Adopting An Ecological Public Health Approach to Suicide Prevention - the Cases of Turkey and Canada: Why Can't We Get There?

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SUMMARY

Suicide remains as a major public health problem in both Turkey and Canada; there has been a slight upward trend in suicide rates from the 1950s until present day. These nations also share the same distribution pattern of suicide wherein rural and remote populations have a significantly elevated risk of suicide compared to their urban counterparts. In both nations, regrettably, suicide prevention has, in the main, focused narrowly on identifying proximate, individual level risk factors, rather than on population mental health. However national statistical data on suicide rates indicates that such prevention strategies have achieved only limited success. In light of these data, there is a pressing need to reconsider our approach to preventing suicide and thus this paper: 1) provides an overview of ecological approaches; 2) constructs an argument for an ecological approach to suicide prevention; 3) considers nascent examples from other federated countries that have enacted national strategies that may provide lessons for Turkey and Canada. Drawing on extant, international examples of ecological approaches to suicide prevention the authors make the argument that both Turkey and Canada need to embrace and enact such approaches, particularly given the efficacy of ecological public health approaches to reach rural and remote populations.

Keywords: Canada; ecological public health approach; rural and remote populations; suicide prevention; Turkey.

Introduction

It may come as something of surprise but the number of people who die by suicide worldwide is more than double that of people who die as a result of armed conflict.[1] The global epidemiological data, limitations notwithstanding, indicate that suicide remains as a major public health problem and that there are a number of broad trends evident.[2] One distinct trend is that many countries, including Turkey, Canada, and United States of America (USA) share the same distribution pattern of suicide wherein rural and remote populations have a significantly elevated risk of suicide compared to their urban counterparts.[2-7] Indeed, the official 2014 Turkish Statistical Data on suicide rates. indicate the three rural provinces that have the highest rate of completed suicide are eight to ten times higher than the three highest urban provinces. Furthermore, additional trends evident in the data are: 1) there has been a slight upward trend in global suicide rates from the 1950s until present day. Each of Turkey, Canada and the USA all show an upward trend in suicide rates during these decades.[8,9] 2) The formal and empirical study of suicide ('Suicidology') which began in earnest in the 1950s in North America, has not yet lead to a detectable, statistically significant reduction in national suicide rates in these countries.

The same upward global trend in death rates is not evident when one examines the corresponding data for other leading causes of death. Death rates resulting from Tuberculosis (TB), Cancer (Can), Heart Disease (HD) and Cerebral Vascular Accidents (Stroke/CVA) have all declined significantly during recent decades. Remington & Brownson (2016)[10] point out how during the past century advances in public health and health care have increased life expectancy by approximately 30 years and led to dramatic changes in the leading causes of death. Though it may not be easy for suicidologists and mental health practitioners to acknowledge, in comparison to other major public health concerns/causes of death, our efforts to reduce national suicide rates have not been particularly successful. Historically, the principal efforts to prevent suicide in Turkey and Canada have not focused on public health approaches; suicide has been viewed as a mental health issue traditionally addressed through clinical, individual-focused interventions. In light of these data, one can argue that there is a distinct need to reconsider our approach to suicide prevention; correspondingly, there is a strong case for considering alternative approaches or models. This may be even more necessitous in nations with large rural and remote populations where the most current data indicate suicide rates are highest. Accordingly, in this paper the authors will:

1. Juxtapose the evidence for four major (common) causes of death with the evidence vis a vis suicide prevention,

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2. Provide an overview of ecological approaches,

3. Consider nascent examples from other federated countries that have enacted national strategies that may provide lessons for Turkey and Canada and

4. Present an argument for an adopting an ecological, public health approach to suicide prevention.

So Far, Not So Good! Comparing the Changes in Mortality Rates for Major Causes of Death and Suicide During Recent Decades

Tuberculosis

According to the document 'Breathing in America,[11] tuberculosis is the greatest killer of people in recorded history, yet, significant progress has been made in minimizing the mortality resulting from this disease. In the early decades of the 19th century, over a third of all deaths in the USA were attributed to TB. Whereas CDC data show the deaths from Tuberculosis reached their lowest ever recorded level in the early 21st century.[12] Moreover, such dramatic improvements in the prevention and treatment of TB are not isolated to North America, the WHO Global Health Observatory data (2016) indicate that,[13] "There have been major advances in prevention, diagnosis and treatment of TB: mortality has fallen 47% since 1990. Effective diagnosis and treatment of TB saved an estimated 43 million lives between 2000 and 2014."

Cancer

According to the American Society of Clinical Oncology (2016) cancer mortality has declined an average of 1.5 percent annually over the past decade, with even greater annual declines in mortality rates for the four most common cancers: breast, prostate, lung, and colorectal cancers. Many factors have contributed to these reductions, including expanded treatment options, improved therapeutic outcomes, and *prevention efforts* (emphasis added). As a result, the number of cancer survivors in the United States is expected to grow from 14.5 million in 2014 to 19 million by 2024.[14]

Heart Disease

According to the American Heart Association (2015), significant progress has been made in the fight against heart disease. Death rates (per 100.000 inhabitants) have decreased 75% from 492.7 in 1970 to 170.5 in 2013. This can be explained by improved patient diagnosis and treatment; fewer people smoking, and lower blood pressure and total cholesterol levels; scientific research and medical advances; laws creating healthier environments; increased awareness about healthy living; and better emergency care.[15] As we can see, these differences are due not only to scientific aspects, but also to social aspects and ways of living.

Cerebral Vascular Accidents (Stroke)

According to the USA Department of Health and Human Services: Agency for Healthcare Research and Quality (2005)[16] and their report on the evaluation and treatment of strokes, the mortality rates due to stroke have declined for a number of populations in the twentieth century. The rate of decline in the USA, according to the report, was approximately 0.5% per year between 1900 and 1920, and approximately 1.5% per year from 1950 to1970. More recent data, compiled by the Stroke Center (2016)[17] reveal that from 1995–2005, the mortality rate for stroke fell 30% percent and the actual number of stroke deaths declined by 14% percent.

To summarize this section, for each of the four major causes of death there is persuasive epidemiological evidence that global mortality rates have declined significantly. Whereas in the realm of suicidology the epidemiological data do not support the same assertions. Global rates of suicide show a slight upwards trend; as an academic and clinical community of suicidologists we still do not fully understand why any given individual takes her/his own life; and while we have robust and validated instrumentation to gauge and 'measure' suicidal intent, our instrumentation do not gauge actual suicidal actions so well.[18,19] Moreover, given that we are now firmly embedded in the epoch of evidence-based practice, and given the limited progress we have made in suicidology so far, the most appropriate step would be to explore and consider alternate approaches to suicide prevention and care; and with that the authors advance the argument of considering and adopting ecological suicide prevention models.

An Overview of Ecological Public Health

Approaches to public health have undergone a dramatic change in recent years.[20,21] Ecological models are widely used in the field of public health.[22] However, suicide prevention efforts in Turkey and Canada have not historically emphasised ecological approaches to public health, although there are some examples.[23] This is despite their contemporaneous use and reported efficacy in related areas of public health (e.g. combatting obesity, smoking cessation, or combatting domestic violence).

Ecological public health approaches/models are predicated on the premise that health, behaviour and their determinants are inter-related.[21] Ecological approaches to health promotion seek to stimulate changes in the public's behaviour by means of identifying and subsequently targeting the environmental factors that are most likely to influence people's decisions and actions. In recognizing that health is influenced by a range of inter-related factors, ecological health promotion approaches consider a combination of individual, social, environmental, interpersonal, organizational, community and public policy issues/factors.[24-27] Ecologically-based

health promotion models regard it as axiomatic that no one, single factor can provide an adequate or comprehensive explanation as to why some people or groups are at higher risk of experiencing health challenges and problem. Such approaches thus attempt to target factors that have the most potential to lead to more healthy choices and behaviours. They consider the use of every available means that have a reasonably strong potential to ultimately contribute to lasting behavioural change.[21]

Ecological health promotion can be further elucidated by juxtaposing it with more traditional, 'individual-behavioural change' approaches. Such approaches are designed to modify the individual's (health-related) habits and lifestyle. They place most, if not all, of the responsibility for poor (or compromised) health on the individual, and in so doing largely ignore the causal complexity of poor health. Such 'life-style theories' ignore the connections between ill health and individual behavioural, social norms and rewards.[28-30] Arguably, 'individual-focused' approaches adopt an unrealistic behavioural model, one underpinned by a belief that if an individual is provided with information then he/she will undertake the necessary lifestyle/behavioural changes. Such approaches have: A) shown only limited efficacy restricted to short-term effects rather than sustained/longer-term impacts;[31,32] B) less efficacy in reaching socially isolated groups, including those with disproportionate rates for suicide, e.g. rural/remote communities.[30,33,34]

A Nascent Approach to Suicide Prevention: The Case for the Ecological Model

According to a number of authors/agencies,[1,12,33] suicide has traditionally been viewed as a mental health issue. In the significant majority of cases, it is responded to chiefly through individual level clinical interventions; most commonly interventions associated with 'treating depression'. As a result, suicide prevention has, in the main, focused narrowly on identifying proximate, individual level risk factors, rather than focusing on population mental health.[23] Lewis et al. (1997)[35] calculated that such strategies have a modest effect on a population's suicide rate, even when an effective intervention has been developed. While individual level risk factors should not be ignored, focusing on psychiatric morbidity alone is unhelpful.[33] Goldsmith et al., (2002)[36] contend that if ever a health problem required a multi-faceted and integrated understanding, one which takes into account all the relevant variables be they intra or extra personal, then suicide prevention is it. And the importance of considering socioeconomic factors was highlighted by Innamorati et al. (2009)[37] who found large socioeconomic inequalities present in their review of case of completed suicide reported between 1980 and 2008.

The World Health Organisation: Asian Pacific Region (2009)[38] endorse a public health, multi-layered and multidisciplinary approach to suicide prevention. They argue correspondingly that only strategies from multiple levels and disciplines can substantially reduce suicide and that,

"the public health approach…aims at changing the environment to protect people against diseases and changing the behaviours that put people at risk of getting diseases.…it is only when individuals representing every facet of our communities come together and work together to confront this serious problem can the tragedies and sufferings of affected families and friends be reduced."

Findings from multiple studies indicate that the majority of people who died by suicide, (half to three quarters), did not have any recent contact with mental health services prior to their deaths.[39-45] This evidence further underscores the need for a public health approach as it could 'capture' those potentially suicidal individuals who do not contact mental health services. Improving overall community mental health could reduce suicide more effectively than extensive efforts to identify the immensely suicidal individual; thus Knox et al. (2004) [33] conclude that, "Developing population risk reduction approaches for suicide, through prevention of its precursors in communities, could result in truly innovative (and potentially effective) programs for suicide prevention."

Cutcliffe and Stevenson (2008 a,b)[46,47] undertook an examination of national suicide prevention strategies to explore any areas of convergence or/and discord. Their findings indicated that many strategies shared a tacit, and in some cases more substantive endorsement (if not adoption), of ecological approaches to suicide prevention. For instance:

1. Community development and implementation of suicide prevention programmes,

2. Media education to improve reporting and portrayals of suicide in the media and,

3. Initiatives to reduce access to lethal means and methods of self-harm, are all policy directives that embody an ecological approach.

The Irish National Strategy for Action on Suicide Prevention[48] acknowledges the significant influence of socioeconomic factors on the alarming increases in suicide in Ireland over recent years, and suggests ecological suicide prevention efforts.

"As social changes have impacted on the nature and extent of suicidal behaviour in Ireland, efforts to address this serious public health issue must be located in the area of social policy as well as within the health sector".

A corresponding position has been adopted by some Australian mental health bodies and policy makers. Although

these authors acknowledge mental health problems can increase suicide risk, they argue that community and environmental factors must be considered and targeted for suicide prevention. These strategies concede that,

"The evidence suggests that while mental illness is associated with a high risk of suicide, there is often a complex interplay between psychological, social and environmental factors which may result in an individual choosing to end their life by suicide. Tasmanians need to tackle the issue of suicide in partnership, within their communities, to build both individual and community resilience".[49]

United States' Air Force's (USAF) recent suicide prevention effort is another substantive example that incorporates an ecological approach. In response to an alarming increase in suicide rates during the mid-1990s, top leadership within the USAF mandated that suicide prevention had to become a community-wide responsibility.[33] Key components of the program were: ongoing leadership commitment, consistent communication on suicide prevention, de-stigmatization of seeking mental health supports, improved collaboration among agencies, and the identification and training of 'everyday' gatekeepers. A significant and sustained drop in suicide rates were observed following dissemination of the program.

Federal Levels of Ecological Suicide Prevention

Restricting Access to Means of Suicide: The Example of 'Gun Control'

Restricting access to lethal means of suicide can help reduce the suicide rate.[50-52] Some authors indicating that such interventions are most effective when the method is popular, readily available in households and when used impulsively.[53] Other findings depict a more complicated picture.[46,47,52] Nevertheless, there is powerful evidence that restricting access to means should be included as part of a more comprehensive suicide prevention program and the authors draw on the example of restricting access to firearms.[53,54] Gagne et al. (2010)[55] examined whether or not stronger firearm regulations enacted with Bill C-17 in 1991 had an impact on suicide rates in Quebec, Canada. Their analysis demonstrated the pace of decline in suicide rates among men aged 15-34 was twice as high following the implementation of firearms legislation.

Ecological Suicide Prevention in the Armed Forces and Veterans – Some Encouraging Signs

The suicide rate in the USA military has received much attention during recent years as it increased post 2005 and seemed to peak in 2012. Official statistics contained in a Pentagon report show that for full-time soldiers, the suicide rate soared to 29.7 deaths per 100,000 in 2012. In response, the USA military established a Department of the Army-led Suicide Prevention Task Force[56] and this office developed new suicide prevention programs. Elements congruent with an ecological approach within such programs include: Deploying soldiers undergo pre-deployment health assessments, post-deployment health assessment during the re-deployment process, and post-deployment health reassessment after three to six months after redeployment. Additionally, screenings are done throughout the deployment phases to make sure all mental health needs are met. The office also introduced a "buddy care" system – wherein soldiers are strongly encouraged to confide in and talk to friends and members of their unit particularly when personal problems arise.

Suicide is the third leading cause of death in the Canadian Military.[57] The Report of the Canadian Forces Expert Panel on Suicide Prevention (2010)[58] recommended strategies and elements congruent with an ecological approach; e.g. education and awareness program, organizational level interventions to mitigate work stress, media engagement and screening and assessment including the regular Periodic Health Assessment. According to data collated by the Gulhane Military Medicine Academia (2017)[59] the suicide rate in the Turkish army in 2002 was 32/100,000 whereas, following interventions (such as the introduction of the 'buddy system'), the rate had decreased to 15/100,000. While these are encouraging trends, the suicide rate for Turkish soldiers is reported as to higher than for the civilian population is 4/100,0006. To summarize, for each of Turkey, Canada and the United States, there is evidence to show that the military has already adopted suicide prevention programs that incorporate ecological approaches, and moreover, that there appears to be some emerging evidence which indicates that these approaches had a positive impact.

Aboriginal Initiatives

The National Aboriginal Youth Suicide Prevention Strategy in 2013 focused on health promotion and protective factors, including promoting a strong sense of identity, meaning/purpose, community connectedness, etc. Through this program, Aboriginal people are provided funding to develop and implement evidence-based approaches

"To enhance positive mental health (defined as a state of well-being) throughout the lifespan and in a range of settings, including the home, school, workplace and community".[60]

Similarly, A Path Forward, the tripartite British Columbian (BC) Aboriginal Mental Wellness ten year plan[61] also embodies an ecological approach.

Suicide Prevention in Canadian Prisons

Suicide is the most common cause of death in the correctional system.[62,63] Prison suicide prevention strategies in

many nations include profiling key risk factors (segregation or bullying), correctional staff training, inmate screening, combating social and physical isolation and modifying the physical environment.[62] Ecologically-informed efforts may yet lead to further reductions. Public policy elements could re-examine the correctional system's five pillars: Incapacitation, Punishment, Retribution, Deterrence and Rehabilitation, and consider programs shown to promote hope and personal meaning.[64-66]

To summarize this section, the nascent examples of suicide prevention have generated promising evidence that population based, public health ecological approaches that support mental wellness and resiliency for whole communities, may be more effective than targeted at-risk programs. Given the cultural dissimilarities between Turkey, Canada and the USA, wholesale cross-transplantation of these ecological suicide prevention programs may be impracticable.[67] Even when evidence-based suicide prevention interventions have been established as valid and effective, they may still have limited applicability, utility and transportability to another dissimilar culture. However, where countries share broad demographic and similar patterns in the distribution of suicide; and where they each have large areas of rural and remote populations, then an argument can be constructed regarding the significant utility in learning from the lessons of these other countries. Ecological suicide prevention programs that have shown to be effective in one nation, may well have transferability and have applicability to the other nations.

Conclusion

Medical education is based on a Descartian, reductionist philosophy (Association of Faculties of Medicine in Canada [AFMC], 2014)[68] where the human body is viewed as a machine to be 'broken down' into its constituent parts to examine their respective functions. Within such ontological views, the whole person is the sum of his/her individual parts, pathologized independently from phenomena and concepts that exert influence from outside the individual. Such approaches locate the 'problem' of suicide as existing in the individual; they see suicide as a 'breakdown' or dysfunction of the 'human machine'. This approach to medicine has borne widespread and significant dividends for humankind in terms of reductions in morbidity and mortality over the last 300 years, but this approach does not appear to have brought about corresponding improvements in preventing suicides. Others views/constructs of health/illness and resulting approaches acknowledge, if not emphasize, the sociology of health and illness;[69-71] cultural influences and determinants of health[68] and/or social constructionist views.[72] Almost every characteristic of a society can affect health and thus be considered a health determinant. However, certain key determinants have been highlighted as requiring special attention, these are listed in box one.[68] As a result, the authors assert that both Turkey and Canada could benefit significantly from adopting an ecological suicide prevention strategy that considers and tries to address these key determinants of health.

Box One: Identified Key Variables of Social Determinants of Health

- Early childhood development
- Income and social status
- Education and literacy
- Social support networks
- Employment
- Working conditions and occupational health
- The physical environment
- Individual and public health services
- Gender

While the current approach to suicide prevention is not entirely without merit, rural and remote populations particularly in both Turkey and Canada stand to benefit from the creation and adoption of an ecologically-based suicide prevention program. As Hirsch (2006)[73] declares, "The most successful rural models appear to be community-based integrative prevention services and wrap-around services that incorporate the larger rural community,[74] suggesting that recruitment, engagement, and education of rural communities may result in better identification, prevention, and treatment of suicidal individuals."

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