Furthermore, it is important to strike a balance between having supportive environments where people can openly engage in discourse about self-harm and not inadvertently normalise these behaviours. To accomplish this, we must adhere to four principles aimed at cautious, thoughtful, and limited self-harm-related discourse (panel 8). 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 might 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.⁵⁴⁵ Such recommendations have substantial value and can indeed, over time, be used as a way to effect 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 (eg, from the social media industry,

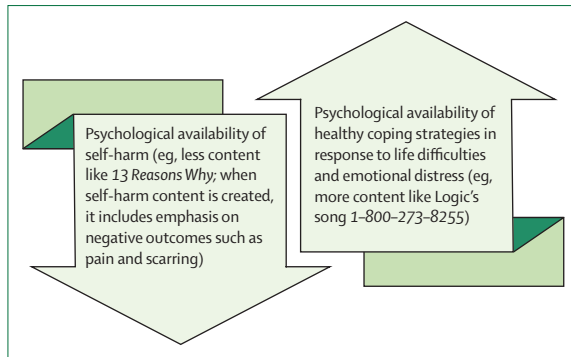


Figure 7: Overarching goals of communicating about self-harm

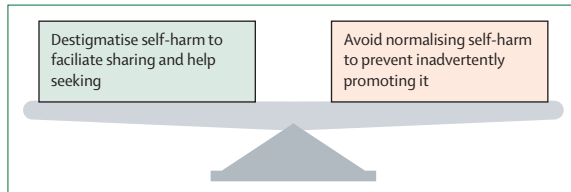


Figure 8: The careful balancing act of communicating about self-harm

schools and other educational settings, community organisations) on how to communicate about self-harm, in keeping with the four principles.

Recommendations for the media and wider society: 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 young people 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 its young people that distress is not a sign of weakness and that sharing is a sign of strength. This message will hopefully serve to lower barriers to help seeking, which can be substantial for people who self-harm given issues of stigma, if 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.⁵⁴⁶ There is increasing evidence that, when done thoughtfully, it is safe to talk to young people about self-harm,^{522,547} and we know that young people discuss these issues among themselves in their own environments. Nevertheless, for the reasons previously outlined, 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 (ie, educating non-expert school staff to identify and respond to those at risk and refer them to specialised services).^{548,549} This training remains important, but 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 reframing is starting to occur in mental health more broadly, with a number of school-based programmes designed to increase awareness of mental health difficulties and equip young people to seek and offer help (eg, Youth Aware of Mental Health, Teen Mental Health First Aid), but well-evaluated examples specific to self-harm are rare.⁵⁵⁰ 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.

Recommendations for the media and wider society: the online environment

Much peer-to-peer communication about self-harm occurs on social media,⁵⁵¹ 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.⁵⁵² However, the potential for negative effects also exist, with concerns that sharing distressing or explicit content might cause harm. High profile cases of young people engaging in self-harm as a result of online communication are frequently reported by media in HICs. 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.⁵⁵³ There are many others.⁵⁵⁴ Parents of young people are particularly alarmed by the potential for social media harms and want something done.⁵⁵⁵ In the UK, for example, parents have been instrumental in advocating for new legislation for the regulation of social media services.⁵⁵⁶ However, the issue is complex. Social media can be a source of support for those who self-harm and a way that people can seek help,⁵⁵⁷ recent meta-analyses of the association between social media and mental health report only weak effects.^{558,559}

The uptake of social media, combined with excessive parental restrictions on children’s freedom (helicopter parenting), is considered by some, including Haidt,⁵⁶⁰ to be the cause of the increase in self-harm among young people—possibly reflecting 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 effect 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?”⁵⁶¹

Currently, the evidence for Haidt’s proposition is uncertain. There is evidence that rates of anxiety, depression, and self-harm might have increased in successive generations of young people, although this claim is disputed by some and might not have happened globally.⁵⁶² However, whether smartphone and social media are the culprits is not clear.^{563–565} Longitudinal data reveal associations between levels of social media use and depression, but these associations are weak, and do not imply causality.⁵⁶⁶ Any explanation for the role of social media must also account for the greater rise of self-harm in young women. Haidt⁵⁶⁰ argues that girls engage in social media more commonly than boys and that the content of social media affects girls more, as they are subjected to more severe judgements, seek idealised bodies, are more likely to share emotions, and are subjected to greater harassment. To support the argument, a range of evidence is provided from both his collaborative work⁵⁶⁷ and that of others.⁵⁶⁸ However, the issue remains contentious. Researchers report that the association of social media with depression⁵⁶⁹ or self-harm⁵⁷⁰ is not mediated by gender.

Concern about the potential danger of social media is likely to ramp up with the widespread use of large language models and generative AI.^{571,572} Although AI algorithms have long been used in the generation of information on smartphones and social media platforms, large language models such as ChatGPT have made this technology accessible to anyone with a laptop or a smartphone. Generative AI can create information, not just share 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 could 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 aim requires strong partnerships between the self-harm prevention sector, young people, social media platforms, as well as social media influencers who might be particularly useful as a means of delivering information to the public at large.⁵³¹ 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.⁵⁷³ These include government regulation through frameworks, standards, policing and legal interventions, and regulation of companies who own the platforms.⁵⁷⁴ Mitigation of the risks associated with AI requires safeguards—where the constraints of what generative AI can and cannot do are built 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.^{528,575,576} An essential first step is to establish robust local register systems to monitor trends in self-harm,⁵⁷⁷ ideally with consistent indicators to allow comparisons over time and between settings. This approach 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.^{578,579} In addition, given the wider context of illegality in particular settings, additional privacy concerns need to be considered to ensure that the case registers do not inadvertently put people at risk of prosecution.

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. Experienced researchers will need to take an active role in supporting and mentoring researchers in settings where self-harm research capacity is scarce. The increased capacity within LMICs could also support policy makers to make evidence-based decisions that 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 last president of the International Association for Suicide Prevention (IASP). It is noteworthy that after more than 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 the industry. The high death toll associated with pesticide-related self-harm is almost exclusively an LMIC issue.²⁴⁷

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 neocolonial relationships within global health research.^{580,581} Researchers, especially those in HICs with greater voice, need to advocate for change and challenge structural barriers that hinder engagement and development (eg, hosting conferences solely in Europe and 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 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 engagement and uptake. 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 diverse literature to improve our understanding of the meanings, causes, and effects 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 self-harm 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 the people who self-harm 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 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 substantial effects on the health, wellbeing, and the survival of humanity. However, to date, self-harm has been neglected as a public health concern with adverse consequences for large populations across the world. Crucial 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 approaches from HICs 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 meaningful 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 (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 might facilitate public discourse about self-harm. These recommendations reflect the need for involvement from the whole of society. These include: schools, universities, technical companies, and businesses 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 codesign; and 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 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 this 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, SPe, 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 LMICs, which was co-written with LFC, DBM, JO, VP, SPa, AL, and TR. OJK led the drafting of content on individual risk factors and treatments, which was co-written with AL, MKN, 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.

Declaration of interests

PM reports grants from National Institute for Health and Care Research (NIHR), the Medical Research Council (MRC), Bristol & Weston Hospitals Charity, and The Cassell Hospital Charitable Trust; and salary support from the NIHR Applied Research Collaboration Southwest,

the NIHR Biomedical Research Centre at University Hospitals Bristol and Weston NHS Foundation, and Avon and Wiltshire Mental Health Partnership NHS Trust. NK reports grants from NIHR, Health Quality Improvement Partnership, and the Department of Health and Social Care; has received salary support from the Greater Manchester NIHR Patient Safety Research Collaboration, Mersey Care NHS Foundation Trust, and the University of Manchester; has chaired and contributed to committees for the National Institute for Health and Clinical Excellence (NICE) guidelines, including those on the management of self-harm; and is a member of the National Suicide Prevention Strategy Advisory Group (England). RCO is a trustee and science council member of MQ Mental Health Research, president of the International Association for Suicide Prevention, co-chair of the academic advisory group to the Scottish Government's National Suicide Prevention Leadership Group, and a board member of the International Academy of Suicide Research; was a member of the NICE guideline group for the management of self-harm; and reports grants from Medical Research Foundation, the Mindstep Foundation, Chief Scientist Office, MRC, Public Health Scotland, Scottish Government, NIHR, Shout 85258, Scottish Association for Mental Health, Zoetis Foundation, Jonathan's Voice, ADHD UK, and Barfil Charitable Trust. HC reports grants from the National Health and Medical Research Council (NHMRC), the Medical Research Future Fund, Paul Ramsay Foundation, and the Australian Government; is Scientia Professor at the University of New South Wales, supported by an NHMRC Elizabeth Blackburn Research Fellowship, and chief investigator on the NHMRC Centre for Research Excellence in Suicide Prevention; sits on the Million Minds Committee; and is a director of the Black Dog Institute Board and the Ramsay Health Care Research Foundation. MS declares salary support through academic scholar awards from Sunnybrook Health Sciences Centre and the University of Toronto. OJK is currently supported by a Research Foundation Flanders Senior Postdoctoral Fellowship; reports grants from Research Foundation Flanders and the King Baudouin Foundation; is co-chair of the International Association for Suicide Prevention Early Career Group, for which she receives complimentary student membership; is a former member of the Samaritans research ethics board; and has previously received travel grants and waived registration to present at conferences of the International Academy of Suicide Research. JP reports grants from NHMRC, the Medical Research Future Fund, Department of Health of the Australian Government, New South Wales Health, and the National Suicide Prevention Office. LFC is the vice president of the International Association for Suicide Prevention and is a permanent member of the Malaysian technical working group for suicide prevention; reports grants from the Centre of Pesticide Suicide Prevention at the University of Edinburgh; has received honorarium from Johnson & Johnson as a consultant and speaker; and, through her institution, has received access to the industry-sponsored medication sampling programme (compassionate patient programme) for clinical use for medication samples of esketamine (Johnson & Johnson), brexpiprazole (Lundbeck), Abilify Maintena (Lundbeck), and Trinza (Johnson & Johnson). DK is funded through the Elizabeth Blackwell Institute for Health Research at the University of Bristol, which is supported by the Wellcome Trust; has received grants from the Centre for Pesticide Suicide Prevention and the American Foundation for Suicide Prevention; and is a steering group member of the UK's National Suicide Prevention Alliance, and the Migration Health and Development Research Initiative. VP has consulted with Google and Modern Health (unrelated to the scope of this project). AC reports grants from Wellcome Trust, Leverhulme Trust, Economic and Social Research Council; has received funded consultancy from the Scottish Government and Alcohol Change UK; and is a member of the academic advisory group to the Scottish Government's National Suicide Prevention Leadership Group. SPe reports a 2021–2024 Vanier Canada Graduate Scholarship from the Canadian Institutes of Health Research. NS is a lived experience advisor to the Wellcome Trust, consumer academic at the University of Melbourne, lived experience lead at the Royal Children's Hospital, member of the Lived Experience Air Academy for University of Wollongong's Project Air, lived experience director for the Australian BPD Foundation, and associate at yLab (a division of the Foundation for Young Australians); reports previous employment with Orygen, and previous roles with the Youth Affairs Council of Victoria,

Victorian Department of Families, Fairness, and Housing, Victorian Department of Premier and Cabinet, and Moonee Valley City Council; funded travel through Black Dog Institute and International Association of Suicide Prevention; and a current research tie to Orygen. FST reports a grant from the Burdett Trust for Nursing and support from Abertay University. PSFY is a member of the advisory committee on mental health for the government of the Hong Kong Special Administrative Region. All other authors declare no competing interests.

Acknowledgments

Financial support for a Commissioners' meeting, held in Sydney on Nov 9–10, 2022, was provided by the Black Dog Institute. Funders were not involved in the writing of the manuscript or the decision to submit it for publication. The views expressed are those of the authors and not necessarily those of the NIHR, NICE, or the Department of Health and Social Care. We would like to thank Digital Science (<https://www.dimensions.ai>) for providing data on funding amounts received for mental health research globally. These data were sourced from Dimensions, an interlinked research information system provided by Digital Science. DeQuincy Meiffren-Lézine and David Gunnell kindly provided input on early drafts of the Commission. Philip Batterham recorded and summarised meeting proceedings. Lorin Williams, Amelia Hamilton, and Jo Hocking at the Black Dog Institute provided administrative support and helped coordinate online and face to face meetings. PM wishes to thank Alison Jones-Moran for comments made on an earlier draft of the Commission and for her encouragement and support throughout the writing process.

References

- 1 National Institute for Health and Clinical Excellence. Self-harm: assessment, management and preventing recurrence. Sept 7, 2022. <https://www.nice.org.uk/guidance/ng225> (accessed April 2, 2023).
- 2 Geulayov G, Casey D, Bale L, et al. Suicide following presentation to hospital for non-fatal self-harm in the Multicentre Study of Self-Harm: a long-term follow-up study. *Lancet Psychiatry* 2019; **6**: 1021–30.
- 3 Zetterqvist M. The DSM-5 diagnosis of nonsuicidal self-injury disorder: a review of the empirical literature. *Child Adolesc Psychiatry Ment Health* 2015; **9**: 31.
- 4 Kapur N, Cooper J, O'Connor RC, Hawton K. Non-suicidal self-injury v. attempted suicide: new diagnosis or false dichotomy? *Br J Psychiatry* 2013; **202**: 326–28.
- 5 WHO. Suicide and attempted suicide. 1974. <https://apps.who.int/iris/handle/10665/37822> (accessed July 11, 2023).
- 6 Chaney S. *Psyche on the skin: a history of self-harm*. London: Reaktion Books, 2017.
- 7 Millard C. Making the cut: the production of 'self-harm' in post-1945 Anglo-Saxon psychiatry. *Hist Human Sci* 2013; **26**: 126–50.
- 8 Hawton K, Bale L, Brand F, et al. Mortality in children and adolescents following presentation to hospital after non-fatal self-harm in the Multicentre Study of Self-Harm: a prospective observational cohort study. *Lancet Child Adolesc Health* 2020; **4**: 111–20.
- 9 Hawton K, Bergen H, Cooper J, et al. Suicide following self-harm: findings from the Multicentre Study of Self-Harm in England, 2000–2012. *J Affect Disord* 2015; **175**: 147–51.
- 10 Moran P, Coffey C, Romaniuk H, et al. The natural history of self-harm from adolescence to young adulthood: a population-based cohort study. *Lancet* 2012; **379**: 236–43.
- 11 Tan YM, Cheung G. Self-harm in adults: a comparison between the middle-aged and the elderly. *N Z Med J* 2019; **132**: 15–29.
- 12 Kelly BD. Are we finally making progress with suicide and self-harm? An overview of the history, epidemiology and evidence for prevention. *Ir J Psychol Med* 2018; **35**: 95–101.
- 13 Carter G, Page A, Large M, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guideline for the management of deliberate self-harm. *Aust N Z J Psychiatry* 2016; **50**: 939–1000.
- 14 Owens D, Horrocks J, House A. Fatal and non-fatal repetition of self-harm. Systematic review. *Br J Psychiatry* 2002; **181**: 193–99.
- 15 Witt KG, Hetrick SE, Rajaram G, et al. Interventions for self-harm in children and adolescents. *Cochrane Database Syst Rev* 2021; **3**: CD013667.

- 16 Witt KG, Hetrick SE, Rajaram G, et al. Pharmacological interventions for self-harm in adults. *Cochrane Database Syst Rev* 2021; 1: CD013669.
- 17 Witt KG, Hetrick SE, Rajaram G, et al. Psychosocial interventions for self-harm in adults. *Cochrane Database Syst Rev* 2021; 4: CD013668.
- 18 National Institute for Health and Clinical Excellence. Self-harm in over 8s: short-term management and prevention of recurrence. July 28, 2004. <https://www.nice.org.uk/guidance/cg16> (accessed April 2, 2023).
- 19 National Institute for Health and Clinical Excellence. Self-harm in over 8s: long-term management. Nov 23, 2011. <https://www.nice.org.uk/guidance/cg133> (accessed April 2, 2023).
- 20 Gracey M, King M. Indigenous health part 1: determinants and disease patterns. *Lancet* 2009; 374: 65–75.
- 21 Lawson-Te Aho K, Liu JH. Indigenous suicide and colonization: the legacy of violence and the necessity of self-determination. *Int J Confl Violence* 2010; 4: 124–33.
- 22 Woodley S, Hodge S, Jones K, Holding A. How individuals who self-harm manage their own risk—‘I cope because I self-harm, and I can cope with my self-harm’. *Psychol Rep* 2021; 124: 1998–2017.
- 23 Vos T, Lim SS, Abbafati C, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* 2020; 396: 1204–22.
- 24 Knipe D, Padmanathan P, Newton-Howes G, Chan LF, Kapur N. Suicide and self-harm. *Lancet* 2022; 399: 1903–16.
- 25 Lim K-S, Wong CH, McIntyre RS, et al. Global lifetime and 12-month prevalence of suicidal behavior, deliberate self-harm and non-suicidal self-injury in children and adolescents between 1989 and 2018: a meta-analysis. *Int J Environ Res Public Health* 2019; 16: 4581.
- 26 Kapur N, Steeg S, Moreton A. Self-harm: epidemiology and risk factors. In: Geddes JR, Andreasen NC, Goodwin GM, eds. *New Oxford textbook of psychiatry*, 3rd edn. Oxford: Oxford University Press, 2020:1289–95.
- 27 Morgan C, Webb RT, Carr MJ, et al. Incidence, clinical management, and mortality risk following self harm among children and adolescents: cohort study in primary care. *BMJ* 2017; 359: j4351.
- 28 Borschmann R, Kinner SA. Responding to the rising prevalence of self-harm. *Lancet Psychiatry* 2019; 6: 548–49.
- 29 Griffin E, McMahon E, McNicholas F, Corcoran P, Perry JJ, Arensman E. Increasing rates of self-harm among children, adolescents and young adults: a 10-year national registry study 2007–2016. *Soc Psychiatry Psychiatr Epidemiol* 2018; 53: 663–71.
- 30 McManus S, Gunnell D, Cooper C, et al. Prevalence of non-suicidal self-harm and service contact in England, 2000–14: repeated cross-sectional surveys of the general population. *Lancet Psychiatry* 2019; 6: 573–81.
- 31 Fleming T, Tiatia-Seath J, Peiris-John R, et al. Youth19 rangatahi smart survey initial findings: hauora hinengaro/emotional and mental health. 2020. <https://static1.squarespace.com/static/5bdbb75ccef37259122e59aa/t/5f338e4cfb539d2246e9e5ce/1597214306382/Youth19+Mental+Health+Report.pdf> (accessed April 2, 2023).
- 32 Tørmøen AJ, Myhre M, Walby FA, Grøholt B, Rossow I. Change in prevalence of self-harm from 2002 to 2018 among Norwegian adolescents. *Eur J Public Health* 2020; 30: 688–92.
- 33 Ammerman BA, Jacobucci R, Kleiman EM, Uyeji LL, McCloskey MS. The relationship between nonsuicidal self-injury age of onset and severity of self-harm. *Suicide Life Threat Behav* 2018; 48: 31–37.
- 34 Rowe SL, French RS, Henderson C, Ougrin D, Slade M, Moran P. Help-seeking behaviour and adolescent self-harm: a systematic review. *Aust N Z J Psychiatry* 2014; 48: 1083–95.
- 35 Salaheddin K, Mason B. Identifying barriers to mental health help-seeking among young adults in the UK: a cross-sectional survey. *Br J Gen Pract* 2016; 66: e686–92.
- 36 Owens C, Hansford L, Sharkey S, Ford T. Needs and fears of young people presenting at accident and emergency department following an act of self-harm: secondary analysis of qualitative data. *Br J Psychiatry* 2016; 208: 286–91.
- 37 Carroll R, Metcalfe C, Gunnell D. Hospital presenting self-harm and risk of fatal and non-fatal repetition: systematic review and meta-analysis. *PLoS One* 2014; 9: e89944.
- 38 Kapur N, Cooper J, King-Hele S, et al. The repetition of suicidal behavior: a multicenter cohort study. *J Clin Psychiatry* 2006; 67: 1599–609.
- 39 Witt K, Milner A, Spittal MJ, et al. Population attributable risk of factors associated with the repetition of self-harm behaviour in young people presenting to clinical services: a systematic review and meta-analysis. *Eur Child Adolesc Psychiatry* 2019; 28: 5–18.
- 40 Geulayov G, Casey D, McDonald KC, et al. Incidence of suicide, hospital-presenting non-fatal self-harm, and community-occurring non-fatal self-harm in adolescents in England (the iceberg model of self-harm): a retrospective study. *Lancet Psychiatry* 2018; 5: 167–74.
- 41 Madge N, Hewitt A, Hawton K, et al. Deliberate self-harm within an international community sample of young people: comparative findings from the child & adolescent self-harm in Europe (CASE) Study. *J Child Psychol Psychiatry* 2008; 49: 667–77.
- 42 McMahon EM, Keeley H, Cannon M, et al. The iceberg of suicide and self-harm in Irish adolescents: a population-based study. *Soc Psychiatry Psychiatr Epidemiol* 2014; 49: 1929–35.
- 43 Reichl C, Kaess M. Self-harm in the context of borderline personality disorder. *Curr Opin Psychol* 2021; 37: 139–44.
- 44 Hawton K, Saunders K, Topiwala A, Haw C. Psychiatric disorders in patients presenting to hospital following self-harm: a systematic review. *J Affect Disord* 2013; 151: 821–30.
- 45 Warne N, Heron J, Mars B, et al. Comorbidity of self-harm and disordered eating in young people: evidence from a UK population-based cohort. *J Affect Disord* 2021; 282: 386–90.
- 46 King M, Semlyen J, Tai SS, et al. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry* 2008; 8: 70.
- 47 Quarshie EN-B, Waterman MG, House AO. Prevalence of self-harm among lesbian, gay, bisexual, and transgender adolescents: a comparison of personal and social adversity with a heterosexual sample in Ghana. *BMC Res Notes* 2020; 13: 271.
- 48 Cooper J, Murphy E, Webb R, et al. Ethnic differences in self-harm, rates, characteristics and service provision: three-city cohort study. *Br J Psychiatry* 2010; 197: 212–18.
- 49 Kachadourian LK, Nichter B, Herzog S, Norman SB, Sullivan T, Pietrzak RH. Non-suicidal self-injury in US military veterans: results from the national health and resilience in veterans study. *Clin Psychol Psychother* 2022; 29: 941–49.
- 50 Favril L, Yu R, Hawton K, Fazel S. Risk factors for self-harm in prison: a systematic review and meta-analysis. *Lancet Psychiatry* 2020; 7: 682–91.
- 51 Donath C, Bergmann MC, Kliem S, Hillemacher T, Baier D. Epidemiology of suicidal ideation, suicide attempts, and direct self-injurious behavior in adolescents with a migration background: a representative study. *BMC Pediatr* 2019; 19: 45.
- 52 Hill K, Dallos R. Young people’s stories of self-harm: a narrative study. *Clin Child Psychol Psychiatry* 2012; 17: 459–75.
- 53 Pembroke L. Self-harm: perspectives from personal experience. October, 1994. <http://studymore.org.uk/shpfe.pdf> (accessed April 2, 2023).
- 54 Simopoulou Z, Chandler A. Self-harm as an attempt at self-care. *Eur J Qual Res Psychother* 2020; 10: 110–20.
- 55 Edmondson AJ, Brennan CA, House AO. Non-suicidal reasons for self-harm: a systematic review of self-reported accounts. *J Affect Disord* 2016; 191: 109–17.
- 56 Steggs P. Making sense of self-harm: the cultural meaning and social context of nonsuicidal self-injury. Basingstoke: Palgrave-Macmillan, 2015.
- 57 Steggs P, Lawler S, Graham R. The social life of self-injury: exploring the communicative dimension of a very personal practice. *Sociol Health Illn* 2020; 42: 157–70.
- 58 Brossard B. Why do we hurt ourselves? Understanding self-harm in social life. Bloomington, IN: Indiana University Press, 2018.
- 59 Chandler A. Self-injury, medicine and society: authentic bodies. London: Palgrave Macmillan, 2016.
- 60 McDermott E, Roen K. Queer youth, suicide and self-harm: troubled subjects, troubling norms. Basingstoke: Palgrave-Macmillan, 2016.
- 61 Heney V, Poleykett B. The impossibility of engaged research: complicity and accountability between researchers, ‘publics’ and institutions. *Sociol Health Illn* 2022; 44 (suppl 1): 179–94.

- 62 Gunnarsson NV. The scarred body: a personal reflection of self-injury scars. *Qual Soc Work* 2022; **21**: 37–52.
- 63 Stirling FJ. Journeying to visibility: an autoethnography of self-harm scars in the therapy room. *Psychother Politics Int* 2020; **18**: e1537.
- 64 Stirling FJ, Chandler A. Dangerous arms and everyday activism: a dialogue between two researchers with lived experience of self-harm. *Int Rev Qual Res* 2021; **14**: 155–70.
- 65 Rezaie L, Hosseini SA, Rassafiani M, Najafi F, Shakeri J, Khankeh HR. Why self-immolation? A qualitative exploration of the motives for attempting suicide by self-immolation. *Burns* 2014; **40**: 319–27.
- 66 McShane T. *Blades, blood and bandages: the experiences of people who self-injure*. London: Palgrave-Macmillan, 2012.
- 67 Steggs P, Lawler S, Graham R. The personal is social: four sociological approaches to nonsuicidal self-injury. *Sociol Compass* 2022; **16**: e12970.
- 68 Polling C, Woodhead C, Harwood H, Hotopf M, Hatch SL. “There is so much more for us to lose if we were to kill ourselves”: understanding paradoxically low rates of self-harm in a socioeconomically disadvantaged community in London. *Qual Health Res* 2021; **31**: 122–36.
- 69 Chandler A, King C, Burton C, Platt S. The social life of self-harm in general practice. *Soc Theory Health* 2020; **18**: 240–56.
- 70 Redley M. The clinical assessment of patients admitted to hospital following an episode of self-harm: a qualitative study. *Sociol Health Illn* 2010; **32**: 470–85.
- 71 Inckle K. Inequality, distress and harm-reduction: a social justice approach to self-injury. *Soc Theory Health* 2020; **18**: 224–39.
- 72 Redikopp S. Depathologizing self-harm: the politics of survival. In: Slowey G, Morrow M, Jiang C, Adam S, Davies M, Taman L, eds. *Canada Watch summer 2021: critical perspectives on mental health/Mad Studies*. Toronto, ON: The Robarts Centre for Canadian Studies, 2021: 21–22.
- 73 Institute for Health Metrics and Evaluation. *Global Burden of Disease Study 2019 results*. 2021. <http://ghdx.healthdata.org/gbd-results-tool> (accessed April 2, 2023).
- 74 Nock MK. Actions speak louder than words: an elaborated theoretical model of the social functions of self-injury and other harmful behaviors. *Appl Prev Psychol* 2008; **12**: 159–68.
- 75 Eddleston M, Phillips MR. Self poisoning with pesticides. *BMJ* 2004; **328**: 42–44.
- 76 Eddleston M, Karunaratne A, Weerakoon M, et al. Choice of poison for intentional self-poisoning in rural Sri Lanka. *Clin Toxicol* 2006; **44**: 283–86.
- 77 Jiang C, Li X, Phillips MR, Xu Y. Matched case-control study of medically serious attempted suicides in rural China. *Shanghai jingshen Yixue* 2013; **25**: 22–31.
- 78 Knipe D, Metcalfe C, Hawton K, et al. Risk of suicide and repeat self-harm after hospital attendance for non-fatal self-harm in Sri Lanka: a cohort study. *Lancet Psychiatry* 2019; **6**: 659–66.
- 79 WHO. *Suicide in the world: global health estimates*. 2019. <https://apps.who.int/iris/handle/10665/326948> (accessed April 2, 2023).
- 80 Dandona R, Kumar GA, Dhaliwal RS, et al. Gender differentials and state variations in suicide deaths in India: the Global Burden of Disease Study 1990–2016. *Lancet Public Health* 2018; **3**: e478–89.
- 81 Naghavi M. Global, regional, and national burden of suicide mortality 1990 to 2016: systematic analysis for the Global Burden of Disease Study 2016. *BMJ* 2019; **364**: 194.
- 82 Canetto SS. Suicidal behaviors among Muslim women. Patterns, pathways, meanings, and prevention. *Crisis* 2015; **36**: 447–58.
- 83 Kizza D, Loa Knizek B, Kinyanda E, Hjelmeland H. An escape from agony: a qualitative psychological autopsy study of women’s suicide in a post-conflict northern Uganda. *Int J Qual Stud Health Well-being* 2012; **7**: 1–13.
- 84 Mars B, Burrows S, Hjelmeland H, Gunnell D. Suicidal behaviour across the African continent: a review of the literature. *BMC Public Health* 2014; **14**: 606.
- 85 Andoh-Arthur J, Knizek BL, Osafo J, Hjelmeland H. Suicide among men in Ghana: the burden of masculinity. *Death Stud* 2018; **42**: 658–66.
- 86 Kizza D, Knizek BL, Kinyanda E, Hjelmeland H. Men in despair: a qualitative psychological autopsy study of suicide in northern Uganda. *Transcult Psychiatry* 2012; **49**: 696–717.
- 87 Lorant V, Kunst AE, Huisman M, Bopp M, Mackenbach J. A European comparative study of marital status and socio-economic inequalities in suicide. *Soc Sci Med* 2005; **60**: 2431–41.
- 88 Patel V, Ramasundarahettige C, Vijayakumar L, et al. Suicide mortality in India: a nationally representative survey. *Lancet* 2012; **379**: 2343–51.
- 89 Zhang J. Marriage and suicide among Chinese rural young women. *Soc Forces* 2010; **89**: 311–26.
- 90 Kyung-Sook W, SangSoo S, Sangjin S, Young-Jeon S. Marital status integration and suicide: a meta-analysis and meta-regression. *Soc Sci Med* 2018; **197**: 116–26.
- 91 Snowdon J, Phillips J, Zhong B, Yamauchi T, Chiu HFK, Conwell Y. Changes in age patterns of suicide in Australia, the United States, Japan and Hong Kong. *J Affect Disord* 2017; **211**: 12–19.
- 92 Wang C-W, Chan CLW, Yip PSF. Suicide rates in China from 2002 to 2011: an update. *Soc Psychiatry Psychiatr Epidemiol* 2014; **49**: 929–41.
- 93 Snowdon J. Indian suicide data: what do they mean? *Indian J Med Res* 2019; **150**: 315–20.
- 94 Pillai A, Andrews T, Patel V. Violence, psychological distress and the risk of suicidal behaviour in young people in India. *Int J Epidemiol* 2009; **38**: 459–69.
- 95 Bertolote JM, Fleischmann A, De Leo D, Wasserman D. Psychiatric diagnoses and suicide: revisiting the evidence. *Crisis* 2004; **25**: 147–55.
- 96 Knipe D, Williams AJ, Hannam-Swain S, et al. Psychiatric morbidity and suicidal behaviour in low- and middle-income countries: a systematic review and meta-analysis. *PLoS Med* 2019; **16**: e1002905.
- 97 Machado DB, Williamson E, Pescarini JM, et al. Relationship between the Bolsa Familia national cash transfer programme and suicide incidence in Brazil: a quasi-experimental study. *PLoS Med* 2022; **19**: e1004000.
- 98 Whitlock J, Muehlenkamp J, Eckenrode J, et al. Nonsuicidal self-injury as a gateway to suicide in young adults. *J Adolesc Health* 2013; **52**: 486–92.
- 99 Li X, Xu Y, Wang Y, et al. Characteristics of serious suicide attempts treated in general hospitals. *Chin Ment Health J* 2002; **16**: 681–84.
- 100 Pearson V, Phillips MR, He F, Ji H. Attempted suicide among young rural women in the People’s Republic of China: possibilities for prevention. *Suicide Life Threat Behav* 2002; **32**: 359–69.
- 101 Värnik A, Kölves K, van der Feltz-Cornelis CM, et al. Suicide methods in Europe: a gender-specific analysis of countries participating in the “European Alliance Against Depression”. *J Epidemiol Community Health* 2008; **62**: 545–51.
- 102 Richardson EG, Hemenway D. Homicide, suicide, and unintentional firearm fatality: comparing the United States with other high-income countries, 2003. *J Trauma* 2011; **70**: 238–43.
- 103 Aggarwal S, Patton G, Reavley N, Sreenivasan SA, Berk M. Youth self-harm in low- and middle-income countries: systematic review of the risk and protective factors. *Int J Soc Psychiatry* 2017; **63**: 359–75.
- 104 Knipe DW, Chang S-S, Dawson A, et al. Suicide prevention through means restriction: impact of the 2008–2011 pesticide restrictions on suicide in Sri Lanka. *PLoS One* 2017; **12**: e0172893.
- 105 Kölves K, McDonough M, Crompton D, de Leo D. Choice of a suicide method: trends and characteristics. *Psychiatry Res* 2018; **260**: 67–74.
- 106 Snowdon J. Differences between patterns of suicide in East Asia and the West. The importance of sociocultural factors. *Asian J Psychiatr* 2018; **37**: 106–11.
- 107 Buckley NA, Fahim M, Raubenheimer J, et al. Case fatality of agricultural pesticides after self-poisoning in Sri Lanka: a prospective cohort study. *Lancet Glob Health* 2021; **9**: e854–62.
- 108 Rajapakse T, Russell AE, Kidger J, et al. Childhood adversity and self-poisoning: a hospital case control study in Sri Lanka. *PLoS One* 2020; **15**: e0242437.
- 109 Fekadu A, Demissie M, Birhane R, et al. Under detection of depression in primary care settings in low and middle-income countries: a systematic review and meta-analysis. *Syst Rev* 2022; **11**: 21.
- 110 Gulland A. Drop in suicide rate in China fuels global fall in deaths. *The Telegraph*, Feb 7, 2019. <https://www.telegraph.co.uk/global-health/climate-and-people/drop-suicide-rate-china-fuels-global-fall-deaths/> (accessed April 2, 2023).

- 111 Yip PSF, Liu KY, Hu J, Song XM. Suicide rates in China during a decade of rapid social changes. *Soc Psychiatry Psychiatr Epidemiol* 2005; **40**: 792–98.
- 112 The World Bank. Kerala: indicators at a glance. 2017. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/339981504162153632/kerala-indicators-at-a-glance> (accessed April 2, 2023).
- 113 National Crime Records Bureau. Accidental deaths & suicides in India 2019. Government of India, 2019. <https://ncrb.gov.in/en/accidental-deaths-suicides-india-2019> (accessed April 2, 2023).
- 114 Pollock NJ, Naicker K, Loro A, Mulay S, Colman I. Global incidence of suicide among Indigenous peoples: a systematic review. *BMC Med* 2018; **16**: 145.
- 115 Chan S, Denny S, Fleming T, Fortune S, Peiris-John R, Dyson B. Exposure to suicide behaviour and individual risk of self-harm: findings from a nationally representative New Zealand high school survey. *Aust N Z J Psychiatry* 2018; **52**: 349–56.
- 116 Ministry of Health NZ. Every life matters – he tapu te oranga o ia tangata: suicide prevention strategy 2019–2029 and suicide prevention action plan 2019–2024 for Aotearoa New Zealand. 2019. <https://www.health.govt.nz/system/files/documents/publications/suicide-prevention-strategy-2019-2029-and-plan-2019-2024-v2.pdf> (accessed April 2, 2023).
- 117 Australian Institute of Health and Welfare. Intentional self-harm hospitalisations & Indigenous Australians. 2022. <https://www.aihw.gov.au/suicide-self-harm-monitoring/data/populations-age-groups/intentional-self-harm-hospitalisations-indigenous> (accessed April 2, 2023).
- 118 Rouen C, Clough AR, West C. Non-fatal deliberate self-harm in three remote Indigenous communities in far North Queensland, Australia. *Crisis* 2019; **40**: 422–28.
- 119 Australian Institute of Health and Welfare. Indigenous injury deaths: 2011–12 to 2015–16. 2020. <https://www.aihw.gov.au/reports/injury/indigenous-injury-deaths-2011-12-to-2015-16/summary> (accessed April 2, 2023).
- 120 Newton AS, Tsang CI, Rosychuk RJ. Emergency health care use among sociodemographic groups of children presenting to emergency departments for self-harm in Alberta. *CJEM* 2015; **17**: 497–506.
- 121 Kumar MB, Tjepkema M. Suicide among First Nations people, Métis and Inuit (2011–2016): findings from the 2011 Canadian census health and environment cohort (CanCHEC). 2019. <https://www150.statcan.gc.ca/n1/pub/99-011-x/99-011-x2019001-eng.htm> (accessed April 2, 2023).
- 122 Monto MA, McRee N, Deryck FS. Nonsuicidal self-injury among a representative sample of US adolescents, 2015. *Am J Public Health* 2018; **108**: 1042–48.
- 123 Cwik MF, Barlow A, Tingey L, Larzelere-Hinton F, Goklish N, Walkup JT. Nonsuicidal self-injury in an American Indian reservation community: results from the White Mountain Apache surveillance system, 2007–2008. *J Am Acad Child Adolesc Psychiatry* 2011; **50**: 860–69.
- 124 Centers for Disease Control and Prevention. Wide ranging online data for epidemiological research (WONDER): underlying cause of death, 1999–2020. 2021. <https://wonder.cdc.gov/ucd-icd10.html> (accessed April 2, 2023).
- 125 Bjerregaard P, Larsen CVL. Time trend by region of suicides and suicidal thoughts among Greenland Inuit. *Int J Circumpolar Health* 2015; **74**: 26053.
- 126 Eckhoff C, Sørsvold MT, Kvernmo S. Adolescent self-harm and suicidal behavior and young adult outcomes in indigenous and non-indigenous people. *Eur Child Adolesc Psychiatry* 2020; **29**: 917–27.
- 127 Silviken A. Prevalence of suicidal behaviour among indigenous Sami in northern Norway. *Int J Circumpolar Health* 2009; **68**: 204–11.
- 128 Vecchio EA, Dickson M, Zhang Y. Indigenous mental health and climate change: a systematic literature review. *J Clim Change Health* 2022; **6**: 100121.
- 129 Fitzgerald J, Curtis C. Non-suicidal self-injury in a New Zealand student population: demographic and self-harm characteristics. *N Z J Psychol* 2017; **46**: 156–63.
- 130 Fogarty W, Bulloch H, McDonnell S, Davis M. Deficit discourse and Indigenous health: how narrative framings of Aboriginal and Torres Strait Islander people are reproduced in policy. 2018. <https://www.lowitja.org.au/page/services/resources/Cultural-and-social-determinants/racism/Deficit-Discourse-and-Indigenous-Health> (accessed April 2, 2023).
- 131 Kukutai T, Taylor J. Indigenous data sovereignty: toward an agenda. Canberra, ACT: ANU Press, 2016.
- 132 Black EB, Kisely S. A systematic review: non-suicidal self-injury in Australia and New Zealand's Indigenous populations. *Aust Psychol* 2018; **53**: 3–12.
- 133 Dickson JM, Cruise K, McCall CA, Taylor PJ. A systematic review of the antecedents and prevalence of suicide, self-harm and suicide ideation in Australian Aboriginal and Torres Strait Islander youth. *Int J Environ Res Public Health* 2019; **16**: 3154.
- 134 Gratz KL. Risk factors for and functions of deliberate self-harm: an empirical and conceptual review. *Clin Psychol* 2003; **10**: 192–205.
- 135 McPhee R, Carlin E, Seear K, et al. Unacceptably high: an audit of Kimberley self-harm data 2014–2018. *Australas Psychiatry* 2022; **30**: 70–73.
- 136 Referendum Council. Uluru Statement from the Heart. 2017. <https://ulurustatement.org/the-statement/> (accessed April 2, 2023).
- 137 Brave Heart MYH, DeBruyn LM. The American Indian Holocaust: healing historical unresolved grief. *Am Indian Alsk Native Ment Health Res* 1998; **8**: 56–78.
- 138 Hunter E, Milroy H. Aboriginal and Torres Strait Islander suicide in context. *Arch Suicide Res* 2006; **10**: 141–57.
- 139 Kingi T, Russell L, Ashby W. Mā te mātau, ka ora: the use of traditional Indigenous knowledge to support contemporary rangatahi Māori who self-injure. *N Z J Psychol* 2017; **46**: 137–45.
- 140 Royal Commission on Aboriginal Peoples. Choosing life: special report on suicide among Aboriginal people. Ottawa, ON: Canada Communication Group Publishing, 1995.
- 141 Duran E, Firehammer J, Gonzalez J. Liberation psychology as the path toward healing cultural soul wounds. *J Couns Dev* 2008; **86**: 288–95.
- 142 Lawson-Te Aho K. Whāia te mauriora - in pursuit of healing: theorising connections between soul healing, tribal self-determination and Māori suicide prevention in Aotearoa/New Zealand. PhD thesis, Victoria University of Wellington, 2013.
- 143 Durie M. Indigenous suicide: the Turamarama declaration. *J Indig Wellbeing* 2017; **2**: 5.
- 144 Lawson-Te Aho KR. The case for re-framing Māori suicide prevention research in Aotearoa/New Zealand: applying lessons from Indigenous suicide prevention research. *J Indig Res* 2017; **6**: 1.
- 145 Brave Heart MYH. The return to the sacred path: healing the historical trauma and historical unresolved grief response among the lakota through a psychoeducational group intervention. *Smith Coll Stud Soc Work* 1998; **68**: 287–305.
- 146 Durie MH. Mauri ora: the dynamics of Māori health. Auckland: Oxford University Press, 2001.
- 147 Schure M, Allen S, Trotter C, et al. Daasachchuchik: a trauma-informed approach to developing a chronic illness self-management program for the Apsáalooke people. *J Health Care Poor Underserved* 2020; **31**: 992–1006.
- 148 Green LW. Making research relevant: if it is an evidence-based practice, where's the practice-based evidence? *Fam Pract* 2008; **25** (suppl 1): i20–24.
- 149 Gooda M, Dudgeon P. The Elders' report into preventing Indigenous self-harm and youth suicide. 2014. <https://apo.org.au/node/40060> (accessed April 2, 2023).
- 150 Hunter E, Harvey D. Indigenous suicide in Australia, New Zealand, Canada, and the United States. *Emerg Med* 2002; **14**: 14–23.
- 151 Barnes R, Josefowitz N. Indian residential schools in Canada: persistent impacts on Aboriginal students' psychological development and functioning. *Can Psychol* 2019; **60**: 65–76.
- 152 Walls ML, Whitbeck LB. The intergenerational effects of relocation policies on Indigenous families. *J Fam Issues* 2012; **33**: 1272–93.
- 153 Australian Institute of Health and Welfare. Aboriginal and Torres Strait Islander stolen generations and descendants: numbers, demographic characteristics and selected outcomes. 2018. <https://www.aihw.gov.au/reports/indigenous-australians/stolen-generations-descendants/overview> (accessed April 2, 2023).
- 154 Arawhenua NP. Te mauri the life force: rangatahi suicide report: te pūrongo mō te mate whakamomori o te rangatahi. March, 2020. <https://www.hqsc.govt.nz/resources/resource-library/te-mauri-the-life-force-i-rangatahi-suicide-report-i-te-purongo-mo-te-mate-whakamomori-o-te-rangatahi/> (accessed April 2, 2023).
- 155 Moewaka Barnes H, McCreaner T. Colonisation, hauora and whenua in Aotearoa. *J R Soc N Z* 2019; **49** (suppl 1): 19–33.

- 156 Paradies Y, Ben J, Denson N, et al. Racism as a determinant of health: a systematic review and meta-analysis. *PLoS One* 2015; **10**: e0138511.
- 157 Comas-Díaz L, Hall GN, Neville HA. Racial trauma: theory, research, and healing: introduction to the special issue. *Am Psychol* 2019; **74**: 1–5.
- 158 Heart MY, Chase J, Elkins J, Altschul DB. Historical trauma among Indigenous peoples of the Americas: concepts, research, and clinical considerations. *J Psychoactive Drugs* 2011; **43**: 282–90.
- 159 Kingston L. The destruction of identity: cultural genocide and Indigenous peoples. *J Hum Rights* 2015; **14**: 63–83.
- 160 Maguire GJ. A genocide by any other name: cultural genocide in the context of Indigenous peoples and the role of international law. *Strathclyde Law Review* 2018; **4**: 108–27.
- 161 Menzies K. Understanding the Australian Aboriginal experience of collective, historical and intergenerational trauma. *Int Soc Work* 2019; **62**: 1522–34.
- 162 Czyz EK, Glenn CR, Arango A, Koo HJ, King CA. Short-term associations between nonsuicidal and suicidal thoughts and behaviors: a daily diary study with high-risk adolescents. *J Affect Disord* 2021; **292**: 337–44.
- 163 Gillies D, Christou MA, Dixon AC, et al. Prevalence and characteristics of self-harm in adolescents: meta-analyses of community-based studies 1990–2015. *J Am Acad Child Adolesc Psychiatry* 2018; **57**: 733–41.
- 164 Gratz KL. Targeting emotion dysregulation in the treatment of self-injury. *J Clin Psychol* 2007; **63**: 1091–103.
- 165 Hooley JM, Franklin JC. Why do people hurt themselves? A new conceptual model of nonsuicidal self-injury. *Clin Psychol Sci* 2017; **6**: 428–51.
- 166 O'Connor RC, Rasmussen S, Miles J, Hawton K. Self-harm in adolescents: self-report survey in schools in Scotland. *Br J Psychiatry* 2009; **194**: 68–72.
- 167 Rasmussen S, Hawton K, Philpott-Morgan S, O'Connor RC. Why do adolescents self-harm? *Crisis* 2016; **37**: 176–83.
- 168 Taylor PJ, Jomar K, Dhingra K, Forrester R, Shahmalak U, Dickson JM. A meta-analysis of the prevalence of different functions of non-suicidal self-injury. *J Affect Disord* 2018; **227**: 759–69.
- 169 Hjelmeland H. Cultural context is crucial in suicide research and prevention. *Crisis* 2011; **32**: 61–64.
- 170 Hochhauser S, Rao S, England-Kennedy E, Roy S. Why social justice matters: a context for suicide prevention efforts. *Int J Equity Health* 2020; **19**: 76.
- 171 Wolff JC, Thompson E, Thomas SA, et al. Emotion dysregulation and non-suicidal self-injury: a systematic review and meta-analysis. *Eur Psychiatry* 2019; **59**: 25–36.
- 172 Kiekens G, Hasking P, Nock MK, et al. Fluctuations in affective states and self-efficacy to resist non-suicidal self-injury as real-time predictors of non-suicidal self-injurious thoughts and behaviors. *Front Psychiatry* 2020; **11**: 214.
- 173 Gyori D, Balazs J. Nonsuicidal self-injury and perfectionism: a systematic review. *Front Psychiatry* 2021; **12**: 691147.
- 174 Zerkowicz RL, Cole DA. Self-criticism as a transdiagnostic process in nonsuicidal self-injury and disordered eating: systematic review and meta-analysis. *Suicide Life Threat Behav* 2019; **49**: 310–27.
- 175 Dillon KH, Glenn JJ, Dennis PA, et al. Anger precedes and predicts nonsuicidal self-injury in veterans: findings from an ecological momentary assessment study. *J Psychiatr Res* 2021; **135**: 47–51.
- 176 Keyworth C, Quinlivan L, Leather JZ, O'Connor RC, Armitage CJ. The association between COVID-19-related fear and reported self-harm in a national survey of people with a lifetime history of self-harm. *BMC Psychiatry* 2022; **22**: 68.
- 177 Coppersmith DDL, Nada-Raja S, Beautrais AL. Non-suicidal self-injury and suicide attempts in a New Zealand birth cohort. *J Affect Disord* 2017; **221**: 89–96.
- 178 Russell AE, Heron J, Gunnell D, et al. Pathways between early-life adversity and adolescent self-harm: the mediating role of inflammation in the Avon longitudinal study of parents and children. *J Child Psychol Psychiatry* 2019; **60**: 1094–103.
- 179 Dawkins J, Hasking P, Boyes M. Knowledge of parental nonsuicidal self-injury in young people who self-injure: the mediating role of outcome expectancies. *J Fam Stud* 2021; **27**: 479–90.
- 180 Hasking P, Rose A. A preliminary application of social cognitive theory to nonsuicidal self-injury. *J Youth Adolesc* 2016; **45**: 1560–74.
- 181 Kiekens G, Hasking P, Claes L, et al. Predicting the incidence of non-suicidal self-injury in college students. *Eur Psychiatry* 2019; **59**: 44–51.
- 182 Mykkestad I, Straiton M. The relationship between self-harm and bullying behaviour: results from a population based study of adolescents. *BMC Public Health* 2021; **21**: 524.
- 183 van Geel M, Goemans A, Vedder P. A meta-analysis on the relation between peer victimization and adolescent non-suicidal self-injury. *Psychiatry Res* 2015; **230**: 364–68.
- 184 Fortune S, Cottrell D, Fife S. Family factors associated with adolescent self-harm: a narrative review. *J Fam Ther* 2016; **38**: 226–56.
- 185 Stallard P, Spears M, Montgomery AA, Phillips R, Sayal K. Self-harm in young adolescents (12–16 years): onset and short-term continuation in a community sample. *BMC Psychiatry* 2013; **13**: 328.
- 186 Victor SE, Hipwell AE, Stepp SD, Scott LN. Parent and peer relationships as longitudinal predictors of adolescent non-suicidal self-injury onset. *Child Adolesc Psychiatry Ment Health* 2019; **13**: 1.
- 187 Coppersmith DDL, Kleiman EM, Glenn CR, Millner AJ, Nock MK. The dynamics of social support among suicide attempters: a smartphone-based daily diary study. *Behav Res Ther* 2019; **120**: 103348.
- 188 Townsend E, Ness J, Waters K, et al. Life problems in children and adolescents who self-harm: findings from the Multicentre Study of Self-Harm in England. *Child Adolesc Ment Health* 2022; **27**: 352–60.
- 189 McAuliffe C, Corcoran P, Keeley HS, et al. Problem-solving ability and repetition of deliberate self-harm: a multicentre study. *Psychol Med* 2006; **36**: 45–55.
- 190 Kirtley OJ, O'Carroll RE, O'Connor RC. Pain and self-harm: a systematic review. *J Affect Disord* 2016; **203**: 347–63.
- 191 Koenig J, Thayer JF, Kaess M. A meta-analysis on pain sensitivity in self-injury. *Psychol Med* 2016; **46**: 1597–612.
- 192 Fox KR, Franklin JC, Ribeiro JD, Kleiman EM, Bentley KH, Nock MK. Meta-analysis of risk factors for nonsuicidal self-injury. *Clin Psychol Rev* 2015; **42**: 156–67.
- 193 Townsend E, Wadman R, Sayal K, et al. Uncovering key patterns in self-harm in adolescents: sequence analysis using the card sort task for self-harm (CaTS). *J Affect Disord* 2016; **206**: 161–68.
- 194 Kiekens G, Hasking P, Bruffaerts R, et al. Non-suicidal self-injury among first-year college students and its association with mental disorders: results from the world mental health international college student (WMH-ICS) initiative. *Psychol Med* 2023; **53**: 875–86.
- 195 Hysing M, Sivertsen B, Stormark KM, O'Connor RC. Sleep problems and self-harm in adolescence. *Br J Psychiatry* 2015; **207**: 306–12.
- 196 O'Connor RC, Rasmussen S, Hawton K. Distinguishing adolescents who think about self-harm from those who engage in self-harm. *Br J Psychiatry* 2012; **200**: 330–35.
- 197 Arendt F, Scherr S, Romer D. Effects of exposure to self-harm on social media: evidence from a two-wave panel study among young adults. *New Media Soc* 2019; **21**: 2422–42.
- 198 Marchant A, Hawton K, Stewart A, et al. A systematic review of the relationship between internet use, self-harm and suicidal behaviour in young people: the good, the bad and the unknown. *PLoS One* 2017; **12**: e0181722.
- 199 Mars B, Heron J, Biddle L, et al. Exposure to, and searching for, information about suicide and self-harm on the internet: prevalence and predictors in a population based cohort of young adults. *J Affect Disord* 2015; **185**: 239–45.
- 200 American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th edn. Washington, DC: American Psychiatric Association, 2013.
- 201 Winsper C, Bilgin A, Thompson A, et al. The prevalence of personality disorders in the community: a global systematic review and meta-analysis. *Br J Psychiatry* 2020; **216**: 69–78.
- 202 Pompili M, Girardi P, Ruberto A, Tatarelli R. Suicide in borderline personality disorder: a meta-analysis. *Nord J Psychiatry* 2005; **59**: 319–24.
- 203 Kleindienst N, Bohus M, Ludäscher P, et al. Motives for nonsuicidal self-injury among women with borderline personality disorder. *J Nerv Ment Dis* 2008; **196**: 230–36.

- 204 Koenig J, Klier J, Parzer P, et al. High-frequency ecological momentary assessment of emotional and interpersonal states preceding and following self-injury in female adolescents. *Eur Child Adolesc Psychiatry* 2021; **30**: 1299–308.
- 205 Andrewes HE, Hulbert C, Cotton SM, Betts J, Chanan AM. An ecological momentary assessment investigation of complex and conflicting emotions in youth with borderline personality disorder. *Psychiatry Res* 2017; **252**: 102–10.
- 206 Storebø OJ, Stoffers-Winterling JM, Völlm BA, et al. Psychological therapies for people with borderline personality disorder. *Cochrane Database Syst Rev* 2020; **5**: CD012955.
- 207 Kaess M, Hooley JM, Klimes-Dougan B, et al. Advancing a temporal framework for understanding the biology of nonsuicidal self-injury: an expert review. *Neurosci Biobehav Rev* 2021; **130**: 228–39.
- 208 Turecki G. The molecular bases of the suicidal brain. *Nat Rev Neurosci* 2014; **15**: 802–16.
- 209 Turecki G, Meaney MJ. Effects of the social environment and stress on glucocorticoid receptor gene methylation: a systematic review. *Biol Psychiatry* 2016; **79**: 87–96.
- 210 Berardelli I, Serafini G, Cortese N, Fiaschè F, O'Connor RC, Pompili M. The involvement of hypothalamus-pituitary-adrenal (HPA) axis in suicide risk. *Brain Sci* 2020; **10**: 653.
- 211 Auerbach RP, Pagliaccio D, Allison GO, Alqueza KL, Alonso MF. Neural correlates associated with suicide and nonsuicidal self-injury in youth. *Biol Psychiatry* 2021; **89**: 119–33.
- 212 Labonté B, Abdallah K, Maussion G, et al. Regulation of impulsive and aggressive behaviours by a novel lncRNA. *Mol Psychiatry* 2021; **26**: 3751–64.
- 213 O'Connor DB, Gartland N, O'Connor RC. Stress, cortisol and suicide risk. *Int Rev Neurobiol* 2020; **152**: 101–30.
- 214 Solmi M, Radua J, Olivola M, et al. Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. *Mol Psychiatry* 2022; **27**: 281–95.
- 215 Blakemore S-J, Mills KL. Is adolescence a sensitive period for sociocultural processing? *Annu Rev Psychol* 2014; **65**: 187–207.
- 216 Turecki G, Brent DA, Gunnell D, et al. Suicide and suicide risk. *Nat Rev Dis Primers* 2019; **5**: 74.
- 217 Kimbrel NA, Ashley-Koch AE, Qin XJ, et al. A genome-wide association study of suicide attempts in the million veterans program identifies evidence of pan-ancestry and ancestry-specific risk loci. *Mol Psychiatry* 2022; **27**: 2264–72.
- 218 Mullins N, Kang J, Campos AI, et al. Dissecting the shared genetic architecture of suicide attempt, psychiatric disorders, and known risk factors. *Biol Psychiatry* 2022; **91**: 313–27.
- 219 Docherty AR, Mullins N, Ashley-Koch AE, et al. GWAS meta-analysis of suicide attempt: identification of 12 genome-wide significant loci and implication of genetic risks for specific health factors. *Am J Psychiatry* 2023; **180**: 723–38.
- 220 Bernanke JA, Stanley BH, Oquendo MA. Toward fine-grained phenotyping of suicidal behavior: the role of suicidal subtypes. *Mol Psychiatry* 2017; **22**: 1080–81.
- 221 Navarro D, Marín-Mayor M, Gasparyan A, García-Gutiérrez MS, Rubio G, Manzanares J. Molecular changes associated with suicide. *Int J Mol Sci* 2023; **24**: 16726.
- 222 Oquendo MA, Sullivan GM, Sudol K, et al. Toward a biosignature for suicide. *Am J Psychiatry* 2014; **171**: 1259–77.
- 223 Turecki G, Brent DA. Suicide and suicidal behaviour. *Lancet* 2016; **387**: 1227–39.
- 224 Kimbrel NA, Garrett ME, Evans MK, et al. Large epigenome-wide association study identifies multiple novel differentially methylated CpG sites associated with suicidal thoughts and behaviors in veterans. *Front Psychiatry* 2023; **14**: 1145375.
- 225 Case JAC, Mattoni M, Olino TM. Examining the neurobiology of non-suicidal self-injury in children and adolescents: the role of reward responsiveness. *J Clin Med* 2021; **10**: 3561.
- 226 Schmaal L, van Harmelen A-L, Chatzi V, et al. Imaging suicidal thoughts and behaviors: a comprehensive review of 2 decades of neuroimaging studies. *Mol Psychiatry* 2020; **25**: 408–27.
- 227 van Velzen LS, Dauvermann MR, Colic L, et al. Structural brain alterations associated with suicidal thoughts and behaviors in young people: results from 21 international studies from the ENIGMA Suicidal Thoughts and Behaviours consortium. *Mol Psychiatry* 2022; **27**: 4550–60.
- 228 Ducasse D, Holden RR, Boyer L, et al. Psychological pain in suicidality: a meta-analysis. *J Clin Psychiatry* 2018; **79**: 16r10732.
- 229 WHO. Social determinants of health. 2022. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1 (accessed April 2, 2023).
- 230 Dudgeon P, Milroy J, Calma T, et al. Solutions that work: what the evidence of our people tell us. Aboriginal and Torres Strait Islander suicide prevention evaluation report. Nov 10, 2016. <https://www.niaa.gov.au/sites/default/files/documents/publications/solutions-that-work-suicide-prevention.pdf> (accessed April 2, 2023).
- 231 Health Canada. First Nations mental wellness continuum framework: summary report. 2015. <https://thunderbirdpf.org/first-nations-mental-wellness-continuum-framework/> (accessed April 2, 2023).
- 232 WHO. Violence against women prevalence estimates, 2018. Geneva: World Health Organization, 2021.
- 233 UN. The world's women 2020: trends and statistics. New York, NY: United Nations Department of Economic and Social Affairs, 2020.
- 234 Geulayov G, Casey D, Bale E, et al. Socio-economic disparities in patients who present to hospital for self-harm: patients' characteristics and problems in the Multicentre Study of Self-Harm in England. *J Affect Disord* 2022; **318**: 238–45.
- 235 Barrett P, Griffin E, Corcoran P, O'Mahony MT, Arensman E. Self-harm among the homeless population in Ireland: a national registry-based study of incidence and associated factors. *J Affect Disord* 2018; **229**: 523–31.
- 236 Lodebo BT, Möller J, Larsson J-O, Engström K. Socioeconomic position and self-harm among adolescents: a population-based cohort study in Stockholm, Sweden. *Child Adolesc Psychiatry Ment Health* 2017; **11**: 46.
- 237 Hawton K, Bergen H, Geulayov G, et al. Impact of the recent recession on self-harm: longitudinal ecological and patient-level investigation from the Multicentre Study of Self-Harm in England. *J Affect Disord* 2016; **191**: 132–38.
- 238 Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. *Annu Rev Public Health* 2019; **40**: 105–25.
- 239 Basu A, Boland A, Witt K, Robinson J. Suicidal behaviour, including ideation and self-harm, in young migrants: a systematic review. *Int J Environ Res Public Health* 2022; **19**: 8329.
- 240 DeSa S, Gebremeskel AT, Omonaiye O, Yaya S. Barriers and facilitators to access mental health services among refugee women in high-income countries: a systematic review. *Syst Rev* 2022; **11**: 62.
- 241 Brown H, Bryder L. Universal healthcare for all? Māori health inequalities in Aotearoa New Zealand, 1975–2000. *Soc Sci Med* 2023; **319**: 115315.
- 242 Chen CY, Purdie-Vaughans V, Phelan JC, Yu G, Yang LH. Racial and mental illness stereotypes and discrimination: an identity-based analysis of the Virginia Tech and Columbine shootings. *Cultur Divers Ethnic Minor Psychol* 2015; **21**: 279–87.
- 243 Ansløos J, Peltier S. A question of justice: critically researching suicide with Indigenous studies of affect, biosociality, and land-based relations. *Health* 2022; **26**: 100–19.
- 244 Mills C. Decolonizing global mental health: the psychiatrization of the majority world. Hove: Routledge, 2014.
- 245 Belcourt B-R. Meditations on reserve life, biosociality, and the taste of non-sovereignty. *Settl Colon Stud* 2018; **8**: 1–15.
- 246 Maani N, McKee M, Petticrew M, Galea S. Corporate practices and the health of populations: a research and translational agenda. *Lancet Public Health* 2020; **5**: e80–81.
- 247 Mew EJ, Padmanathan P, Konradsen F, et al. The global burden of fatal self-poisoning with pesticides 2006–15: systematic review. *J Affect Disord* 2017; **219**: 93–104.
- 248 Gunnell D, Knipe D, Chang S-S, et al. Prevention of suicide with regulations aimed at restricting access to highly hazardous pesticides: a systematic review of the international evidence. *Lancet Glob Health* 2017; **5**: e1026–37.
- 249 Balayannis A, Cook BR. Suicide at a distance: the paradox of knowing self-destruction. *Prog Hum Geogr* 2015; **40**: 530–45.
- 250 Pearson M, Metcalfe C, Jayamanne S, et al. Effectiveness of household lockable pesticide storage to reduce pesticide self-poisoning in rural Asia: a community-based, cluster-randomised controlled trial. *Lancet* 2017; **390**: 1863–72.

- 251 Reifels L, Mishara BL, Dargis L, Vijayakumar L, Phillips MR, Pirkis J. Outcomes of community-based suicide prevention approaches that involve reducing access to pesticides: a systematic literature review. *Suicide Life Threat Behav* 2019; **49**: 1019–31.
- 252 Dowler C, Gaberell L. The Paraquat papers: how Syngenta's bad science helped keep the world's deadliest weedkiller on the market. March 24, 2021. <https://unearthed.greenpeace.org/2021/03/24/paraquat-papers-syngenta-toxic-pesticide-gramoxone/> (accessed April 2, 2023).
- 253 Amiri S, Behnezhad S. Alcohol use and risk of suicide: a systematic review and meta-analysis. *J Addict Dis* 2020; **38**: 200–13.
- 254 Borges G, Bagge CL, Cherpitel CJ, Conner KR, Orozco R, Rossow I. A meta-analysis of acute use of alcohol and the risk of suicide attempt. *Psychol Med* 2017; **47**: 949–57.
- 255 WHO. Global status report on alcohol and health 2018. 2018. <https://www.who.int/publications/i/item/9789241565639> (accessed April 2, 2023).
- 256 Ferreira-Borges C, Rehm J, Dias S, Babor T, Parry CDH. The impact of alcohol consumption on African people in 2012: an analysis of burden of disease. *Trop Med Int Health* 2016; **21**: 52–60.
- 257 Bakke Ø, Endal D. Vested interests in addiction research and policy alcohol policies out of context: drinks industry supplanting government role in alcohol policies in sub-Saharan Africa. *Addiction* 2010; **105**: 22–28.
- 258 WHO. Suicide rate estimates, age-standardized. Estimates by country. 2021. <https://apps.who.int/gho/data/view.main.MHSUICIDEASDRv> (accessed June 10, 2021).
- 259 Jarvi S, Jackson B, Swenson S, Crawford H. The impact of social contagion on non-suicidal self-injury: a review of the literature. *Arch Suicide Res* 2013; **17**: 1–19.
- 260 Niederkrotenthaler T, Stack S, Till B, et al. Association of increased youth suicides in the United States with the release of 13 Reasons Why. *JAMA Psychiatry* 2019; **76**: 933–40.
- 261 Niederkrotenthaler T, Voracek M, Herberth A, et al. Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *Br J Psychiatry* 2010; **197**: 234–43.
- 262 Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev* 1977; **84**: 191–215.
- 263 Doyle L, Treacy MP, Sheridan A. Self-harm in young people: prevalence, associated factors, and help-seeking in school-going adolescents. *Int J Ment Health Nurs* 2015; **24**: 485–94.
- 264 Yorkey B. 13 Reasons Why: Tape 6, Side A. March 31, 2017.
- 265 Wells G, Horwitz J, Seetharaman D. Facebook knows Instagram is toxic for teen girls, company documents show. *The Wall Street Journal*, Sept 14, 2021. <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739> (accessed April 2, 2023).
- 266 Nuij C, van Ballegooijen W, de Beurs D, et al. Safety planning-type interventions for suicide prevention: meta-analysis. *Br J Psychiatry* 2021; **219**: 419–26.
- 267 Ougrin D, Tranah T, Stahl D, Moran P, Asarnow JR. Therapeutic interventions for suicide attempts and self-harm in adolescents: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry* 2015; **54**: 97–107.
- 268 Cottrell DJ, Wright-Hughes A, Collinson M, et al. Effectiveness of systemic family therapy versus treatment as usual for young people after self-harm: a pragmatic, phase 3, multicentre, randomised controlled trial. *Lancet Psychiatry* 2018; **5**: 203–16.
- 269 Ougrin D, Asarnow JR. The end of family therapy for self-harm, or a new beginning? *Lancet Psychiatry* 2018; **5**: 188–89.
- 270 Zisook S, Domingues I, Compton J. Pharmacologic approaches to suicide prevention. *Focus Am Psychiatr Publ* 2023; **21**: 137–44.
- 271 Hawkins EM, Coryell W, Leung S, et al. Effects of somatic treatments on suicidal ideation and completed suicides. *Brain Behav* 2021; **11**: e2381.
- 272 Baldessarini RJ, Tondo L, Hennen J. Lithium treatment and suicide risk in major affective disorders: update and new findings. *J Clin Psychiatry* 2003; **64**: 44–52.
- 273 Lauterbach E, Felber W, Müller-Oerlinghausen B, et al. Adjunctive lithium treatment in the prevention of suicidal behaviour in depressive disorders: a randomised, placebo-controlled, 1-year trial. *Acta Psychiatr Scand* 2008; **118**: 469–79.
- 274 Oquendo MA, Galfalvy HC, Currier D, et al. Treatment of suicide attempters with bipolar disorder: a randomized clinical trial comparing lithium and valproate in the prevention of suicidal behavior. *Am J Psychiatry* 2011; **168**: 1050–56.
- 275 Katz IR, Rogers MP, Lew R, et al. Lithium treatment in the prevention of repeat suicide-related outcomes in veterans with major depression or bipolar disorder: a randomized clinical trial. *JAMA Psychiatry* 2022; **79**: 24–32.
- 276 Meltzer HY, Alphas L, Green AI, et al. Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). *Arch Gen Psychiatry* 2003; **60**: 82–91.
- 277 Taipale H, Lähteenvuo M, Tanskanen A, Mittendorfer-Rutz E, Tiihonen J. Comparative effectiveness of antipsychotics for risk of attempted or completed suicide among persons with schizophrenia. *Schizophr Bull* 2021; **47**: 23–30.
- 278 Wagstaff A, Perry C. Clozapine: in prevention of suicide in patients with schizophrenia or schizoaffective disorder. *CNS Drugs* 2003; **17**: 273–80, discussion 281–83.
- 279 Nikayin S, Sanacora G. Evaluating the role of ketamine/esketamine in the management of major depressive disorder with suicide risk. *CNS Drugs* 2021; **35**: 1069–79.
- 280 Leather JZ, Keyworth C, Kapur N, Campbell SM, Armitage CJ. Examining drivers of self-harm guideline implementation by general practitioners: a qualitative analysis using the theoretical domains framework. *Br J Health Psychol* 2022; **27**: 1275–95.
- 281 Leather JZ, O'Connor RC, Quinlivan L, Kapur N, Campbell S, Armitage CJ. Healthcare professionals' implementation of national guidelines with patients who self-harm. *J Psychiatr Res* 2020; **130**: 405–11.
- 282 McManus S, Bebbington P, Jenkins R, Brugha T. Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014. Sept 29, 2016. <https://digital.nhs.uk/data-and-information/publications/statistical/adult-psychiatric-morbidity-survey/adult-psychiatric-morbidity-survey-survey-of-mental-health-and-wellbeing-england-2014> (accessed April 2, 2023).
- 283 Tan SC, Tam CL, Bonn G. Feeling better or worse? The lived experience of non-suicidal self-injury among Malaysian university students. *Asia Pac J Couns Psychother* 2019; **10**: 3–20.
- 284 Quarshie EN-B, Waterman MG, House AO. Adolescents at risk of self-harm in Ghana: a qualitative interview study exploring the views and experiences of key adult informants. *BMC Psychiatry* 2020; **20**: 310.
- 285 Carr MJ, Ashcroft DM, Kontopantelis E, et al. Premature death among primary care patients with a history of self-harm. *Ann Fam Med* 2017; **15**: 246–54.
- 286 Kapur N, Steeg S, Turnbull P, et al. Hospital management of suicidal behaviour and subsequent mortality: a prospective cohort study. *Lancet Psychiatry* 2015; **2**: 809–16.
- 287 Liu B-P, Qin P, Zhang J, et al. Suicide and non-suicide mortality and associated risk factors among suicide attempters: a 10-year follow-up of a large cohort in rural China. *J Psychiatr Res* 2022; **150**: 71–78.
- 288 O'Keeffe S, Suzuki M, Ryan M, Hunter J, McCabe R. Experiences of care for self-harm in the emergency department: comparison of the perspectives of patients, carers and practitioners. *BJPsych Open* 2021; **7**: e175.
- 289 Quinlivan LM, Gorman L, Littlewood DL, et al. 'Relieved to be seen'—patient and carer experiences of psychosocial assessment in the emergency department following self-harm: qualitative analysis of 102 free-text survey responses. *BMJ Open* 2021; **11**: e044434.
- 290 Graney J, Hunt IM, Quinlivan L, et al. Suicide risk assessment in UK mental health services: a national mixed-methods study. *Lancet Psychiatry* 2020; **7**: 1046–53.
- 291 Quinlivan L, Cooper J, Meehan D, et al. Predictive accuracy of risk scales following self-harm: multicentre, prospective cohort study. *Br J Psychiatry* 2017; **210**: 429–36.
- 292 Carter G, Milner A, McGill K, Pirkis J, Kapur N, Spittal MJ. Predicting suicidal behaviours using clinical instruments: systematic review and meta-analysis of positive predictive values for risk scales. *Br J Psychiatry* 2017; **210**: 387–95.
- 293 Lejeune A, Le Glaz A, Perron P-A, et al. Artificial intelligence and suicide prevention: a systematic review. *Eur Psychiatry* 2022; **65**: 1–22.

- 294 Pokorny AD. Prediction of suicide in psychiatric patients. Report of a prospective study. *Arch Gen Psychiatry* 1983; **40**: 249–57.
- 295 Husain N, Afsar S, Ara J, et al. Brief psychological intervention after self-harm: randomised controlled trial from Pakistan. *Br J Psychiatry* 2014; **204**: 462–70.
- 296 Tharani A, Farooq S, Lakhdar MPA, Talib U, Khan MM. Characteristics and patterns of individuals who have self-harmed: a retrospective descriptive study from Karachi, Pakistan. *BMC Psychiatry* 2022; **22**: 367.
- 297 Shidhaye R, Murhar V, Gangale S, et al. The effect of VISHRAM, a grass-roots community-based mental health programme, on the treatment gap for depression in rural communities in India: a population-based study. *Lancet Psychiatry* 2017; **4**: 128–35.
- 298 Hjelmeland H, Knizek BL. Time to change direction in suicide research. In: O'Connor RC, Pirkis J, eds. The international handbook of suicide prevention, 2nd edn. Chichester: John Wiley & Sons, 2016: 696–709.
- 299 Abrutyn S, Mueller AS. Toward a robust science of suicide: epistemological, theoretical, and methodological considerations in advancing suicidology. *Death Stud* 2021; **45**: 522–27.
- 300 Chandler A. Socioeconomic inequalities of suicide: sociological and psychological intersections. *Eur J Soc Theory* 2019; **23**: 33–51.
- 301 Baker C, Shaw C, Biley F. Our encounters with self-harm. Monmouth: PCCS Books, 2014.
- 302 Faulkner A. Survivor research and Mad Studies: the role and value of experiential knowledge in mental health research. *Disabil Soc* 2017; **32**: 500–20.
- 303 Groot B, Haveman A, Abma T. Relational, ethically sound co-production in mental health care research: epistemic injustice and the need for an ethics of care. *Crit Public Health* 2022; **32**: 230–40.
- 304 Beresford P. PPI or user involvement: taking stock from a service user perspective in the twenty first century. *Res Involv Engagem* 2020; **6**: 36.
- 305 Presson B, Barnes B, Rambo C, Author X. Traces and shards of self-injury: 123Strange accounting with “Author X”. In: Adams TE, Boylorn RM, Tillmann LM, eds. Advances in autoethnography and narrative inquiry: reflections on the legacy of Carolyn Ellis and Arthur Bochner, 1st edn. Abingdon: Routledge, 2021: 123–41.
- 306 Beresford P, Farr M, Hickey G, et al. COVID-19 and co-production in health and social care research, policy, and practice. Volume 1: the challenges and necessity of co-production. Bristol: Policy Press, 2021.
- 307 Bronfenbrenner U. The ecology of human development. Cambridge, MA: Harvard University Press, 1979.
- 308 Centers for Disease Control and Prevention. The social-ecological model: a framework for prevention. 2021. <https://www.cdc.gov/violence-prevention/about/index.html> (accessed April 2, 2023).
- 309 O'Connor RC, Worthman CM, Abanga M, et al. Gone too soon: priorities for action to prevent premature mortality associated with mental illness and mental distress. *Lancet Psychiatry* 2023; **10**: 452–64.
- 310 Standley CJ. Expanding our paradigms: intersectional and socioecological approaches to suicide prevention. *Death Stud* 2022; **46**: 224–32.
- 311 Standley CJ, Foster-Fishman P. Intersectionality, social support, and youth suicidality: a socioecological approach to prevention. *Suicide Life Threat Behav* 2021; **51**: 203–11.
- 312 Mueller AS, Abrutyn S, Pescosolido B, Diefendorf S. The social roots of suicide: theorizing how the external social world matters to suicide and suicide prevention. *Front Psychol* 2021; **12**: 621569.
- 313 Caine ED. Building the foundation for comprehensive suicide prevention—based on intention and planning in a social-ecological context. *Epidemiol Psychiatr Sci* 2019; **29**: e69.
- 314 Ssewanyana D, van Baar A, Mwangala PN, Newton CR, Abubakar A. Inter-relatedness of underlying factors for injury and violence among adolescents in rural coastal Kenya: a qualitative study. *Health Psychol Open* 2019; **6**: 2055102919849399.
- 315 Chaney S. Am I a researcher or a self-harmer? Mental health, objectivity and identity politics in history. *Soc Theory Health* 2020; **18**: 152–68.
- 316 Rimke H. Introduction – mental and emotional distress as a social justice issue: beyond psychocentrism. *Stud Soc Justice* 2016; **10**: 4–17.
- 317 McLachlan A, Waitoki W, Harris P, Jones H. Whiti te rā: a guide to connecting Māori to traditional wellbeing pathways. *J Indig Wellbeing* 2021; **6**: 78–97.
- 318 Stanley LR, Swaim RC, Kaholokula JK, Kelly KJ, Belcourt A, Allen J. The imperative for research to promote health equity in Indigenous communities. *Prev Sci* 2020; **21** (suppl 1): 13–21.
- 319 Wexler L, Chandler M, Gone JP, et al. Advancing suicide prevention research with rural American Indian and Alaska Native populations. *Am J Public Health* 2015; **105**: 891–99.
- 320 Bainbridge R, McCalman J, Jongen C, et al. Improving social and emotional wellbeing for Aboriginal and Torres Strait Islander people: an evidence check. <https://www.saxinstitute.org.au/evidence-check/improving-social-emotional-wellbeing-aboriginal-torres-strait-islander-people/> (accessed April 2, 2023).
- 321 Redvers J, Bjerregaard P, Eriksen H, et al. A scoping review of Indigenous suicide prevention in circumpolar regions. *Int J Circumpolar Health* 2015; **74**: 27509.
- 322 Pham TV, Fetter AK, Wigglesworth A, et al. Suicide interventions for American Indian and Alaska Native populations: a systematic review of outcomes. *SSM Ment Health* 2021; **1**: 100029.
- 323 Dudgeon P, Bray A, Darlaston-Jones D, Walker R. Aboriginal participatory action research: an Indigenous research methodology strengthening decolonisation and social and emotional wellbeing. September, 2020. <https://www.lowitja.org.au/resource/aboriginal-participatory-action-research-an-indigenous-research-methodology-strengthening-decolonisation-and-social-and-emotional-wellbeing/> (accessed April 2, 2023).
- 324 Million D. Felt theory: an Indigenous feminist approach to affect and history. *Wicazo Sa Rev* 2009; **24**: 53–76.
- 325 Cai Z, Chang Q, Yip PSF. A scientometric analysis of suicide research: 1990–2018. *J Affect Disord* 2020; **266**: 356–65.
- 326 Skegg K. Self-harm. *Lancet* 2005; **366**: 1471–83.
- 327 Kinyanda E, Wamala D, Musisi S, Hjelmeland H. Suicide in urban Kampala, Uganda: a preliminary exploration. *Afr Health Sci* 2011; **11**: 219–27.
- 328 Pedersen B, Ssemugabo C, Nabankema V, Jørs E. Characteristics of pesticide poisoning in rural and urban settings in Uganda. *Environ Health Insights* 2017; **11**: 117863021713015.
- 329 Boduszek D, Debowska A, Ochen EA, et al. Prevalence and correlates of non-suicidal self-injury, suicidal ideation, and suicide attempt among children and adolescents: findings from Uganda and Jamaica. *J Affect Disord* 2021; **283**: 172–78.
- 330 WHO. National suicide prevention strategies: progress, examples and indicators. 2018. <https://www.who.int/publications/i/item/national-suicide-prevention-strategies-progress-examples-and-indicators> (accessed April 2, 2023).
- 331 Woelbert E, Lundell-Smith K, White R, Kemmer D. Accounting for mental health research funding: developing a quantitative baseline of global investments. *Lancet Psychiatry* 2021; **8**: 250–58.
- 332 Woelbert E, White R, Lundell-Smith K, Grant J, Kemmer D. The inequities of mental health research (IAMHRF). November, 2020. https://digitalscience.figshare.com/articles/report/The_Inequities_of_Mental_Health_Research_IAMHRF_/13055897 (accessed April 2, 2023).
- 333 Quarshie EN-B, Waterman MG, House AO. Self-harm with suicidal and non-suicidal intent in young people in sub-Saharan Africa: a systematic review. *BMC Psychiatry* 2020; **20**: 234.
- 334 Marecek J. Young women's suicide in Sri Lanka: cultural, ecological, and psychological factors. *Asian J Couns* 2006; **13**: 63–92.
- 335 Nichter M. Idioms of distress: alternatives in the expression of psychosocial distress: a case study from South India. *Cult Med Psychiatry* 1981; **5**: 379–408.
- 336 Sørensen JB, Agampodi T, Sørensen BR, Siribaddana S, Konradson F, Rheinländer T. ‘We lost because of his drunkenness’: the social processes linking alcohol use to self-harm in the context of daily life stress in marriages and intimate relationships in rural Sri Lanka. *BMJ Glob Health* 2017; **2**: e000462.
- 337 Amitai M, Apter A. Social aspects of suicidal behavior and prevention in early life: a review. *Int J Environ Res Public Health* 2012; **9**: 985–94.
- 338 Kiekens G, Robinson K, Tatnell R, Kirtley OJ. Opening the black box of daily life in nonsuicidal self-injury research: with great opportunity comes great responsibility. *JMIR Ment Health* 2021; **8**: e30915.

- 339 Kleiman EM, Turner BJ, Fedor S, et al. Digital phenotyping of suicidal thoughts. *Depress Anxiety* 2018; **35**: 601–08.
- 340 Nock MK, Prinstein MJ, Sterba SK. Revealing the form and function of self-injurious thoughts and behaviors: a real-time ecological assessment study among adolescents and young adults. *J Abnorm Psychol* 2009; **118**: 816–27.
- 341 Owens C, Fox F, Redwood S, et al. Measuring outcomes in trials of interventions for people who self-harm: qualitative study of service users' views. *BJPsych Open* 2020; **6**: e22.
- 342 Csikszentmihalyi M, Larson R. Validity and reliability of the experience-sampling method. *J Nerv Ment Dis* 1987; **175**: 526–36.
- 343 Myin-Germeys I, Kasanova Z, Vaessen T, et al. Experience sampling methodology in mental health research: new insights and technical developments. *World Psychiatry* 2018; **17**: 123–32.
- 344 Stone AA, Shiffman S. Ecological momentary assessment (EMA) in behavioral medicine. *Ann Behav Med* 1994; **16**: 199–202.
- 345 Kleiman EM, Glenn CR, Liu RT. Real-time monitoring of suicide risk among adolescents: potential barriers, possible solutions, and future directions. *J Clin Child Adolesc Psychol* 2019; **48**: 934–46.
- 346 Kleiman EM, Turner BJ, Fedor S, Beale EE, Huffman JC, Nock MK. Examination of real-time fluctuations in suicidal ideation and its risk factors: results from two ecological momentary assessment studies. *J Abnorm Psychol* 2017; **126**: 726–38.
- 347 Gratch I, Choo T-H, Galfalvy H, et al. Detecting suicidal thoughts: the power of ecological momentary assessment. *Depress Anxiety* 2021; **38**: 8–16.
- 348 Oquendo MA, Galfalvy HC, Choo T-H, et al. Highly variable suicidal ideation: a phenotypic marker for stress induced suicide risk. *Mol Psychiatry* 2021; **26**: 5079–86.
- 349 Coppersmith DDL, Bentley KH, Kleiman EM, Nock MK. Variability in the functions of nonsuicidal self-injury: evidence from three real-time monitoring studies. *Behav Ther* 2021; **52**: 1516–28.
- 350 Myin-Germeys I, Klippel A, Steinhart H, Reininghaus U. Ecological momentary interventions in psychiatry. *Curr Opin Psychiatry* 2016; **29**: 258–63.
- 351 Coppersmith DDL, Dempsey W, Kleiman EM, Bentley KH, Murphy SA, Nock MK. Just-in-time adaptive interventions for suicide prevention: promise, challenges, and future directions. *Psychiatry* 2022; **85**: 317–33.
- 352 Hetrick SE, Subasinghe A, Anglin K, Hart L, Morgan A, Robinson J. Understanding the needs of young people who engage in self-harm: a qualitative investigation. *Front Psychol* 2020; **10**: 2916.
- 353 Owens C, Farrand P, Darvill R, Emmens T, Hewis E, Aitken P. Involving service users in intervention design: a participatory approach to developing a text-messaging intervention to reduce repetition of self-harm. *Health Expect* 2011; **14**: 285–95.
- 354 Robinson J, Bailey E, Witt K, et al. What works in youth suicide prevention? A systematic review and meta-analysis. *EClinicalMedicine* 2018; **4**: 52–91.
- 355 Hetrick SE, Robinson J, Burge E, et al. Youth codesign of a mobile phone app to facilitate self-monitoring and management of mood symptoms in young people with major depression, suicidal ideation, and self-harm. *JMIR Ment Health* 2018; **5**: e9.
- 356 Piccirillo ML, Rodebaugh TL. Foundations of idiographic methods in psychology and applications for psychotherapy. *Clin Psychol Rev* 2019; **71**: 90–100.
- 357 Stanley B, Brown GK. Safety planning intervention: a brief intervention to mitigate suicide risk. *Cogn Behav Pract* 2012; **19**: 256–64.
- 358 Verhagen SJW, Hasmi L, Drukker M, van Os J, Delespaul PAEG. Use of the experience sampling method in the context of clinical trials. *Evid Based Ment Health* 2016; **19**: 86–89.
- 359 Barlow D, Nock M, Hersen M. Single case experimental designs: strategies for studying behavior change, 3rd edn. Boston, MA: Pearson, 2008.
- 360 Barlow DH, Nock MK. Why can't we be more idiographic in our research? *Perspect Psychol Sci* 2009; **4**: 19–21.
- 361 Rizvi SL, Nock MK. Single-case experimental designs for the evaluation of treatments for self-injurious and suicidal behaviors. *Suicide Life Threat Behav* 2008; **38**: 498–510.
- 362 Kessler RC. Clinical epidemiological research on suicide-related behaviors—where we are and where we need to go. *JAMA Psychiatry* 2019; **76**: 777–78.
- 363 Allender S, Hayward J, Gupta S, et al. Bayesian strategy selection identifies optimal solutions to complex problems using an example from GP prescribing. *NPJ Digit Med* 2020; **3**: 7.
- 364 Czyz EK, King CA, Prouty D, Micol VJ, Walton M, Nahum-Shani I. Adaptive intervention for prevention of adolescent suicidal behavior after hospitalization: a pilot sequential multiple assignment randomized trial. *J Child Psychol Psychiatry* 2021; **62**: 1019–31.
- 365 Jaroszewski AC, Morris RR, Nock MK. Randomized controlled trial of an online machine learning-driven risk assessment and intervention platform for increasing the use of crisis services. *J Consult Clin Psychol* 2019; **87**: 370–79.
- 366 Kirtley OJ, van Mens K, Hoogendoorn M, Kapur N, de Beurs D. Translating promise into practice: a review of machine learning in suicide research and prevention. *Lancet Psychiatry* 2022; **9**: 243–52.
- 367 Franklin JC, Ribeiro JD, Fox KR, et al. Risk factors for suicidal thoughts and behaviors: a meta-analysis of 50 years of research. *Psychol Bull* 2017; **143**: 187–232.
- 368 Barak-Corren Y, Castro VM, Javitt S, et al. Predicting suicidal behavior from longitudinal electronic health records. *Am J Psychiatry* 2017; **174**: 154–62.
- 369 Barak-Corren Y, Castro VM, Nock MK, et al. Validation of an electronic health record-based suicide risk prediction modeling approach across multiple health care systems. *JAMA Netw Open* 2020; **3**: e201262.
- 370 Simon GE, Johnson E, Lawrence JM, et al. Predicting suicide attempts and suicide deaths following outpatient visits using electronic health records. *Am J Psychiatry* 2018; **175**: 951–60.
- 371 Tran T, Luo W, Phung D, et al. Risk stratification using data from electronic medical records better predicts suicide risks than clinician assessments. *BMC Psychiatry* 2014; **14**: 76.
- 372 Zheng L, Wang O, Hao S, et al. Development of an early-warning system for high-risk patients for suicide attempt using deep learning and electronic health records. *Transl Psychiatry* 2020; **10**: 72.
- 373 Barnett S, Huckvale K, Christensen H, Venkatesh S, Mouzakis K, Vasa R. Intelligent sensing to inform and learn (InSTIL): a scalable and governance-aware platform for universal, smartphone-based digital phenotyping for research and clinical applications. *J Med Internet Res* 2019; **21**: e16399.
- 374 Allen NB, Nelson BW, Brent D, Auerbach RP. Short-term prediction of suicidal thoughts and behaviors in adolescents: can recent developments in technology and computational science provide a breakthrough? *J Affect Disord* 2019; **250**: 163–69.
- 375 Braithwaite SR, Giraud-Carrier C, West J, Barnes MD, Hanson CL. Validating machine learning algorithms for Twitter data against established measures of suicidality. *JMIR Ment Health* 2016; **3**: e21.
- 376 Domínguez-Baleón C, Gutiérrez-Mondragón LF, Campos-González AI, Rentería ME. Neuroimaging studies of suicidal behavior and non-suicidal self-injury in psychiatric patients: a systematic review. *Front Psychiatry* 2018; **9**: 500.
- 377 González-Castro TB, Tovilla-Zárate CA, Genis-Mendoza AD, et al. Identification of gene ontology and pathways implicated in suicide behavior: systematic review and enrichment analysis of GWAS studies. *Am J Med Genet B Neuropsychiatr Genet* 2019; **180**: 320–29.
- 378 Johnston JAY, Wang F, Liu J, et al. Multimodal neuroimaging of frontolimbic structure and function associated with suicide attempts in adolescents and young adults with bipolar disorder. *Am J Psychiatry* 2017; **174**: 667–75.
- 379 Levey DF, Polimanti R, Cheng Z, et al. Genetic associations with suicide attempt severity and genetic overlap with major depression. *Transl Psychiatry* 2019; **9**: 22.
- 380 Peng H, Wu K, Li J, et al. Increased suicide attempts in young depressed patients with abnormal temporal-parietal-limbic gray matter volume. *J Affect Disord* 2014; **165**: 69–73.
- 381 Garcia-Ceja E, Riegler M, Nordgreen T, Jakobsen P, Oedegaard KJ, Tørresen J. Mental health monitoring with multimodal sensing and machine learning: a survey. *Pervasive Mobile Comput* 2018; **51**: 1–26.
- 382 Ramírez-Cifuentes D, Freire A, Baeza-Yates R, et al. Detection of suicidal ideation on social media: multimodal, relational, and behavioral analysis. *J Med Internet Res* 2020; **22**: e17758.

- 383 Nock MK, Kleiman EM, Abraham M, et al. Consensus statement on ethical & safety practices for conducting digital monitoring studies with people at risk of suicide and related behaviors. *Psychiatr Res Clin Pract* 2021; 3: 57–66.
- 384 Bradley A, van der Meer R, McKay C. Personalized pancreatic cancer management: a systematic review of how machine learning is supporting decision-making. *Pancreas* 2019; 48: 598–604.
- 385 de Filippis R, Carbone EA, Gaetano R, et al. Machine learning techniques in a structural and functional MRI diagnostic approach in schizophrenia: a systematic review. *Neuropsychiatr Dis Treat* 2019; 15: 1605–27.
- 386 Shung D, Simonov M, Gentry M, Au B, Laine L. Machine learning to predict outcomes in patients with acute gastrointestinal bleeding: a systematic review. *Dig Dis Sci* 2019; 64: 2078–87.
- 387 Coley RY, Johnson E, Simon GE, Cruz M, Shortreed SM. Racial/ethnic disparities in the performance of prediction models for death by suicide after mental health visits. *JAMA Psychiatry* 2021; 78: 726–34.
- 388 Raad H, Cornelius V, Chan S, Williamson E, Cro S. An evaluation of inverse probability weighting using the propensity score for baseline covariate adjustment in smaller population randomised controlled trials with a continuous outcome. *BMC Med Res Methodol* 2020; 20: 70.
- 389 Li Y, Xie H, Lin Y, Lui JCS. Unifying offline causal inference and online bandit learning for data driven decision. WWW' 21: Proceedings of the Web Conference 2021; April 19–23, 2021 (2291–303).
- 390 Ribeiro JD, Huang X, Fox KR, Walsh CG, Linthicum KP. Predicting imminent suicidal thoughts and nonfatal attempts: the role of complexity. *Clin Psychol Sci* 2019; 7: 941–57.
- 391 Carpenter TP, Law KC. Optimizing the scientific study of suicide with open and transparent research practices. *Suicide Life Threat Behav* 2021; 51: 36–46.
- 392 Kirtley OJ, Janssens JJ, Kaurin A. Open science in suicide research is open for business. *Crisis* 2022; 43: 355–60.
- 393 Reuter Morthorst B, Soegaard B, Nordentoft M, Erlangsen A. Incidence rates of deliberate self-harm in Denmark 1994–2011. *Crisis* 2016; 37: 256–64.
- 394 Qin P, Mehlum L. Deliberate self-harm: case identification and incidence estimate upon data from national patient registry. *PLoS One* 2020; 15: e0231885.
- 395 Ejlskov L, Antonsen S, Wulff JN, et al. Multilevel interactions between family and neighbourhood socioeconomic indices in childhood and later risks of self-harm and violent criminality in Denmark: a national cohort study. *Lancet Public Health* 2023; 8: e99–108.
- 396 Hawton K, Bergen H, Casey D, et al. Self-harm in England: a tale of three cities. Multicentre study of self-harm. *Soc Psychiatry Psychiatr Epidemiol* 2007; 42: 513–21.
- 397 Perry IJ, Corcoran P, Fitzgerald AP, Keeley HS, Reulbach U, Arensman E. The incidence and repetition of hospital-treated deliberate self-harm: findings from the world's first national registry. *PLoS One* 2012; 7: e31663.
- 398 Robinson J, Witt K, Lamblin M, et al. Development of a self-harm monitoring system for Victoria. *Int J Environ Res Public Health* 2020; 17: 9385.
- 399 Mars B, Heron J, Klonsky ED, et al. What distinguishes adolescents with suicidal thoughts from those who have attempted suicide? A population-based birth cohort study. *J Child Psychol Psychiatry* 2019; 60: 91–99.
- 400 Beesdo-Baum K, Voss C, Venz J, et al. The behavior and mind health (BeMIND) study: methods, design and baseline sample characteristics of a cohort study among adolescents and young adults. *Int J Methods Psychiatr Res* 2020; 29: e1804.
- 401 Janssens J, Myin-Germeys I, Lafit G, et al. Lifetime and current self-harm thoughts and behaviours and their relationship to parent and peer attachment. *psyArXiv* 2022; published online Sept 9. <https://doi.org/10.31234/osf.io/v9wn6> (preprint).
- 402 de Beurs D, Bockting C, Kerkhof A, et al. A network perspective on suicidal behavior: understanding suicidality as a complex system. *Suicide Life Threat Behav* 2021; 51: 115–26.
- 403 Fox KR, Huang X, Linthicum KP, Wang SB, Franklin JC, Ribeiro JD. Model complexity improves the prediction of nonsuicidal self-injury. *J Consult Clin Psychol* 2019; 87: 684–92.
- 404 de Beurs D. Network analysis: a novel approach to understand suicidal behaviour. *Int J Environ Res Public Health* 2017; 14: 219.
- 405 Hinze V, Ford T, Evans R, Gjelsvik B, Crane C. Exploring the relationship between pain and self-harm thoughts and behaviours in young people using network analysis. *Psychol Med* 2021; 52: 1–10.
- 406 Kiekens G, Hasking P, Nock MK, et al. A comparison of affective-cognitive states in daily life between emerging adults with and without past-year nonsuicidal self-injury. *Behav Ther* 2023; 55: 469–84.
- 407 Kim S, Woo S, Lee J-S. Investigation of the subtypes of nonsuicidal self-injury based on the forms of self-harm behavior: examining validity and utility via latent class analysis and ecological momentary assessment. *J Korean Med Sci* 2023; 38: e132.
- 408 Shahwan S, Lau JH, Abidin E, et al. A typology of nonsuicidal self-injury in a clinical sample: a latent class analysis. *Clin Psychol Psychother* 2020; 27: 791–803.
- 409 Uh S, Dalmaijer ES, Siugzdaite R, Ford TJ, Astle DE. Two pathways to self-harm in adolescence. *J Am Acad Child Adolesc Psychiatry* 2021; 60: 1491–500.
- 410 Millner AJ, Robinaugh DJ, Nock MK. Advancing the understanding of suicide: the need for formal theory and rigorous descriptive research. *Trends Cogn Sci* 2020; 24: 704–16.
- 411 Nock MK, Prinstein MJ. A functional approach to the assessment of self-mutilative behavior. *J Consult Clin Psychol* 2004; 72: 885–90.
- 412 O'Connor RC, Kirtley OJ. The integrated motivational-volitional model of suicidal behaviour. *Philos Trans R Soc Lond B Biol Sci* 2018; 373: 20170268.
- 413 Stack S. Contributing factors to suicide: political, social, cultural and economic. *Prev Med* 2021; 152: 106498.
- 414 Meda N, Miola A, Slongo I, Zordan MA, Sambataro F. The impact of macroeconomic factors on suicide in 175 countries over 27 years. *Suicide Life Threat Behav* 2022; 52: 49–58.
- 415 Yur'ev A, Värnik A, Värnik P, Sisask M, Leppik L. Role of social welfare in European suicide prevention. *Int J Soc Welf* 2012; 21: 26–33.
- 416 Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *Lancet* 2009; 374: 315–23.
- 417 Kaufman JA, Salas-Hernández LK, Komro KA, Livingston MD. Effects of increased minimum wages by unemployment rate on suicide in the USA. *J Epidemiol Community Health* 2020; 74: 219–24.
- 418 Gertner AK, Rotter JS, Shafer PR. Association between state minimum wages and suicide rates in the U.S. *Am J Prev Med* 2019; 56: 648–54.
- 419 Dow WH, Godoy A, Lowenstein C, Reich M. Can labor market policies reduce deaths of despair? *J Health Econ* 2020; 74: 102372.
- 420 Isacson G, Rich CL. Management of patients who deliberately harm themselves. *BMJ* 2001; 322: 213–15.
- 421 de Beurs DP, de Groot MH, de Keijser J, van Duijn E, de Winter RFP, Kerkhof AJFM. Evaluation of benefit to patients of training mental health professionals in suicide guidelines: cluster randomised trial. *Br J Psychiatry* 2016; 208: 477–83.
- 422 Zarska A, Barnicot K, Lavelle M, Dorey T, McCabe R. A systematic review of training interventions for emergency department providers and psychosocial interventions delivered by emergency department providers for patients who self-harm. *Arch Suicide Res* 2023; 27: 829–50.
- 423 National Collaborating Centre for Mental Health. Self-harm and suicide prevention competence framework. 2018. <https://www.ucl.ac.uk/pals/research/clinical-educational-and-health-psychology/research-groups/core/competence-frameworks/self> (accessed Feb 7, 2023).
- 424 Garcia CL, Abreu LC, Ramos JLS, et al. Influence of burnout on patient safety: systematic review and meta-analysis. *Medicina* 2019; 55: 553.
- 425 Castro-Ramirez F, Al-Suwaidi M, Garcia P, Rankin O, Ricard JR, Nock MK. Racism and poverty are barriers to the treatment of youth mental health concerns. *J Clin Child Adolesc Psychol* 2021; 50: 534–46.
- 426 Rees SN, Crowe M, Harris S. The lesbian, gay, bisexual and transgender communities' mental health care needs and experiences of mental health services: an integrative review of qualitative studies. *J Psychiatr Ment Health Nurs* 2021; 28: 578–89.
- 427 King AJ, Brophy LM, Fortune TL, Byrne L. Factors affecting mental health professionals' sharing of their lived experience in the workplace: a scoping review. *Psychiatr Serv* 2020; 71: 1047–64.

- 428 Lavis A, Winter R. #Online harms or benefits? An ethnographic analysis of the positives and negatives of peer-support around self-harm on social media. *J Child Psychol Psychiatry* 2020; **61**: 842–54.
- 429 About Seif N, John-Baptiste Bastien R, Wang B, et al. Effectiveness, acceptability and potential harms of peer support for self-harm in non-clinical settings: systematic review. *BJPsych Open* 2022; **8**: e28.
- 430 Boyce M, Munn-Giddings C, Secker J. 'It is a safe space': self-harm self-help groups. *Ment Health Rev* 2018; **23**: 54–63.
- 431 Faulkner A, Rowan Olive R. Not a naughty child: people's experiences of service responses to self-injury. Jan 27, 2022. <https://www.nsun.org.uk/not-a-naughty-child-peoples-experiences-of-service-responses-to-self-injury/> (accessed April 2, 2023).
- 432 Space M. Community, care, and creativity: supporting LGBTQ+ people with experience of self-harm. Make Space, 2021. <https://www.makespaceco.org/writing> (accessed April 2, 2023).
- 433 Space M. Support and solidarity: supporting LGBTQ+ people with experience of self-harm. Make Space, 2021. <https://www.makespaceco.org/writing> (accessed April 2, 2023).
- 434 Cresswell M. Psychiatric "survivors" and testimonies of self-harm. *Soc Sci Med* 2005; **61**: 1668–77.
- 435 Fricker M. Epistemic injustice: power and the ethics of knowing. New York, NY: Oxford University Press, 2007.
- 436 Knowles S, Sharma V, Fortune S, Wadman R, Churchill R, Hetrick S. Adapting a codesign process with young people to prioritize outcomes for a systematic review of interventions to prevent self-harm and suicide. *Health Expect* 2022; **25**: 1393–404.
- 437 Fitzpatrick SJ, River J. Beyond the medical model: future directions for suicide intervention services. *Int J Health Serv* 2018; **48**: 189–203.
- 438 Taylor-King S, Carr S, Edwards-White T. Unkindest cuts: reflections on destruction and resilience in LGBTQ+ community-based mental health support. *Asylum Magazine* 2016; **23**: 10–12.
- 439 Johansson BA, Holmström E, Eberhard S, Lindgren A, Rask O. Introducing brief admissions by self-referral in child and adolescent psychiatry: an observational cohort study in Sweden. *Lancet Psychiatry* 2023; **10**: 598–607.
- 440 Hanlon CA, Chopra J, Boland J, McLroy D, Poole H, Saini P. A mixed-methods evaluation of the acceptability and fidelity of the James' Place model for men experiencing suicidal crisis. *Health Psychol Behav Med* 2023; **11**: 2265142.
- 441 De Leon G, Unterrainer HF. The therapeutic community: a unique social psychological approach to the treatment of addictions and related disorders. *Front Psychiatry* 2020; **11**: 786.
- 442 Chiesa M, Fonagy P, Holmes J, Drahorad C. Residential versus community treatment of personality disorders: a comparative study of three treatment programs. *Am J Psychiatry* 2004; **161**: 1463–70.
- 443 Pearce S, Scott L, Attwood G, et al. Democratic therapeutic community treatment for personality disorder: randomised controlled trial. *Br J Psychiatry* 2017; **210**: 149–56.
- 444 Sander LB, Lemor ML, Van der Sloot RJA, et al. A systematic evaluation of mobile health applications for the prevention of suicidal behavior or non-suicidal self-injury. *Front Digit Health* 2021; **3**: 689692.
- 445 Cliffe B, Tingley J, Greenhalgh I, Stallard P. mHealth interventions for self-harm: scoping review. *J Med Internet Res* 2021; **23**: e25140.
- 446 Russell K, Rasmussen S, Hunter SC. Does mental well-being protect against self-harm thoughts and behaviors during adolescence? A six-month prospective investigation. *Int J Environ Res Public Health* 2020; **17**: 6771.
- 447 Rose G. Sick individuals and sick populations. *Int J Epidemiol* 1985; **14**: 32–38.
- 448 Yip PSF. A public health approach to suicide prevention. *Hong Kong J Psychiatry* 2005; **15**: 29–32.
- 449 Steeg S, Carr MJ, Mok PLH, et al. Temporal trends in incidence of hospital-treated self-harm among adolescents in Denmark: national register-based study. *Soc Psychiatry Psychiatr Epidemiol* 2020; **55**: 415–21.
- 450 Gunnell D, Appleby L, Arensman E, et al. Suicide risk and prevention during the COVID-19 pandemic. *Lancet Psychiatry* 2020; **7**: 468–71.
- 451 Pirkis J, Gunnell D, Shin S, et al. Suicide numbers during the first 9–15 months of the COVID-19 pandemic compared with pre-existing trends: an interrupted time series analysis in 33 countries. *EClinicalMedicine* 2022; **51**: 101573.
- 452 Steeg S, John A, Gunnell D, et al. The impact of the COVID-19 pandemic on health service utilisation following self-harm: a systematic review. *Br J Psychiatry* 2022; **221**: 603–12.
- 453 Lee S, Kim C-J, Kim DH. A meta-analysis of the effect of school-based anti-bullying programs. *J Child Health Care* 2015; **19**: 136–53.
- 454 Wasserman D, Hoven CW, Wasserman C, et al. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *Lancet* 2015; **385**: 1536–44.
- 455 Quarshie EN-B, Waterman MG, House AO. Adolescent self-harm in Ghana: a qualitative interview-based study of first-hand accounts. *BMC Psychiatry* 2020; **20**: 275.
- 456 Adinkrah M. Anti-suicide laws in nine African countries: criminalization, prosecution and penalization. *Afr J Criminol Justice Stud* 2016; **9**: 279–92.
- 457 Mishara BL, Weisstub DN. The legal status of suicide: a global review. *Int J Law Psychiatry* 2016; **44**: 54–74.
- 458 MacDonald S, Sampson C, Turley R, et al. Patients' experiences of emergency hospital care following self-harm: systematic review and thematic synthesis of qualitative research. *Qual Health Res* 2020; **30**: 471–85.
- 459 No authors listed. Mentally unwell or criminal? My experience of being criminalised for my mental health. Aug 19, 2020. <https://recoveryinthebin.org/2020/08/19/mentally-unwell-or-criminal/> (accessed April 2, 2023).
- 460 Thomson A, Eales S, McAllister E, Molodynski A. CriSiS-SR: criminal sanctions for self-harm or suicidality—scoping review. Nov 18, 2021. <https://osf.io/ytqxm> (accessed April 2, 2023).
- 461 No authors listed. Commentary: 'I've lost count of the times my door has been broken by the police'. *BMJ* 2017; **356**: j1165.
- 462 Thomson AB, Eales S, McAllister E, Molodynski A. Criminal sanctions for suicidality in the 21st Century UK. *Br J Psychiatry* 2022; **221**: 1–2.
- 463 StopSIM Coalition. Category archives: coalition statements: findings from the Freedom of Information request to Hampshire Constabulary. 2022. <https://stopsim.co.uk/category/coalition-statements/> (accessed April 2, 2023).
- 464 Chu C, Buchman-Schmitt JM, Stanley IH, et al. The interpersonal theory of suicide: a systematic review and meta-analysis of a decade of cross-national research. *Psychol Bull* 2017; **143**: 1313–45.
- 465 Hamza CA, Stewart SL, Willoughby T. Examining the link between nonsuicidal self-injury and suicidal behavior: a review of the literature and an integrated model. *Clin Psychol Rev* 2012; **32**: 482–95.
- 466 WHO. Preventing suicide: a global imperative. 2014. <https://www.who.int/publications/i/item/9789241564779> (accessed April 2, 2023).
- 467 Berman AL. Estimating the population of survivors of suicide: seeking an evidence base. *Suicide Life Threat Behav* 2011; **41**: 110–16.
- 468 Cerel J, Brown MM, Maple M, et al. How many people are exposed to suicide? Not six. *Suicide Life Threat Behav* 2019; **49**: 529–34.
- 469 Manuweera G, Eddleston M, Egodage S, Buckley NA. Do targeted bans of insecticides to prevent deaths from self-poisoning result in reduced agricultural output? *Environ Health Perspect* 2008; **116**: 492–95.
- 470 WHO. LIVE LIFE: an implementation guide for suicide prevention in countries. Geneva: World Health Organization, 2021.
- 471 Decker MR, Wilcox HC, Holliday CN, Webster DW. An integrated public health approach to interpersonal violence and suicide prevention and response. *Public Health Rep* 2018; **133** (suppl 1): 65–79S.
- 472 Roberts T, Miguel Esponda G, Torre C, Pillai P, Cohen A, Burgess RA. Reconceptualising the treatment gap for common mental disorders: a fork in the road for global mental health? *Br J Psychiatry* 2022; **221**: 553–57.
- 473 Asare-Doku W, Osafo J, Akotia CS. Comparing the reasons for suicide from attempt survivors and their families in Ghana. *BMC Public Health* 2019; **19**: 412.
- 474 Asare-Doku W, Osafo J, Akotia CS. The experiences of attempt survivor families and how they cope after a suicide attempt in Ghana: a qualitative study. *BMC Psychiatry* 2017; **17**: 178.
- 475 Farrelly T. The Aboriginal suicide and self-harm help-seeking quandary. *Aborig Isl Health Work* 2008; **32**: 11–15.

- 476 Chandler MJ, Dunlop WL. Cultural wounds require cultural medicines. In: Greenwood M, de Leeuw S, Lindsay NM, Reading C, eds. *Determinants of Indigenous peoples' health in Canada: beyond the social*, 2nd edn. Toronto, ON: Canada Scholars' Press, 2015: 147–60.
- 477 Inuit Tapiriit Kanatami. National Inuit suicide prevention strategy. 2016. <https://www.itk.ca/national-inuit-suicide-prevention-strategy/> (accessed April 2, 2023).
- 478 Sámi Norwegian National Advisory Unit on Mental Health and Substance Abuse, Saami Council. Plan for suicide prevention among Sami people in Norway, Sweden, and Finland. 2017. https://static1.squarespace.com/static/5dfb35a66f00d54ab0729b75/t/5e1efe6a16e8b24815a570e6/1579089522996/Suicide_plan_EN.pdf (accessed April 2, 2023).
- 479 Chandler M, Lalonde C. Cultural continuity as a protective factor against suicide in First Nations youth. *Horizons* 2008; **10**: 68–72.
- 480 Eades S, Eades F, McCaullay D, Nelson L, Phelan P, Stanley F. Australia's First Nations' response to the COVID-19 pandemic. *Lancet* 2020; **396**: 237–38.
- 481 Crawford A. Project CREATeS: youth engagement in suicide prevention. *Lancet* 2019; **394**: 1222–23.
- 482 Wright M, Getta AD, Green AO, et al. Co-designing health service evaluation tools that foreground First Nation worldviews for better mental health and wellbeing outcomes. *Int J Environ Res Public Health* 2021; **18**: 8555.
- 483 Dudgeon P, Calma T, Milroy J, et al. Indigenous governance for suicide prevention in Aboriginal and Torres Strait Islander communities: a guide for primary health networks. Perth, WA: University of Western Australia, 2018.
- 484 Gee G, Dudgeon P, Schultz C, Hart A, Kelly K. Aboriginal and Torres Strait Islander social and emotional wellbeing. In: Dudgeon P, Milroy H, Walker R, eds. *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice*, 2nd edn. Canberra, ACT: Commonwealth of Australia, 2014: 55–68.
- 485 Mia T, Dudgeon P, Mascall C, Grogan G, Murray B, Walker R. An evaluation of the National Empowerment Project Cultural, Social, and Emotional Wellbeing Program. *J Indig Wellbeing* 2017; **2**: 3.
- 486 Appleby G, Davis M. The Uluru Statement and the promises of truth. *Aust Hist Stud* 2018; **49**: 501–09.
- 487 Sones R, Hopkins C, Manson S, Watson R, Durie M, Naquin V. The Wharerata Declaration—the development of indigenous leaders in mental health. *Int J Leadersh Public Serv* 2010; **6**: 53–63.
- 488 Milroy H, Dudgeon P, Walker R. Community life and development programs—pathways to healing. In: Dudgeon P, Milroy H, Walker R, eds. *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice*. 2nd ed. Canberra, ACT: Commonwealth of Australia, 2014: 419–36.
- 489 Wirhana R, Smith C. Historical trauma, healing and wellbeing in Māori communities. *MAI Journal* 2014; **3**: 197–210.
- 490 National Congress of American Indians. Tribal nations and the United States: an introduction. February, 2020. <https://www.ncai.org/about-tribes> (accessed April 2, 2023).
- 491 Stoor JPA, Eriksen HA, Silviken AC. Mapping suicide prevention initiatives targeting Indigenous Sámi in Nordic countries. *BMC Public Health* 2021; **21**: 2035.
- 492 Smith LT. *Decolonizing methodologies: research and Indigenous peoples*, 3rd edn. London: Zed Books, 2021. <https://doi.org/10.5040/9781350225282>.
- 493 Suicide Prevention Resource Center. Expanding suicide prevention to include upstream approaches. 2012. <https://sprc.org/event-training/expanding-suicide-prevention-to-include-upstream-approaches/> (accessed July 22, 2024).
- 494 Wyman PA. Developmental approach to prevent adolescent suicides: research pathways to effective upstream preventive interventions. *Am J Prev Med* 2014; **47** (suppl 2): S251–56.
- 495 National Aboriginal Health Strategy Working Party. A national Aboriginal health strategy. Canberra, ACT: Australian Government Department of Aboriginal Affairs, 1989.
- 496 The Aboriginal and Torres Strait Islander Healing Foundation Development Team. Voices from the campfires: establishing the Aboriginal and Torres Strait Islander Healing Foundation. Oct 5, 2009. <https://apo.org.au/node/19232> (accessed April 2, 2023).
- 497 Marsh TN, Coholic D, Cote-Meek S, Najavits LM. Blending Aboriginal and Western healing methods to treat intergenerational trauma with substance use disorder in Aboriginal peoples who live in northeastern Ontario, Canada. *Harm Reduct J* 2015; **12**: 14.
- 498 Bourke S, Wright A, Guthrie J, Russell L, Dunbar T, Lovett R. Evidence review of Indigenous culture for health and wellbeing. *Int J Health Wellness Soc* 2018; **8**: 11–27.
- 499 Colquhoun S, Dockery AM. The link between Indigenous culture and wellbeing: qualitative evidence for Australian Aboriginal peoples. January, 2012. <https://nla.gov.au/nla.obj-2496469627/view> (accessed April 2, 2023).
- 500 Stoor JPA, San Sebastián M. Sametingets individuella analys för nationell strategi psykisk hälsa och suicidprevention. August 2021. <https://www.sametinget.se/160565> (accessed April 2, 2023).
- 501 Simpson LB. A short history of the blockade: giant beavers, diplomacy, and regeneration. Edmonton, AB: University of Alberta Press, 2021.
- 502 Gone JP. Redressing First Nations historical trauma: theorizing mechanisms for indigenous culture as mental health treatment. *Transcult Psychiatry* 2013; **50**: 683–706.
- 503 Osborne E, de la Sablonnière R. Understanding my culture means understanding myself: the function of cultural identity clarity for personal identity clarity and personal psychological well-being. *J Theory Soc Behav* 2014; **44**: 436–58.
- 504 Dockery AM. Inter-generational transmission of Indigenous culture and children's wellbeing: evidence from Australia. *Int J Intercult Relat* 2020; **74**: 80–93.
- 505 Johnson-Jennings M, Billiot S, Walters K. Returning to our roots: tribal health and wellness through land-based healing. *Genealogy* 2020; **4**: 91.
- 506 Pihama L, Smith LT, Evans-Campbell T, et al. Investigating Māori approaches to trauma informed care. *J Indig Wellbeing* 2017; **2**: 18–31.
- 507 Thomas D, Mitchell T, Arseneau C. Re-evaluating resilience: from individual vulnerabilities to the strength of cultures and collectivities among Indigenous communities. *Resilience* 2016; **4**: 116–29.
- 508 Burrin C, Daniels NF, Cardinal RN, Hayhurst C, Christmas D, Zimbron J. Iatrogenic complications of compulsory treatment in a patient presenting with an emotionally unstable personality disorder and self-harm. *Case Rep Psychiatry* 2021; **2021**: 6615723.
- 509 Harris J. Self-harm: cutting the bad out of me. *Qual Health Res* 2000; **10**: 164–73.
- 510 Jeffery R. Normal rubbish: deviant patients in casualty departments. *Sociol Health Illn* 1979; **1**: 90–107.
- 511 Harrison D. *Understanding self-harm*. London: Mind, 1994.
- 512 Strike C, Rhodes AE, Bergmans Y, Links P. Fragmented pathways to care: the experiences of suicidal men. *Crisis* 2006; **27**: 31–38.
- 513 Monteux S, Monteux A. Human encounters: the core of everyday care practice. *Int J Soc Pedagog* 2020; **9**: 15.
- 514 Boyle D, Harris M. The challenge of co-production: how equal partnerships between professionals and the public are crucial to improving public services. Nov 4, 2013. <https://www.nesta.org.uk/report/the-challenge-of-co-production/> (accessed April 2, 2023).
- 515 Lambert N, Carr S. 'Outside the Original Remit': co-production in UK mental health research, lessons from the field. *Int J Ment Health Nurs* 2018; **27**: 1273–81.
- 516 Faulkner A, Carr S, Gould D, et al. 'Dignity and respect': an example of service user leadership and co-production in mental health research. *Health Expect* 2021; **24** (suppl 1): 10–19.
- 517 Fortune S, Sinclair J, Hawton K. Adolescents' views on preventing self-harm. A large community study. *Soc Psychiatry Psychiatr Epidemiol* 2008; **43**: 96–104.
- 518 Cox G, Hetrick S. Psychosocial interventions for self-harm, suicidal ideation and suicide attempt in children and young people: What? How? Who? and Where? *Evid Based Ment Health* 2017; **20**: 35–40.
- 519 Franits LE. Nothing about us without us: searching for the narrative of disability. *Am J Occup Ther* 2005; **59**: 577–79.
- 520 Braun M, Till B, Pirkis J, Niederkrotenthaler T. Effects of suicide prevention videos developed by and targeting adolescents: a randomized controlled trial. *Eur Child Adolesc Psychiatry* 2023; **32**: 847–57.

- 521 Thabrew H, Fleming T, Hetrick S, Merry S. Co-design of eHealth interventions with children and young people. *Front Psychiatry* 2018; **9**: 481.
- 522 Thorn P, Hill NTM, Lamblin M, et al. Developing a suicide prevention social media campaign with young people (The #Chatsafe Project): co-design approach. *JMIR Ment Health* 2020; **7**: e17520.
- 523 Black Dog Institute. What can be done to decrease suicidal behaviour in Australia? October, 2020. <https://www.blackdoginstitute.org.au/suicide-prevention-white-paper/> (accessed April 2, 2023).
- 524 Shand F, Woodward A, McGill K, et al. Suicide aftercare services: an evidence check rapid review brokered by the Sax Institute for the NSW Ministry of Health. Jan 29, 2020. <https://www.saxinstitute.org.au/publications/evidence-check-library/suicide-aftercare-services/> (accessed April 2, 2023).
- 525 Carbonell Á, Navarro-Pérez J-J, Mestre M-V. Challenges and barriers in mental healthcare systems and their impact on the family: a systematic integrative review. *Health Soc Care Community* 2020; **28**: 1366–79.
- 526 McKay K, Shand F. Advocacy and luck: Australian healthcare experiences following a suicide attempt. *Death Stud* 2018; **42**: 392–99.
- 527 Kapur N, Steeg S, Webb R, et al. Does clinical management improve outcomes following self-harm? Results from the Multicentre Study of Self-Harm in England. *PLoS One* 2013; **8**: e70434.
- 528 Aggarwal S, Patton G, Berk M, Patel V. Psychosocial interventions for self-harm in low-income and middle-income countries: systematic review and theory of change. *Soc Psychiatry Psychiatr Epidemiol* 2021; **56**: 1729–50.
- 529 Niederkrotenthaler T, Braun M, Pirkis J, et al. Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 2020; **368**: m575.
- 530 Vijayakumar L, Shastri M, Fernandes TN, et al. Application of a scorecard tool for assessing and engaging media on responsible reporting of suicide-related news in India. *Int J Environ Res Public Health* 2021; **18**: 6206.
- 531 Cheng Q, Lui C, Ip FWL, Yip PSF. Typology and impact of YouTube videos posted in response to a student suicide crisis: social media metrics and content analyses. *JMIR Ment Health* 2021; **8**: e15551.
- 532 Niederkrotenthaler T, Tran US, Gould M, et al. Association of Logic's hip hop song "1-800-273-8255" with Lifeline calls and suicides in the United States: interrupted time series analysis. *BMJ* 2021; **375**: e067726.
- 533 Sinyor M, Williams M, Zaheer R, et al. The association between Twitter content and suicide. *Aust N Z J Psychiatry* 2021; **55**: 268–76.
- 534 Till B, Arendt F, Scherr S, Niederkrotenthaler T. Effect of educative suicide prevention news articles featuring experts with vs without personal experience of suicidal ideation: a randomized controlled trial of the Papageno effect. *J Clin Psychiatry* 2018; **80**: 17m11975.
- 535 Khasawneh A, Chalil Madathil K, Dixon E, Wiśniewski P, Zinzow H, Roth R. Examining the self-harm and suicide contagion effects of the Blue Whale Challenge on YouTube and Twitter: qualitative study. *JMIR Ment Health* 2020; **7**: e15973.
- 536 Lewis SP, Heath NL, Michal NJ, Duggan JM. Non-suicidal self-injury, youth, and the Internet: what mental health professionals need to know. *Child Adolesc Psychiatry Ment Health* 2012; **6**: 13.
- 537 Niederkrotenthaler T, Till B. Effects of suicide awareness materials on individuals with recent suicidal ideation or attempt: online randomised controlled trial. *Br J Psychiatry* 2020; **217**: 693–700.
- 538 Niederkrotenthaler T, Till B, Kirchner S, et al. Effects of media stories of hope and recovery on suicidal ideation and help-seeking attitudes and intentions: systematic review and meta-analysis. *Lancet Public Health* 2022; **7**: e156–68.
- 539 Pirkis JE, Burgess PM, Francis C, Blood RW, Jolley DJ. The relationship between media reporting of suicide and actual suicide in Australia. *Soc Sci Med* 2006; **62**: 2874–86.
- 540 Sinyor M, Schaffer A, Nishikawa Y, et al. The association between suicide deaths and putatively harmful and protective factors in media reports. *CMAJ* 2018; **190**: E900–07.
- 541 King K, Schlichthorst M, Turnure J, Phelps A, Spittal MJ, Pirkis J. Evaluating the effectiveness of a website about masculinity and suicide to prompt help-seeking. *Health Promot J Austr* 2019; **30**: 381–89.
- 542 Woods A, Hart A, Spandler H. The recovery narrative: politics and possibilities of a genre. *Cult Med Psychiatry* 2022; **46**: 221–47.
- 543 Make Space, National Survivor User Network, Self injury Support. Open letter on self-harm and the Online Safety Bill: a call for caution, nuance, and care. April 24, 2023. <https://www.nsun.org.uk/news/open-letter-on-self-harm-and-the-online-safety-bill-make-space-and-self-injury-support/> (accessed April 29, 2023).
- 544 Marchant A, Hawton K, Burns L, Stewart A, John A. Impact of web-based sharing and viewing of self-harm-related videos and photographs on young people: systematic review. *J Med Internet Res* 2021; **23**: e18048.
- 545 WHO, International Association for Suicide Prevention. Preventing suicide: a resource for media professionals, 2017 update. 2017. <https://apps.who.int/iris/handle/10665/258814> (accessed April 2, 2023).
- 546 Bellairs-Walsh I, Perry Y, Kryszynska K, et al. Best practice when working with suicidal behaviour and self-harm in primary care: a qualitative exploration of young people's perspectives. *BMJ Open* 2020; **10**: e038855.
- 547 Robinson J, Hill NTM, Thorn P, et al. The #chatsafe project. Developing guidelines to help young people communicate safely about suicide on social media: a Delphi study. *PLoS One* 2018; **13**: e0206584.
- 548 Mo PKH, Ko TT, Xin MQ. School-based gatekeeper training programmes in enhancing gatekeepers' cognitions and behaviours for adolescent suicide prevention: a systematic review. *Child Adolesc Psychiatry Ment Health* 2018; **12**: 29.
- 549 Torok M, Calear AL, Smart A, Nicolopoulos A, Wong Q. Preventing adolescent suicide: a systematic review of the effectiveness and change mechanisms of suicide prevention gatekeeping training programs for teachers and parents. *J Adolesc* 2019; **73**: 100–12.
- 550 Bailey E, Spittal MJ, Pirkis J, Gould M, Robinson J. Universal suicide prevention in young people. *Crisis* 2017; **38**: 300–08.
- 551 Montague AE, Varcin KJ, Simmons MB, Parker AG. Putting technology into youth mental health practice. *SAGE Open* 2015; published online April 15. <https://doi.org/10.1177/2158244015581019>.
- 552 Dodemaide P, Joubert L, Merolli M, Hill N. Exploring the therapeutic and nontherapeutic affordances of social media use by young adults with lived experience of self-harm or suicidal ideation: a scoping review. *Cyberpsychol Behav Soc Netw* 2019; **22**: 622–33.
- 553 Turnbull T. Sextortion case: two arrested in Nigeria after Australian boy's suicide. BBC News, April 8, 2024. [https://www.bbc.co.uk/news/world-australia-68720247/](https://www.bbc.co.uk/news/world-australia-68720247) (accessed April 26, 2024).
- 554 No authors listed. Molly Russell: social media users 'at risk' over self-harm inquest delay. BBC News, Feb 8, 2021. <https://www.bbc.co.uk/news/uk-england-london-55986728/> (accessed April 26, 2024).
- 555 Ofcom. Children and parents: media use and attitudes report 2020/21. April 28, 2021. https://www.ofcom.org.uk/_data/assets/pdf_file/0025/217825/children-and-parents-media-use-and-attitudes-report-2020-21.pdf (accessed April 26, 2024).
- 556 UK Parliament. Online Safety Act 2023 (c. 50). <https://bills.parliament.uk/bills/3137> (accessed April 26, 2024).
- 557 Susi K, Glover-Ford F, Stewart A, Knowles Bevis R, Hawton K. Research review: viewing self-harm images on the internet and social media platforms: systematic review of the impact and associated psychological mechanisms. *J Child Psychol Psychiatry* 2023; **64**: 1115–39.
- 558 Valkenburg PM, Meier A, Beyens I. Social media use and its impact on adolescent mental health: an umbrella review of the evidence. *Curr Opin Psychol* 2022; **44**: 58–68.
- 559 Sanders T, Noetel M, Parker P, et al. An umbrella review of the benefits and risks associated with youths' interactions with electronic screens. *Nat Hum Behav* 2024; **8**: 82–99.
- 560 Haidt J. The anxious generation: how the great rewiring of childhood is causing an epidemic of mental illness. New York, NY: Penguin Press, 2024.
- 561 Etchells P. Unlocked: the real science of screen time (and how to spend it better). London: Piatkus, 2024.
- 562 Levitz E. What the evidence really says about social media's impact on teens' mental health: did smartphones actually "destroy" a generation? *Vox*, April 12, 2024. <https://www.vox.com/24127431/smartphones-young-kids-children-parenting-social-media-teen-mental-health/> (accessed April 26, 2024).

- 563 Orben A, Przybylski AK. The association between adolescent well-being and digital technology use. *Nat Hum Behav* 2019; **3**: 173–82.
- 564 Orben A, Przybylski AK. Reply to: underestimating digital media harm. *Nat Hum Behav* 2020; **4**: 349–51.
- 565 Twenge JM, Haidt J, Joiner TE, Campbell WK. Underestimating digital media harm. *Nat Hum Behav* 2020; **4**: 346–48.
- 566 Tang S, Werner-Seidler A, Torok M, Mackinnon AJ, Christensen H. The relationship between screen time and mental health in young people: a systematic review of longitudinal studies. *Clin Psychol Rev* 2021; **86**: 102021.
- 567 Twenge JM, Haidt J, Lozano J, Cummins KM. Specification curve analysis shows that social media use is linked to poor mental health, especially among girls. *Acta Psychol* 2022; **224**: 103512.
- 568 Kleemans M, Daalman S, Carbaat I, Anschütz D. Picture perfect: the direct effect of manipulated Instagram photos on body image in adolescent girls. *Media Psychol* 2018; **21**: 93–110.
- 569 Cunningham S, Hudson CC, Harkness K. Social media and depression symptoms: a meta-analysis. *Res Child Adolesc Psychopathol* 2021; **49**: 241–53.
- 570 Tørmoen AJ, Øverlien M, Kildahl AT, Walby FA, Rossow I. A nationwide study on time spent on social media and self-harm among adolescents. *Sci Rep* 2023; **13**: 19111.
- 571 Stade EC, Stirman SW, Ungar LH, et al. Large language models could change the future of behavioral healthcare: a proposal for responsible development and evaluation. *Npj Ment Health Res* 2024; **3**: 12.
- 572 Xu X, Yao B, Dong Y, et al. Mental-LLM: leveraging large language models for mental health prediction via online text data. *Proc ACM Interact Mob Wearable Ubiquitous Technol* 2024; **8**: 1–32.
- 573 The US Surgeon General's Advisory. Social media and youth mental health. 2023. <https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf> (accessed April 26, 2023).
- 574 Coleman C. Social media: potential harm to children. Jan 17, 2022. <https://lordslibrary.parliament.uk/social-media-potential-harm-to-children/> (accessed April 26, 2024).
- 575 Fleischmann A, Bertolote JM, Wasserman D, et al. Effectiveness of brief intervention and contact for suicide attempters: a randomized controlled trial in five countries. *Bull World Health Organ* 2008; **86**: 703–09.
- 576 Wei S, Liu L, Bi B, et al. An intervention and follow-up study following a suicide attempt in the emergency departments of four general hospitals in Shenyang, China. *Crisis* 2013; **34**: 107–15.
- 577 Vijayakumar L, Armstrong G. Surveillance for self-harm: an urgent need in low-income and middle-income countries. *Lancet Psychiatry* 2019; **6**: 633–34.
- 578 Hajebi A, Ahmadzad-Asl M, Ershadi M, Nikfarjam A, Davoudi F. National registration system of suicide behaviors in Iran: barriers and challenges. *Arch Suicide Res* 2013; **17**: 416–25.
- 579 Osafo J, Akotia CS, Andoh-Arthur J, Quarshie EN-B. Attempted suicide in Ghana: motivation, stigma, and coping. *Death Stud* 2015; **39**: 274–80.
- 580 Abimbola S. The foreign gaze: authorship in academic global health. *BMJ Glob Health* 2019; **4**: e002068.
- 581 Gautier L, Sieleunou I, Kalolo A. Deconstructing the notion of “global health research partnerships” across Northern and African contexts. *BMC Med Ethics* 2018; **19** (suppl 1): 49.

Copyright © 2024 Elsevier Ltd. All rights reserved, including those for text and data mining, AI training, and similar technologies.