Editorial

Preventing Suicide – What Precedes Us Will Propel Us



Caroline Daly[1,2], Carl-Maria Mörch[3], and Olivia J. Kirtley[4]

[1]National Suicide Research Foundation, Cork, Ireland
[2]School of Public Health, University College Cork, Ireland
[3]Centre for Research and Intervention on Suicide, Ethical Issues and End-of-Life Practices (CRISE), Université du Québec à Montréal, Canada
[4]Center for Contextual Psychiatry, KU Leuven, Belgium

These are exciting times in which to be a suicide researcher, with a myriad of technologies at our fingertips, bigger datasets, new statistical methods, and breakthroughs in fighting stigma. However, these are also challenging times. Thousands of individuals around the world have died by suicide during the month of writing this editorial and we are still no better at predicting suicide than we were 50 years ago (Franklin et al., 2017).

So, what have we accomplished in the past 50 years of suicide research and prevention, and what could be the new challenges and frontiers for suicidology in the next 50 years?

As the International Association for Suicide Prevention (IASP) Early Career Group (ECG) looks forward to its second birthday, in this editorial we highlight some of the major advances that form the foundations upon which we are building our own lines of research as early career researchers; key shifts in policy and attitudes toward suicide, and changes in theoretical and methodological approaches to suicide research and prevention. We then go on to discuss some key emerging areas that are already reshaping the way we research and prevent suicide, including new technologies and developments in treatments and interventions. This is certainly not an exhaustive list of the many achievements that have been made, but highlights some notable accomplishments and challenges, past and present.

Policy: A Blueprint for Suicide Prevention

Governments have a unique role in suicide prevention, playing a key part in both the successes and shortcomings of prevention efforts. One of the most significant shifts in the past 50 years has been increased policy direction, which provides a national blueprint for suicide prevention. The role of government in preventing suicide is twofold: to maximize protective factors and minimize risk factors for suicide. Some of the greatest strides in suicide prevention include those pertaining to policy, namely, the decriminalization of suicide, means restriction, and the development of national strategies to prevent suicide.

Decriminalization arguably represents the greatest progress in suicide prevention over the past half century. However, suicide remains illegal in 25 countries and punishable in a further 20 (Mishara & Weisstub, 2016). Rooted in the belief that legal prosecution is a deterrent for suicide, there is notably no empirical evidence that decriminalization results in an increase in suicidal behavior (Mishara & Weisstub, 2016; World Health Organization [WHO], 2014). In fact, decriminalization facilitates suicide prevention by positively influencing mental health policy and care, suicide surveillance systems, and destigmatization (Aggarwal, 2015; Latha & Geetha, 2004). The IASP actively advocates for decriminalization via its dedicated, specialist working group. A crucial challenge facing advocates remains the juxtaposition of the decriminalization of suicide, and the cultural and religious values of many countries where attempting suicide remains a crime. Looking to the future, decriminalization is a key area requiring multidisciplinary knowledge sharing and planning.

Restricting access to lethal means of suicide is one of the few suicide prevention approaches with strong evidence of effectiveness (Zalsman et al., 2016). Effective means-restriction interventions implemented across the past five decades include: the detoxification of domestic gas (Gunnell, Middleton, & Frankel, 2000); the introduction of catalytic converters (Kendell, 1998); restrictions

of the sales, importation, and storage of pesticides (Knipe et al., 2017); restrictions regarding availability of paracetamol, selective serotonin reuptake inhibitors (SSRIs), and co-proxamol (Bergen et al., 2009; Hawton et al., 2012; Hawton et al., 2013); and the provision of interventions at suicide hotspots (Pirkis et al., 2015). Means restriction interventions work best when implemented in conjunction with other suicide prevention initiatives, and require evaluation to measure impact in a given context. Considering the evidence base and generalizability of means restriction interventions, customized means restriction interventions should be prioritized in countries where they are lacking. Additionally, countries with such measures already in place should continually monitor the ever-changing method patterns of suicidal behavior in order to effectively respond.

"Preventing Suicide: A Global Imperative," published in 2014 is the first global report on suicide prevention, representing a universal commitment by the World Health Organization (WHO) to guide and support suicide prevention activities in countries with and without active suicide prevention agendas (WHO, 2014). This report established that approximately 28 countries have developed a national suicide prevention strategy over the past 50 years (WHO, 2014). Matsubayashia and Ueda (2011) assert that national strategies are effective in preventing suicide in particular subgroups, namely, the elderly and young populations. The IASP, in conjunction with the WHO, acknowledges the great potential of national suicide prevention strategies, encouraging their development and supporting their implementation, particularly in low- and middle-income countries (https://www.iasp.info/effective_national_suicide_prevention_strategy_practice.php).

Beyond Legislation: Changing Attitudes Toward Suicide and Its Prevention

Even where decriminalization has occurred, stigmatizing attitudes can still be pervasive. Public awareness initiatives are a vital component of fighting stigma and there is a growing international public conversation about suicide, and mental health more generally. Launched in in 2003 by former IASP President Prof. Diego De Leo, World Suicide Prevention Day (WSPD) is an international initiative to raise awareness of suicide and its prevention. Since then, WSPD is marked on September 10 every year and the list of international activities to mark the occasion, such as the "Cycle Around the Globe" and "Light a Candle" events, continues to grow. October 10 marks annual World Mental Health Day, a WHO initiative that began in 2013 and raises awareness about mental health issues and mobilizes efforts supporting better mental health globally. Some examples of in-country awareness initiatives include the American Foundation for Suicide Prevention's "Out of the Darkness" walks that began in 2002 as a small grassroots movement to increase awareness of suicide and suicide loss, as well as to raise vital funds for research and prevention (see AFSP website at https://afsp.donordrive.com/index.cfm). In 2017, this movement had grown to an expected 415 community walks with 250,000 individuals taking part (AFSP, 2018). Similarly, Darkness Into Light walks initiated by Irish suicide crisis support organization Pieta House now involve 250,000 individuals at 160 locations worldwide (Pieta House, 2018). These are just some examples of the tireless in-country work being done to fight stigma and raise awareness of suicide prevention.

Beyond Legislation: Changing Attitudes Toward Suicide and Its Prevention

Several organizations are making positive changes in centralizing the voices of those with lived experience in research, policy-making, and advocacy, by introducing chapters and groups specifically for people who have survived a suicide attempt and those bereaved by suicide. These include Suicide Prevention Australia and the American Association of Suicidology, which also holds the annual Paul G. Quinnett Lived Experience Writing Contest, giving a powerful platform for sharing stories of hope and survivorship. This year, the IASP also launched a Lived Experience Special Interest Group, with the aim of sharing knowledge and good practice, and amplifying the voices of lived experience within IASP activities as well as on the broader, global stage.

In order to truly address the stigma and *othering* often faced by individuals who have lived experience of suicidal thoughts and behaviors, and those who have been bereaved by suicide, it is vital that we do not only look outward to public attitudes but also inward to attitudes of researchers and clinicians actively engaged in suicide research and prevention. Researchers and clinicians are also part of the public and, furthermore, individuals with lived experience are also researchers and clinicians; all too often these groups are spoken of as though they are mutually exclusive. Re-evaluation of existing practices and leading by example are crucial to fighting stigma around suicide. Between 2000 and 2015, 34% of articles published in *Crisis* and the other two specialist suicide journals (*Archives*

of Suicide Research and *Suicide and Life-Threatening Behavior*) contained the stigmatizing phrase "commit* suicide," which has connotations of suicide being a criminal offence (Nielsen, Padmanathan, & Knipe, 2016). Since the publication of Nielsen and coworkers' (2016) paper, *Crisis* now includes guidelines about appropriate and nonstigmatizing language in its author guidelines.

Evolving Approaches to Suicide Research

Much has also changed in our theoretical and practical approaches to suicide research. The past 15 years have seen the emergence of ideation-to-action models of suicidal behavior (Klonsky, Saffer, & Bryan, 2018), which posit that there are differences between the factors involved in the development of suicidal thoughts (ideation) and those that influence the transition from ideation to suicide attempts (actions). Joiner's interpersonal psychological theory (IPT; Joiner, 2005; Van Orden et al., 2010) was the first theoretical model of suicide to differentiate between factors influencing suicidal ideation and those influencing suicidal behavior, with suicidal behavior arising only in the simultaneous presence of thwarted belongingness, high burdensomeness, and acquired capability (Joiner, 2005).

More recently, a second generation of ideation-to-action models has emerged: the three-step theory (3ST; Klonsky & May, 2015) and the integrated motivational-volitional model (IMV; O'Connor, 2011; O'Connor & Kirtley, 2018). The 3ST theory contends that suicidal ideation arises in the co-presence of pain and hopelessness, developing into strong ideation if pain exceeds connectedness, and escalating further when an individual has the capability to make a suicide attempt (Klonsky & May, 2015). The IMV model (O'Connor & Kirtley, 2018) is a tripartite model comprising premotivational, motivational, and volitional phases, relating to background vulnerability, ideation and intention formation, and behavioral enactment, respectively. Volitional factors, such as exposure to the suicidal behavior of others and access to means, differ between individuals who ideate about suicide and those who make an attempt (O'Connor & Kirtley, 2018). The IPT, 3ST. and IMV all represent a shift away from psychiatric disorder as being the primary and sole explanation for suicide, to more multifaceted explanations that recognize the conjoint roles of psychological, social, and biological factors. More prospective research is needed in order to fully assess the hypothesized temporal relationships between variables within the models; as yet, there is a dearth of prospective studies in this area and, indeed, in suicide research as a whole.

Every single suicide is a tragedy, but death by suicide remains a statistically rare event. Even using suicide attempts as a proxy measure, studies can still be small and underpowered, potentially generating spurious conclusions or missing important effects. Psychological science in general is experiencing a replication crisis, with the methods of many landmark studies being irreproducible and/or their findings failing to be replicated. Thus far, clinical psychology and psychiatry have largely avoided the focus on replicability and reproducibility (Tackett, Brandes, King, & Markon, 2018); however, this does not mean that clinical psychology or psychiatry studies are more replicable or reproducible. These are key challenges for suicide research. Efforts should be made to replicate studies in order to ensure that their findings are well supported by evidence. Open science practices that promote transparency and replicability, such as preregistration of studies' hypotheses and analysis plans prior to data collection or analysis as well as sharing of data, code, and materials, are being increasingly adopted by other fields. Suicide research and prevention could reap significant positive benefits from adopting such approaches.

New Technologies, Media, and Suicide Prevention

Information and communication technologies are now fully integrated into the modern suicidologist's toolbox. Over the past 20 years, the Internet has transformed every aspect of our work: from understanding suicide to improving intervention (Mishara & Kerkhof, 2013). For instance, ecological momentary assessment (EMA) can help us better understand dynamic variations in suicidal ideation (Czyz, King, & Nahum-Shani, 2018; Kleiman et al., 2017) and contextual factors correlated with engaging in self-injury (Nock, Prinstein & Sterba, 2009). Technology can also help us map and understand how suicide contagion might occur, such as in the case of the rise in suicides by helium in Hong Kong (Yip et al., 2017).

Although promising, the Internet is a double-edged sword. It can be a great tool to improve prevention strategies (de Beurs, Kirtley, Kerkhof, Portzky, & O'Connor, 2015) and many organizations are now offering chat services or support apps, such as 113Online in The Netherlands, Zelfmoord1813 in Flanders, or the Samaritans in the UK and Ireland (Mokkenstorm, Huisman, & Kerkhof, 2012). At the same time, the Internet provides easy access to prosuicide content (Westerlund, 2012) and can facilitate harmful phenomenon such as cyberbullying (Boyd, 2015) and suicide pacts (Durkee, Hadlaczky, Westerlund, & Carli, 2011). This dark side of the Internet has led to

various legislative responses, such as the banning of pro-suicide websites in Australia (Pirkis, Neal, Dare, Blood, & Studdert, 2009).

The Internet is undoubtedly a key target for suicide prevention initiatives, but this also presents significant challenges. Technology changes rapidly and detailed information regarding suicide methods, including new and emerging methods, has become increasingly available over time (Biddle, Derges, Mars, & Heron, 2016). Furthermore, users keep handling new technologies and methods to obtain information on suicide. For instance, information on suicide and suicide methods can be found on regular web search engines (Biddle, Donovan, & Hawton, 2008) but also on parallel networks such as the Tor darknet (Mörch et al., 2018).

So, what does the future of technology hold for suicide prevention? In the near future, big data (Grunebaum, 2015) and artificial intelligence (AI; Luxton, 2014) are set to play an important role in health care, and specifically in suicide prevention. A recent study used machine learning to analyze the electronic health records (EHRs) of patients who engaged in self-injury and accurately predicted future suicide attempts (Walsh, Ribeiro, & Franklin, 2017). Other research has applied machine learning to 99,693 suicide-related documents found on South Korean social media, and discovered that academic pressure was one of the biggest contributors to South Korean adolescents' suicide risk (Song, Song, Seo, & Jin, 2016). The Dartmouth Durkheim Project went a step further by analyzing both EHRs and social media content for the veteran population in the United States, and the investigators are now attempting to create a near real-time monitoring system (Poulin, Thompson, & Bryan, 2016). As these advances in technology progress and become increasingly accurate, privacy issues are likely to come to the fore. Care will need to be taken to balance the potential benefits of identifying and intervening with suicidal individuals against the potential harms of invading people's privacy.

More and more research is being conducted on technology's impact and novel ways of using it to save lives, but few of these initiatives have been properly evaluated or replicated in a different context. It remains a challenge to establish best practices in this ever-changing domain, and this emerging subfield of suicide research and prevention is one particular area that would be greatly strengthened by more evaluation and study replication (see our section on evolving approaches to suicide research).

The Provision of Health Care and Treatment Options

Reforms in the provision of treatment and health care over the past decades have changed the care pathway for patients who engage in suicidal behavior. In high-income countries, care has shifted from institutional environments to community-based care, with remarkable decreases in psychiatric inpatient facilities, and the expansion of community-based services. There has been much debate regarding the impact of deinstitutionalization on suicide rates (Hansen, Jacobsen, &, Arnesen, 2001; Pirkola, Sohlman, Heilä, Wahlbeck, 2007), with some studies citing that the abolition of psychiatric hospital-based care systems has been a positive policy shift in terms of attitudes to and understanding of mental illness (Chesters, 2005; Hickling, Robertson-Hickling, & Paisley, 2011). However, research has achieved no consensus on the overall impact of deinstitutionalization, with others questioning whether the dissolution of the institutional care system has any long-term impact on stigma reduction (Wright, Gronfein, & Owens, 2000) or whether it leaves a void for those experiencing chronic suicidal feelings (Goldney, 2003).

Existing pharmacological treatment options that have been shown to be efficacious in reducing suicidality include agents such as lithium and selected antidepressants (Zalsman et al., 2016). Psychological treatments with illustrated efficacy in adult populations include cognitive and dialectical behavioral therapies; however, further research is warranted regarding the impact of these therapies on adolescents (Hawton et al., 2015; Hawton et al., 2016). Collaborative care via primary health-care services has also been shown to be useful (Hawton et al., 2016; Zalsman et al., 2016). However, further research is needed to assess effective interventions for subgroups, including adolescents (Hawton et al., 2015). One intervention with a growing evidence base for reducing suicidal behavior is safety planning. An alternative to no-suicide contracts, safety planning interventions are most effective when combined with ongoing active outreach, filling the care gap when patients who have engaged in suicidal behavior leave the emergency department (Stanley et al., 2018). Further research is required examining the broader generalizability of safety planning interventions to non-veterans and individuals not immediately after discharge following a suicide attempt.

Digital provision of health care is expanding, and researchers and practitioners can now benefit from online chats (Predmore et al., 2017) and social media (Carli, 2016). Robinson and colleagues' (2016) recent systematic review highlighted that social media platforms, including Facebook, can provide anonymous, convenient,

and nonjudgmental forums for at-risk individuals, enabling professionals to instantaneously reach a greater number of individuals in need, without geographical barriers. Simultaneously, companies are developing initiatives to prevent suicide on their platforms, such as the recently publicized use of AI by Facebook to detect potentially at-risk users and connect them with automated support or information services (Eastwood, 2017).

Concluding Remarks

Over the past 50 years, suicide prevention has established itself as an indispensable and ever-expanding field of health science. The multicausal nature of suicide challenges us to adopt a collaborative approach, integrating prevention efforts within and between disciplines, organizations and agencies, professional levels, communities, and the public.

The notable advances highlighted in this editorial have all been the results of collaboration. In the current climate of decreasing resources allocated to suicide research and prevention, there has not been a time where working together to facilitate change has been more imperative. The formation of new groups within the suicidology research community, such as our own IASP ECG and the NetECR group, further foster collaboration between early and mid-career researchers, united by shared aspirations and strengthened by diverse experiences. The IASP ECG promotes networking and mentorship internationally between early career researchers, professionals, and experts in the field of suicidology. These groups not only enrich knowledge and productivity of their members, but by fostering collaboration they also function to cultivate and sustain the field of suicide prevention into the future.

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Caroline Daly, PhD candidate with the National Suicide Research Foundation (Ireland) is examining "The individual and ecological factors associated with drugs frequently used in non-fatal intentional drug overdose." Caroline also works as a research officer with the IASP and an ECG co-chair.

Carl-Maria Mörch, MPsy, Psychologist (France), PhD candidate at UQAM, Canada, IASP ECG co-chair. He works on the use of big data and artificial intelligence to prevent suicide, with a focus on the ethical challenges. He has recently worked on the TOR Darknet and started a primary prevention program with pregnant women using text messages.

Olivia Kirtley, PhD, is an IASP ECG co-chair and a postdoctoral research fellow in the Center for Contextual Psychiatry at KU Leuven in Belgium where she leads "SIGMA," a large-scale longitudinal study of adolescent mental health and development using experience sampling methods.

Caroline Daly
National Suicide Research Foundation Ireland
Room 4.28
Western Gateway Building
Western Road
Cork
Ireland
carolinedaly@ucc.ie