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Unravelling Suicide and Related Behaviours in Indigenous Youth and Young Adults in the Canadian Context

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Abstract: Suicide, rooted in antiquity, is now identified as a global dilemma, particularly impacting Indigenous peoples. The backdrop for this non-systematic focused review is the worldwide challenges faced by vulnerable Indigenous peoples with untenable poverty, degraded life-quality conditions, and suicidality, while the focus, as a specific case, is on the complexity of suicidality in Canadian Indigenous high-risk age groups. The aim here is to present overt and covert intersecting factors underlying suicide in Indigenous youths and young adults in the vast Canadian context. Although living in a privileged geopolitical region, their physically remote and economically compromised communities meshed with a haunting history combined with authorities' ingrained attitudes of exclusion and neglect, spawned meager health and education resources, services, and consequent dire results. The article's guiding theoretical frameworks are *Transcultural Psychiatry* with its emphasis on context that explains health, illness, and recovery in groups and individuals, and the *Interpersonal Psychological Theory of Suicide* to identify individuals' suicidality triggers. The article highlights indigenous social determinants of health, identifies elements underlying the tragic suicidality trend in these groups, and addresses literacy and education as poverty driven issues and suicidality-contributing factors promoting attitudes of hopelessness. The discussion includes joint suicide combatting efforts by Indigenous communities and Canadian authorities, these authors' psychosocial-cognitive literacy acquisition plan to address all age-groups simultaneously, and a take-home message introducing employers' desirable worker competencies for effective future employment, thereby uplifting life-quality and prospects to help thwart the spectre of suicide. The Conclusion introduces current trends in suicidality science, confirming the authors' intervention plan is a good fit in the psychosocial intervention trend. Future directions include advice to examine the effectiveness of the plan in the Indigenous context, and tweak it accordingly. For ease of reader comprehension, the article flow is included at the start of the Introduction section.

Keywords: suicide triggers, indigenous communities, age-vulnerable groups, language and literacy disparities, poverty induced suicide, prevention intervention approaches

Introduction

Article Type, Data Source, Terminology, Aims, Theoretical Frameworks, Psychiatric Disease Classification Systems, and Article Flow

The authors opted for a non-systematic focused review since this type offers the reader relevant scientific results and discussion to facilitate responding to specific issues in target populations at an economical cost, time, and effort. Furthermore, this type provides essential background knowledge to facilitate comprehension of context in the critical issues, and allows evaluation and elaboration of recommendations that are judged as most likely to benefit the population of focus.[1,2] The Canadian data sources for this article relied on reported medical-administrative data, public provincial and federal health agencies, Government of Canada statistics and reports, Public Health Agency of Canada, Indigenous Services, and a manual search of Canadian journals and relevant articles. Global data was based on World Bank reports,

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and World Health Organization (WHO) websites. The American studies were based on Federal and State databases, the National Institutes of Health (NIH) and Centers for Disease Control and Prevention (CDC). Given the entangled multi factor topic, a fair number of reference sources was needed to provide sufficient data and context to this article. The article uses the term *Indigenous* to refer to all Canadians who first arrived in these lands, rather than *Aboriginal*, a term connected to painful history.

The review aims to unravel and explore the factors underlying indigenous suicide and their variation rates globally. These form the backdrop to the main focus, the complex Canadian interconnected suicide and suicidal behaviours (ie attempted suicide, suicidal thoughts and ideas, and self harm) in Indigenous youth and young adults. The Canadian Indigenous communities inhabit geographically remote and economically vulnerable regions within a privileged Canadian economy. They represent communities with a haunting history, and authorities' ingrained attitudes of exclusion, neglect, and meager access to health resources and services, amongst other serious survival challenges discussed in a recent review.[3]

In this review, the theoretical underpinnings are *Transcultural Psychiatry*,[4] with its focus on context as the illuminating factor in understanding disease and wellness, while the *Interpersonal Psychological Theory of Suicide* (IPTS)[5] identifies psychological suicidality triggers in individuals, ie, both perception of burdening others and social alienation evoke the desire to die by suicide, while dire life experiences engender the capacity to actualize it. These frameworks are expounded in the body of the article. A description of the two most used but distinct mental disorders classification systems are included: 1. The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders - DSM 5 (2013) and the DSM TR- Text Review, (2022), and 2. The WHO'S International Statistical Classification of Diseases and Related Health Problems- ICD 10 and ICD 11, the revision. Both systems are employed in various regions of the world, including Canada. Their classifications of suicide are included in the body of the article.

The flow of the article is provided and is meant to guide readers through the complexities of overt and covert factors spawning suicidality in world indigenous people while Canadian indigenous peoples' reality is meant as a closer exam of a specific complex case, best understood with the adoption of a "helicopter view", a metaphorical overview of factors and situations. The article provides powerful proximal and distal factors that lead communities to despair and inevitable suicidality spurred by poverty. The discussion includes specific circumstances of living conditions, and environmental toxicity impacting physical and mental health of numerous Indigenous communities and ultimately increasing suicidality in their members. *Combatting suicide rise in Canada* section addresses joint government and Indigenous efforts to stymy suicide acts in their children. *Indigenous early learning and childcare*, a joint initiative addresses an educational framework within psychosocial factors in which all Indigenous children aged 0–6, and their families have the opportunity to experience high-quality, culturally based early learning and childcare programs -a foundational effort to develop a strong sense of identity in the children, and provide educational opportunities and school readiness, forming "a gateway to health and well-being to sustain them into adulthood".

The article authors' *Literacy stimulation Prevention-intervention plan* describes cognitive-linguistic integrative strategies and activities to address the needs of all age groups. Efforts to combat suicide must commence at the very beginning of the educational odyssey whose covert goal is *to lead the way out of poverty*, armed with education that promotes literacy throughout the grades and scaffolds knowledge and skills that lead to employment and bright futures. Consequently, the plan is included in the *Discussion. Indigenous early learning and childcare joint initiative* is followed by the article authors' *Strategies for developing pro-literacy behaviours in the early education initiative, ELCC*, eg, *Dialogic Reading* is a book reading activity in which an adult and child have "a conversation" around a picturebook using specific strategies meant to help the child comprehend and gain vocabulary, followed by an *after reading activity* with a "product" the child takes home to discuss and show the family (the family is encouraged to emulate this at home). The section closes with a reference to a Canadian Resource company with a trove of Indigenous content of children's and youth books for each of the three nations for all age groups.

Next, *Honing integrative thinking strategies in upper elementary and secondary school*, provides a teacher strategy for improving attention to class material, encourages proximal memory and focus by thinking about the lesson content, while the resumption of the activity in the next lesson, stimulates distal memory and comprehension. Finally, *Put it in writing: teachers' role, narrative, communication, and social skills* explains various activities and strategies to help the

teacher get to know the students and their literacy needs, while actualizing activities to promote writing, a "most dreaded" component of literacy. Teachers are encouraged to introduce post-secondary requirements to acquaint them and desensitize them so they can anticipate their next stage in education. Next, *The Skills/Competencies Canada Body and a Take-Home message*, is discussed. This is a cross-Canada organization with member groups who work with governments, employers, educators, and labour groups to promote various skilled trade and technology careers to Canadian youth via competitions and programs, and "hands on, interesting, and educational information. A Take-Home Message is included delineating the nine competencies that transverse all trades that employers look for in their employees. The Conclusion introduces the current trends in the field of suicidality and suicide-combating- approaches programming, and judges the authors" suggested intervention plan as a good fit with these trends. Future efforts should centre on putting the suggested strategies to the test in the Indigenous context, to cement them as effective interventions that merit inclusion in Indigenous teacher and principal education programs. A final note concludes the article, reiterating the importance of education, the key to literacy, and escape from the clutches of poverty, a literal death trap, while academic efforts are meant to alter their trajectory.

Canadian Indigenous Attitude to Suicide and Present Practice

Suicide, the act of taking one's own life, is rooted in antiquity, and its presence is evidenced throughout the lands and societies of the times.[6] Attitudes to suicide, however, were found to differ according to civilizations' sociocultural practices enmeshed with their belief-systems of life, death, and afterlife in which they were embedded. Solely the Canadian Indigenous peoples suicide view is highlighted here.

Canadian Indigenous peoples often practice a *syncretic* form of Christianity entwined with their traditional spiritual "way of life" belief system. Life is generally viewed as a circle with four stages, birth, life, death, and afterlife. At birth, the human spirit, charged with using their bestowed gifts needed for doing good on earth, descends from the land of the creator (the great spirit), joins the body, and proceeds to travel through these stages. The journey entails facing encountered challenges while performing "good deeds". With the death of the body, the spirit is released and begins its ascending journey back to the spirit world. It is allowed entry after a successful examination of the good deeds on earth, and hereafter continues its existence for eternity. In practice, at the end of life, knowledgeable community elders and family perform ceremonies to assist the spirit in its quest to re-enter the spirit world. Death due to suicide, however, presents great distress to the family and the entire community as it impedes the journey back to the spirit world and hinders its entry into eternal existence.[7]

Suicide a Worldwide Mental Health Dilemma

The idea that individuals or even entire groups can overcome their inborn "drive to survive" and proceed in taking their own lives, or deliberately put themselves in harm's way to achieve it, is both frightening and inconceivable. Indeed, suicide is a serious complex issue with which modern societies grapple, and the scope of its presence is felt worldwide. The WHO, for example, states that suicide is a grave global health issue with significant numbers of deaths by suicide occurring throughout the lifespan in all geopolitical regions and in all economies, low, mid, and high. The rate of suicide, however, tends to vary among regions and age groups, eg, over 77% of global suicides occurred in low and mid income regions, and suicide was recognized as the fourth cause of death in youth and young adults aged 15–29, signaling this group's high vulnerability.[8] These statistics are disturbing, but simultaneously elucidate the importance of identifying factors and conditions that may underlie suicide and acts of suicidal behaviour, especially in high-risk groups, and so point to possible solutions.

The Precursors to Suicide According to Transcultural Psychiatry

Some causal theories of suicide were put forth by researchers[9] in support of the idea that suicide in all its forms represents a spectrum ranging from "passive thoughts of death" to successful suicide acts (excluding *Self-Mutilation*, classified as a "distinct phenomenon" regardless of severity). The proposed suicide models span social, biological, psychodynamic, cognitive-behavioral, and developmental etiologies. However, the Transcultural Psychiatric perspective constitutes the best theoretical fit to the content and major aims in this article.

Antecedents to suicide recognized in Transcultural Psychiatry[4] consist of socioeconomic and cultural-politico factors that promote extreme poverty, violence, and untenable conditions causing psychological pain and feelings of hopelessness or "entrapping despair". In children, the identified childhood factors include physical and psychological abuse, neglect and abandonment, and life in an environment of abject poverty. Although these factors are well established, the specific socio-cultural-politico context as well as ethnic membership, age, and sex, underlie variation rates in suicide ideation, suicide attempts, and death by suicide in different geopolitical regions and communities within these regions. While suicide attempts are obviously unsuccessful acts as opposed to those resulting in death, the complex phenomenon, *suicide ideation* (SI), merits some elucidation, especially when trying to harness it as a suicide predictor. According to some researchers[10] SI is a general term used to describe a wide variety of thoughts and wishes centred on death and suicide. However, there is no one clear established operational definition of SI, and no agreement on a *Gold Standard* assessment that is sufficiently reliable and valid to apply clinically, or in management of those with SI who form a high suicide risk. A significant obstacle is SI's unstable features as it tends to fluctuate frequently and unpredictably in severity. These instabilities prevent identification of an SI phenotype, consequently requiring frequent monitoring and documentation of individuals' SI condition during their management, especially as some adverse changes may be acute enough to trigger a suicide attempt. SI, therefore, serves better as a lifetime suicide risk predictor but restricts its use as a predictor of "imminent suicide".

Suicidality's Psychological Triggers

The IPTS[5] developed for general populations (nonclinical) argues for the presence of two psychological triggers to predict suicidality: feelings of unsuccessful belongingness, ie, feeling alone in the world, and burdensomeness -feeling as a burden in their social context. Both occur in the presence of depression. The researchers point out earlier studies' serendipitous uncovering of a significant correlation between sensed burdensomeness and SI among high-suicide-risk groups and community participants as supporting evidence. Their examination[5] of clinical notes of young adults' death by suicide contained higher numbers of burdensomeness than those who attempted suicide. Similarly, notes from violent suicides showed more burdensomeness compared to those who died from less violent suicide. Finally, when *hopelessness*, a strong suicide predictor was controlled, perceived burdensomeness was more powerful in predicting suicide attempts than their SI status. Moreover, the relationship between burdensomeness and suicidality remained robust for diverse age groups and contexts. In addition, a strong future suicide predictor and death by suicide was the number of suicide attempts individuals exhibited, as well as increased numbers of deliberate self-injury as it strengthens the resolve to "go through with it" and dampen the "fight to survive" instinct. Finally, point out the researchers, studies showed that the interaction between burdensomeness, low feelings of belongingness, and the increased capacity to suicide forms a three-edged sword predicting imminent suicide, signaling the urgency for immediate intervention.

Suicide Classification Variations

Although suicide is a serious global mental health problem with an extreme response to stressors, it is presently classified differently by the world's two most used health classification systems: the DSM-5 (APA 2013) and the DSM 5-TR (Text Review),[11] and the WHO's ICD 10[12] and the revision, the ICD 11.[13] Both systems are employed in various regions of the world, including Canada.

The DSM 5 identifies suicide as a comorbid condition or associated with other categorized mental illnesses rather than a mental disease. A chapter on codes on type of suicide was added to the suicidal behaviour and non-suicidal self-injury in the DSM-TR. However, a proposal for a separate category (Suicidal Behavior Disorder-SBD) is being considered as "a condition for further study", ie, pending research and discussions, it may be included in a later DSM version.[4,14] The American data is recovered from the National Centre for Health Statistics (NCHS), an arm of the Centers for Disease Control and Preventions (CDC). It includes information on Vital Statistics System that addresses suicide types and monitors frequency.[15]

The Canadian Institute for Health Information applies both, the ICD-10 and ICD-11. Physicians in Canada tend to rely on the DSM-5 or DSM-TR, however, the ICD-11 is used for reporting morbidity and mortality statistics. Suicide is classified as a mental illness in the ICD-10, and also termed "completed suicide" ie, the intentional act of ending one's

life, while in the ICD-11, it is termed "Intentional self-harm". Both include separate codes to indicate the means used in the self-harm act. Attempted suicide, or *Intentional Self Inflicted Injury*, is similarly coded. Categories of *Suicidal Individuals* include both completed and attempted instances. The Canadian completed suicide data is collected from the *Vital Statistics Mortality data registry*: an administrative survey that gathers monthly and yearly demographic and medical information from all provincial and territorial vital statistics registries on all deaths in Canada.[16,17] The attempted suicide data, however, is collected from *Medical Services/Medical Claims data*, an administrative health database housed by the University of Manitoba.[18]

Nonetheless, the actual lived experience of individuals within specific socio-economic-cultural contexts facilitate a more in depth understanding of what provokes individuals to attempt and succeed in taking their own lives, an act antithetical to the survival instinct. The following paragraphs explore the socioeconomic conditions as measured by the World Bank, and suicide prevalence in the most vulnerable populations around the globe, Indigenous peoples.

Indigenous Peoples Among the World's Extremely Poor

The concepts of *Relative Poverty* - measured against the economic standing in one's own society, and *Shared Prosperity* or income growth of the bottom 40% on the economic ladder, clarify a country's economic standing, and that of its poor groups.[19] An examination of poverty in Indigenous communities in 2006 by the World Bank and United Nations' (UN) Permanent Focus on Indigenous Peoples Issues data[20,21] showed they remained the *poorest of the poor* at the start of the new millennium. In addition, while the socio-economic disparity focus was on low and mid economy countries, Indigenous peoples' circumstances in high economies also showed them to be consistently well below the national average in their regions. Furthermore, they experienced health issues, varied care in preventative treatment and they seldom asked for or received medical attention. In comparison, while a reduction in poverty was seen in Asian and Latin American countries generally, they lagged significantly relative to the non-Indigenous populations in all economies. More recent studies indicate Indigenous peoples make up about 6% of the world population however, they constitute about 19% of the world's extremely poor. The World Bank measures the international poverty line as $2.15 per person per day as determined from 2019 data, estimating 701 million people living below this poverty line.[22]

It is important to emphasize that although Indigenous peoples constitute distinctive sociocultural and linguistic entities, collectively they share a similar history with strong ties to their ancestral lands from which they were displaced, while the lands they live on to date, were assigned to them by the authorities of their regions. Their livelihoods are enmeshed with, and are dependent on, the natural resources in their environments. Their inexorable ties to their land are etched into their identities, cultures, spirituality, and their "well-being" or physical health. Land ownership issues are often the driving force behind conflict, environmental degradation, "weak economic and social development", and ultimately the *force majeure* in considerable numbers of Indigenous peoples' incredible poverty in numbers of geopolitical regions. In 2023, they were still awaiting actualization of Sustainable Developmental Goals (SDG) promised by international bodies.[23,24]

While *extreme poverty* and *poverty* were measured in monetary dimensions that indicate a family's ability to obtain elementary goods needed for survival, it did not capture the "multidimensional" aspects of poverty, noted investigators.[25] To counteract the unidimensional measure of poverty accounting solely for daily consumption funds, Oxford University developed a Global Multidimensional Poverty Index (MPI).[26] The World Bank application of MPI that included access to education and infrastructure as well as monetary measures, successfully identified many more people living in extreme poverty. The World Bank applied the MPI to populations in the sub-Saharan region where, for example, amidst conflict, greater than half the population experiences Multidimensional Poverty.[27] In fact, the Global MPI identifies three poverty dimensions: health, education, and living standards which comprise 10 indicators individuals may face simultaneously that highlight experienced poverty and allows calculation of its severity. The Global MPI also facilitates comparison of countries and tracking their progress in efforts to eradicate poverty via the attached SDGs.

The Interrelation Between Poverty and Suicide

Understanding the relationship between poverty and suicide is paramount if agencies are to plan intervention programs. Researchers[28] examined poverty as a risk factor for suicide in English-language-only studies. They conceptualized

suicide and suicidal behaviour as *consciously initiated individuals' act in response to their subjective psychological experience of poverty*. Their systematic review showed most of the studies investigated unidimensional factors, ie, economic-financial difficulties and unemployment. The majority of studies emanated from South-East Asia, a mid-economy, while low economy studies originated from sub-Sahara Africa, Latin Americas, and a small percentage represented multiple locations. Most studies applied descriptive statistics, however 45% reported bivariate and multivariate analyses exposing statistically meaningful associations between poverty and suicide variables. In tandem, the authors noted suicide stigma and criminalization hinder attempts to gather more evidence as in Uganda, Gandha, and Guyana. More studies from sub-Saharan Africa with the world's poorest countries, and from South America's Guyana, with the world's highest suicide prevalence are needed to obtain a more cohesive picture of the associations between poverty and suicidality, concluded the authors, and advised the use of studies from varied languages to help fill the suicide knowledge gap in these complex regions. In addition, suicide deaths investigations in low and mid-income countries[29] showed prevalence of 75% while Indigenous peoples' suicide deaths in the regions' individual countries was substantially higher, as were the reported results from high-income countries.

Despite Indigenous peoples' diversity of geographical location, socio-economic standing, political autonomy, cultures, and languages, note the researchers,[29] their shared history of colonization with consequent losses created discontinuities that impact their health and in turn, their life-span. In short, although suicide is a global dilemma, Indigenous peoples around the globe are found to be at higher risk than non-Indigenous in the same geopolitical regions.

Indigenous Canadian Communities in a Complex Region

The following pages expound on the Indigenous peoples of Canada, a massive geopolitical region with a complex history of colonization, multiple layered government and health systems, and tragic consequences of forced removal of children from their families resulting in intergenerational trauma impacting adversely their social determinants of health.[3,30]

While Canada is designated as a high-socioeconomic region, it is plagued by mental health issues and ill health as demonstrated with key statistics graphic: ~12 people die by suicide each day; ~4500 deaths by suicide per year; suicide by men is 3 times that of women; suicide is the second cause of death among youth and young adults 15–34 years old.[31] These statistics evoke a lower economic region rather than a privileged one, and stand as a testament to its complexity.

Canada is the second largest geopolitical region on the globe, stretching from the Atlantic Ocean in the East to the Pacific Ocean in the West, and North into the Arctic Ocean, encircling ten provinces, and three immense territories that are mainly located North of 60° latitude (accounting for 40% of Canada's land mass, but only 3% of its population). The government's dual system, dual justice system, and bilingual administration, replicated by 10 provincial governments and split responsibilities underscore the complexity and inevitable obstacles that Indigenous peoples face when attempting to solve judicial or health challenges (see reference 3 for a thorough description of the Canadian government and justice systems).

Indigenous Peoples of Canada at Increased Suicide Risk

The Canadian constitution recognizes three groups of Indigenous peoples: First Nations - The historically named Indians, Inuit – The people of the North, and Métis – those with mixed European and Indigenous ancestry.[32] These are three distinct peoples with numerous communities, representing nations with unique histories, languages, and cultural practices. They form a notable diversity with some common elements, and according to age and region, diverse experiences with life in Canada.[33] Their shared colonial history scars their present lives with a myriad of survival challenges and intergenerational trauma as is their colossal story of land loss, displacement, and the 165 dreadful years of state and church collaborative efforts to eradicate their "Indian" identities by forcible removal of children from their families and communities. Their obligatory placement into "residential schools", from which many never returned, resulted in morbid consequences for the survivors' health and well-being', with detrimental impacts on their "subsequent generations".[3,34,35]

To harmonize or stabilize relationships between the Indigenous and the government authorities, a set of agreements was proposed, overseen by *Truth and Reconciliation Commission* (TRC). The 2015 TRC agreements, signed subsequent to an eight yearlong successful class-action suit of Indigenous peoples against the government, was meant to turn a new

chapter in Crown-Indigenous relations by admitting responsibility for the most grievous period of forced residential schools in Canada's history. Signing the agreements was taken as efforts to right the wrongs Indigenous peoples suffered.[36] Despite the TRC agreements, injustices affecting indigenous determinants of health prevail, an obvious catalyst for increased suicide risk and rates of suicide acts.[37]

Suicide in Indigenous Communities in Canada

A Statistics Canada (2011–2016) research report[35] noted that Indigenous suicide rate was higher than the non-Indigenous rate regardless of place of residence. Moreover, suicide was "one of the leading causes of death" among children and youth in regions with a larger First Nations population and in Inuit Nunangat -The region to which Inuit were displaced from the Northwest Territories. These findings on Indigenous mental wellness were confirmed by a statement from the Canadian Federation of Medical Students (CFMS) in 2018.[38] While Canada's indigenous population constitutes a mere fragment of the general population (4.3% in 2018 increased to 5.0% in 2021), suicide rate among Indigenous youth aged 15–24 was about 5 to 6 times that in the non-Indigenous populations, and 11 times higher in Inuit communities. Furthermore, while the major cause for end of life in the general population was accidental death, in First Nations youth and young adults, suicide and self-injury were the leading causes of death, and the number of attempted suicides was escalating significantly. The indigenous communities declared it a national crisis requiring a collective response. Apparently, the phenomenon was known for a decade prior to this crisis. Interestingly, Canada Health did not track Indigenous suicide, an unexplained omission by the government agency.

A 2019 article entitled "Canada"*s Indigenous suicide crisis is worse than we thought*'[39] details the main findings of Statistics Canada on suicide in Indigenous peoples based on 2011–2016 surveyed years. Suicide rate in First Nations was triple that in non-Indigenous Canadians, Métis suicide was two times greater, and Inuit death by suicide at nine times the rate, "making them the people with the highest suicide rate in the world", states the article. Furthermore, the number of estimated First Nations suicide was about 2.5 times greater than the number of Indigenous homicides of women and girls in roughly the same period, and yet, writes the author, public interest in the homicides is significantly greater, and is tracked by Statistics Canada. An examination of suicide by age group showed the highest rate was seen in the 15–24 age range with First Nations rate 6.2 times higher than in the non-Indigenous same age group, while in Inuit people it was 23.9 times greater. In addition, while First Nations males were 2.4 times more likely to commit suicide as non-Indigenous males, the First Nations female suicide likelihood was 5 times that of non-Indigenous women. The Metis and Inuit estimated male–female suicide ratio was 3:1, a similar ratio to non-Indigenous Canadians. Importantly, not all Indigenous communities reported suicide cases, a detail that may speak to underreporting, underestimations, or presumed resilience.

Finally, suicide rate for First Nations living on reserve was twice as high as for those living off reserve. A clarification of methodological differences in collected data was added that may have biased the results in favour of underestimation of actual suicide numbers: while all individuals on reserves responded to the survey, off reserve Indigenous respondents were randomly selected from the general population. Their report ends with acknowledgement of need for collaboration to expose the concomitant active factors which provoke suicide acts plaguing inordinate numbers of Indigenous families and communities.

Barriers to Social Determinants of Indigenous Health

Health Injustice and Health Services

Indigenous peoples' health determinants[40] operate throughout the lifespan from gestation to the end of life, note authors. They present an innovative framework, *The integrated life course and the social determinants model of aboriginal health for understanding inequities in social health determinants via differing dimension levels and posited lifelong impacts*. The authors clarify "Aboriginal" refers to First Nations, Inuit, and Metis peoples and includes Self-Identified Indigenous individuals. The determinants in their model are categorized by three dimensions: *Distal* -historic and social-political-economic contexts; *Intermediate* community infrastructure, resources, systems and capacities; and *Proximal* -health behaviours, and physical and social environments. The authors explain that living in systems with injustices have far reaching deleterious effects on social determinants, causing ill health in tandem with blocked access to healing systems

while impacting other systems through their interconnected negative effects. In turn, these result in health morbidity with distressing quality of life, and compromised life longevity.

In the Canadian Indigenous communities, health issues stem from a shared history which impacted their physical and mental health at each crucial stage of their development. "Discontinuity in family relations, community and cultural-spiritual loss, and intergenerational trauma" with consequent low socioeconomic resources, all endangered their ability to obtain education and vocation. These factors affected their nutrition and directly impacted their health. In fact, indigenous peoples are known to suffer "disproportionate" incidence of diabetes and hypertension, mental health illness, alcohol and substance abuse, overall morbidity and mortality, and significantly shortened lives, asserts an investigator.[41] Their life threatening health issues require access to reliable health services which non-Indigenous populations perceive as a given right as these are available and accessed relatively easily under ordinary circumstances. Access to health services was well established as a determinant of health, and indeed, Indigenous peoples thrive when they also have access to Indigenous health providers. The authors of the 2019 Fact Sheet (ISBN 978-1-77,368-211-2)[37] state that what indigenous peoples need in access to health services is "blending Indigenous and Western knowledge in the health care system" to allow Indigenous health providers to service their Indigenous clients in the best way possible.

Canada's Universal Health System is meant to protect and ensure the physical and mental well-being of all residents, and facilitate access without barriers. However, it is fraught with obstacles due to the unclear divided responsibilities for health care and costs for Indigenous people, provincial privacy laws that prevent sharing vital information, meagre numbers of health professionals available to their communities or in close surroundings resulting in rare patient contact, and in urgent cases, forced transfer to health resources located hundreds of kilometers/ miles away from their communities. Individuals trying to access services soon fall into "the labyrinthian rabbit burrow" that is the route to the universal health care system, at the cost of their lives. Examples of these resulted in *Jordan's principle*, a legal obligation to ensure that Indigenous children get the health supports and services they need, when they need them, without worries about payment, and *Joyce's Principle*, a law to guarantee respectful and timely care denied to a young Indigenous woman who consequently perished.[3] In sum, Indigenous peoples may be reluctant to seek medical help given their limited financial resources and the possibilities of being sent distances away to face medical treatment without the presence of family support (and high risk of meeting ethnic discrimination).

Health Injustice and Social Services Child Welfare System

Compounding the wrongs that Indigenous peoples experienced is the creation of the Social Services Child Welfare system and its *unchecked* power to remove children from their families, although the system is the responsibility of Provincial and Territorial governments.[42,43] Indeed, Social Services have tremendous decision powers that include removal of children from their homes and placing them in state care, or in foster care, and their unbridled adoption practices outside of the children's Indigenous communities.[44] Despite constituting less than 8% of Canada's population, Indigenous children in state care comprise 52% of all children, a staggering overrepresentation. A longitudinal study of young mothers, with both substance use and a parent survivor of residential school, were found to suffer significant trauma that triggered suicide attempts in many when they lost their children to social services.[44] Consequently, losing their children was determined *a primary suicide predictor*. The researchers note that children with state care histories and living off-reserves tend to be "on the streets" and involved in substance use and alcohol consumption, self-harming behaviours that jeopardize their physical and mental futures, and often lead to incarceration by policing authorities. This perpetuated a three generational impact of the devastating effects of forced separation from their families and communities, all high suicide risk factors. Furthermore, the authors report on the disturbing rise in suicide in First Nations youth and young adults noted during 2011–2015 in British Columbia (BC), the west coast province. Their examination of unexpected deaths in two BC cities during this period showed 32% died by suicide, and 27% of these were parents to young children. The authors concluded that the *cumulative and simultaneous experiences* of historical and intergenerational trauma, devalued identity, loss of connection to family and community, and rise in anxiety and uncertainty due to abject poverty, deprived them of the health and strength needed to combat these realities.[45] These factors speak volumes about the triggers operating relentlessly in these young mothers' suicidality.

In pre-colonization years, noted authors,[44] indigenous communities had in place systems and means to assist families in distress while relative families or others in their communities attended to their children so that they were not alienated from their culture and language and from love and care they needed (and merited). The authors conclude that the involvement of Child Welfare has long term deleterious effects on health and well being of mothers and their children. In the present authors' view, given these adversities, the reasonable and just solution to State Child Welfare is granting Indigenous communities self-determination in social matters so to provide their traditional healing knowledge to the victims of the social welfare system. Ironically, the social services major concern was meant to be the impact of social and environmental challenges on the well-being of families and their children directly attributed to poverty, a globally known primary causative factor correlated with child welfare issues.[43] Yet, in lieu of improving the lives of their indigenous populations, the service chose an infamous remedy that evokes in Indigenous peoples the historic forced removal of their children,[3] to the neglect of their obligation to families whose life problems are rooted in poverty with resultant compromised social, physical, and mental health determinants. The historic policies, devaluing views, and management of indigenous populations are undoubtedly at the very roots of this dire situation as well as the exceedingly worse reality whose consequences continue to haunt indigenous communities, ie, suicide in their young populations.

Place of Residence Factor

A 20 year (1996–2016) place-based suicide risk study of non-Indigenous residents' suicide deaths was conducted in Newfoundland,[46] Canada's northeastern province's northeastern island, and Labrador, its connected northwestern inland and larger territory. Provincial examiner record-linked data of all deaths in these regions, determined Labrador as the most rural site, and home to about 60% of the population with varied community sizes and dispersed over large distances with some accessible only by plane or boat. Newfoundland Island with a population of 560,000, and about 40% residing in its capital St. John's, constituted the urban site. The great majority of the population in urban regions are of European descent, while Indigenous communities with a variety of peoples are found mostly in Labrador. In 2019 Indigenous peoples numbered 28,293, and lived on reserves, ie, a rural residence, however, a notably large band, the Qalipu Mi'kmaq from the West Coast of Newfoundland does not live on "reserved land" so that rural Indigenous count would have been underestimated had it been tracked by government agencies. Earlier studies, for example, found suicide rate in Labrador, the rural site, four times that in Newfoundland Island, the urban site.

The authors[46] noted the importance of establishing residence-based data in the Canadian context so that appropriate suicide prevention efforts can be established to successfully address the high-risk needs of rural residents. The study identified various difference factors providing a profile of rural suicide candidates, however, glaring in its absence was Indigenous data, except for a lone reference to a study showing *work under difficult climatic conditions may pose a suicide risk*. Nonetheless, the authors integrated at the end of their article an appreciation for Indigenous approach to suicide interventions within their communities. Demographic data in Canadian federal, regional, or local coroner reports include sex and age, but decedent ethnicity or cultural group is not included for either Indigenous or non-Indigenous individuals. Consequently, examining coroner suicide deaths data for the two decades analyzed by this research team was nonexistent, while Statistics Canada only recently begun tracking Indigenous suicide deaths, facts that hamper suicide prevention programming for Indigenous communities in any region.

A 2019 report,[47] however, Statistics Canada's 2012 Aboriginal Peoples Survey, examined mental health of Canadian Indigenous adults, including young adults, living off-reserve. The report aimed to examine psychological distress and suicidal behaviours in relation to socio-economic inequalities, was spurred by evidence that income was a major determinant of health in all Canadian populations. It notes that Canadian Indigenous populations' income is significantly lower than that in non-Indigenous populations, as are employment prospects, housing conditions, food securities, and consequent ill-health, all similar to that of poor populations in low-income geopolitical regions. The study included impact on psychological distress, lifetime suicidal ideation, lifetime suicide attempts, and suicidal behaviour. The socioeconomic factor targeted various demographics ranging from cultural groups, to income, employment and education, to urbanicity. The cross-country final sample population included those aged 18 and older, representing 25% of the 600,750 Indigenous people living off-reserve (excludes Yukon). Only suicidality results and some variables in the final

lowest income quartile are addressed here for the sake of brevity. In lieu, these authors highlight and comment on some variable results known to impact the quotidian lives of all Indigenous peoples.

The psychological distress score in the lowest income quartile was 16.9 for men, and 19.4 for women indicating probability of "being well" to probability of "a mild disorder" respectively, and the suicide ideation for men was 24% and 29% for women, attesting to women's somewhat greater vulnerability to psychological distress. The lifetime suicide attempts of 4.8% in men and 4.1% in women were only slightly higher in men. An interesting demographic was the marital status with only ~15.4% noted as married, and ~50% declaring divorced, widowed, or single status. Poverty impact obviously takes its toll on individuals and families, a reality reinforced by only 15.7% declaring strong family ties. An important and far reaching factor is Food Security with ~ 45% classified as having Very Low food security, ie, they were uncertain about the availability of a "next meal". Lack of food security is known to affect individuals and families as nutrition is strongly implicated in the ability to maintain health, study, and work, ie, life activities essential for escape from poverty. Indeed, ~15% showed < grade 8 education, 18.5% completed grade 11-secondary education, while only 19% received a degree or diploma (undifferentiated in their study) in post-secondary education. Furthermore, while cultural identities via activities and symbols was relatively robust, use of their native language was declared by only ~21%. Not surprisingly, *Residential School* related variables showed 51% had an attended family member or missing members. The ones who never came back. The report on residence indicated combined Rural and Small Population Centres was 33.5%, and 33.5% lived in Medium and Urban sized locations, showing equal concentration samples about equally distributed across the Canadian provinces.

In sum, disproportionate health outcomes were found in Indigenous peoples with lowest incomes, adding to the fact-pool of the importance of socio-economic and specifically, income status relationship to suicidality consequences. The study is therefore valuable as it demonstrated these facts exist in a cross-country Canadian reality. However, in the present authors' (strong) view, it was erroneous to include four distinct Indigenous peoples by distinguishing Status and non-Status First Nations given that only three Indigenous groups are recognized by the Canadian Constitution. The First Nations Status distinction the authors addressed was eliminated in 1867, modified in the 1982, applied in 2015 by the TRC agreements thereafter,[37] and by the 2016 Supreme Court judgment, *Daniels Declaration*.[48] The use of the Status label caused much grief and severe poverty for non-status First Nations peoples although they were not spared from forced Residential School miseries, or consistent denial of resources by provincial governments.[3] Perpetuating this distinction in scientific writing constitutes a disservice to Indigenous persons, and despite its presence in Statistics Canada data, it merits collapsing the two groups' data and simply reporting on First Nations.

Historical, Traditional, and Modern Suicide Hazards Faced by Indigenous Adolescents

It is well recognized that Indigenous youth in Canada experience high distress and consequent suicide rates compared to non-Indigenous youth; these are directly attributable to the historic circumstances and traumas experienced by their families and communities. Additionally, an earlier study[49] found, they suffer from exposure to various traditional bullying and cyberbullying evidenced by a survey of 12–17 year old adolescents living in First Nations communities across Canada. In Saskatchewan, eg, 35.8% of First Nations youth experienced physical bullying, 59.3% verbal bullying, 47.5% ethnic slurs, and 3.3% were subjected to cyberbullying. The majority of the victims reported increased depressive feelings compared to their non-bullied peers, and cyberbullying had a greater impact than traditional bullying. Females had stronger negative reactions, greater distress, and depressive symptoms to both types of bullying than males. A study[50] based on Indigenous youths' self-reported anxiety, stress, and depression associated with traditional bullying and cyberbullying showed that traditional bullying had a greater contribution to anxiety and stress, while depression following cyberbullying contributed a small portion (3–4%) to anxiety and stress variance respectively, but not independently. In conclusion, youth bullying and cyberbullying victims and perpetrators prevalent in some Indigenous communities exacerbate the internalizing symptoms with increased suicidality risk in a segment of Indigenous individuals with pre-existing high-risk suicide and actualized suicide acts.

Cybervictimization, a modern hazard plaguing society was found to be related to suicide behaviour in adolescents. A 2023 study of cybervictimization in 12–17 year old adolescents was commissioned by Health Canada following alarming evidence it is a serious weapon capable of dismantling mental health, especially in vulnerable youth.[51] It was

associated with increased depression, anxiety, disordered eating, and suicidality no matter the sociodemographic circumstances. Youth who were judged by their perpetrators as "undesirable" or exhibiting emotional and psychological vulnerabilities were on their "preferred victims" list. However, similar consequences were noted in all cyberbullied adolescents. The finding that reduced use of media decreased the incidence of cybervictimization is a welcome "self-help" fact that potentially can become a strategy for adapting it to a cautionary marketing standard albeit requiring partnership with researchers, marketers and educational institutions. Notwithstanding the need to put this optimistic expectation to the test, the resulting coalition would be utilized for the universal dissemination to all adolescents and their families, via their educational settings, alerting all to a "logical and cost free prevention strategy", and possible health recovery route by simply minimizing their social media activity.

Environmental Degradation and Toxic Impact on Indigenous Communities

Indigenous peoples living on reserves, have traditionally relied on land, air, and water in their environments for their stock of food. The traditional foods: varied grains, berries, grasses, fish and seafood, and wild avian and land game were the staples in their diets supplying them with all their nutrition needs.[52] However, dumping of industrial waste and noted increased toxic pollutants in the rivers raised concern of food safety and environmental degradation for all but especially for those relying on their land and subsisting on traditional foods.[53] A water quality scoping review showed increase of water-borne diseases, and lack of confidence in water quality in many of the indigenous communities compared to non-indigenous ones.[54] An environmental disaster in the early 1960s saw a huge quantity of mercury, a heavy toxic metal, dumped into the river system of a First Nations Community, contaminating the water and fish on which the community subsisted. A longitudinal study of the deliberate mercury spill[55] confirmed that the toxicity-related illnesses shortened life of individuals by ~10 years. A follow-up three-generation mercury exposure impact study[56] showed its presence in the river system and food chain, resulted in a significant rise in attempted suicide in their children and youth, and noted changes in adults' behaviour, eg, rise in alcoholism, reduced motivation to work, etc, all contributing to economic and social upheaval. Actual blood, tissue, and hair samples confirmed symptoms and consequences were worse in those with higher mercury toxicity levels. Scientists corroborate[57] heavy metals such as mercury, lead, chromium, cadmium, and arsenic are highly toxic to animals and humans and especially to the developing brains of infants and children. The accumulative effect of exposure to these toxic metals through air, water, and food is devastating to body cellular growth, and health including ability to fight off cancer by employing repairing mechanisms, and DNA damage, note the scientists. Mercury, especially, alters brain activity leading to the "mad hatter syndrome", named for hat makers who relied on mercury for their craft, causing neurologic, psychiatric-behavioural, and degraded immune system conditions.[58] The Inuit communities in all regions, for example,[59] state in their 2020 Brief that though they live in water-rich Canada, they have poor access to clean water and sanitation, putting their families at risk despite government agreements to secure consistent water and sanitation services to their communities. Without access to these, Inuit families are deprived of the very basic necessities of life. In fact, tuberculosis, an easily transmittable infectious disease especially prevalent in poverty stricken crowded residences, is rampant in Inuit communities, affecting physical, mental health, and lifespan of individuals of any age.[60] The Inuit brief delineates serious infra-structure short-comings and bureaucratic government obstacles to clean water and sanitation services in their regions. In Canada, they state, Inuit live in "a politically and economically marginalized region". In light of their plight, the fact that they have the highest youth and young adult suicide rate in the world, is hardly coincidental. In addition to Indigenous peoples' historic woes, stagnant socio-economic conditions, and health determinant disadvantages, including incredibly high prevalence of tuberculosis, environmental degradation further compromises their very existence.

Indigenous Education Efforts Obstructed by the Poverty Factor

Health determinants are powerful factors in engagement with life activities and achievements, and these in turn impact health.[40] Poverty is one of the most powerful conditions that determine proximal as well as future lives of individuals and their well-being. House overcrowding eg, occurs most often in Inuit communities, but is inevitable in all families who live in poverty, note the authors. It robs members of space and "alone time", or engagement in play and dialogue to stimulate language and literacy in their children and adolescents, and hinders engaging in educational activities that

determine school performance leading to education needed for increasing future opportunities for employment and income. The power of literacy and education to lift people out of poverty is a well known and accepted fact in most modern societies. Attainment levels of literacy impact education and health, employment and income, clean water and food access and security, and safe place of residence. These are life achievements to which people strive, while obstacles to obtain these increase stress and depression, causing substance abuse in adults and youth, and behaviour problems in children, as well as increase in family violence, consequences directly linked to house overcrowding.

A Canadian survey developed by *Indian and Northern Affairs Canada*[40] examined and ranked Indigenous nations' adult education, employment and income, and housing measures. First Nations ranked 63 of 100 most unhealthy communities in Canada and other Indigenous communities ranked 65 of 100. The cumulative psycho-social stressors, and especially lack of or meagre and inconsistent employment and income, state the authors,[40] are linked to mental health issues and increased suicidality. Education is the key to literacy acquisition, and without it, valuable knowledge to enhance life and mode of living, and especially opportunities to increase income, are nonexistent thereby trapping individuals in the abyss of poverty with its deep rooted intergenerational repercussions, a condition that is more likely to occur when youth give up on school, ie, 'drop out; or are "pushed out" thus perpetuating poverty and its transmission given that all health determinants hinge on escaping poverty.

Importance Accorded to Education in Indigenous Communities

The 2009–2010 National Collaborating Centre for Aboriginal Health (NCCAH) initiative[61] states that high school completion levels and attendance of post-secondary education in Indigenous populations is well below other Canadians. These are essential for reducing health inequalities. The Indigenous' view that "education is a lifetime learning process", echoes the educational philosophy behind the decade long (1990s) reform plan summarized in a report at the start of the millennium by the Council of Ministers of Education, Canada.[62] The NCCAH report explains that learning at all ages is facilitated by formal and informal means, and for Indigenous peoples, consists of two major pillars: the "acquisition of literacy and numeracy", common for all Canadians, is needed for competing in the labour market and improving socioeconomic standing. The other, an equally important pillar to Indigenous peoples, is "traditional knowledge and skills" related to land, culture and language, elements meant to help them recover their identity and facilitate integration back into their communities.

A 2017 NCCAH infographic[63] summarizes the state of education attainment in Indigenous communities, the fastest growing and youngest population in Canada. In 2011, those 14 year olds and younger constituted 28%, those aged 15–24 were 18.2% while in non-Indigenous 16.5% and 12.9% respectively paralleled the indigenous age groups. The median age in Metis was 31, in First nations, 26, and 23 in Inuit. Although educational attainment improved, it remained below the general Canadian levels. The barriers noted were chronic underfunding of schools with safety and clean water concerns, while students discouragement by long distance access to schools was responsible for low attendance rates in secondary schools and drop-out rate of on-reserve students. Nonetheless, 90% of drop-out students return to school to complete their secondary education sometime in their lifetime (ages 25–64). Finally, the NCCAH reported that Indigenous cultural and language integration frequency ranged from periodic to full Indigenous language immersion in their curriculum. The slow increase in Indigenous peoples secondary education efforts as a future lifeline from poverty seems to be en route, albeit rather slowly, but going forward, Indigenous communities' efforts need to refocus on encouraging consistent school attendance, and ensuring successful transitions from secondary to post-secondary education.[64] For this mission, confronting youth's hesitancies to attend distant schools and be successful requires removing barriers and employing well-trained mentors directly from the communities with full support from Elders and families.

Factors Underlying Indigenous Students' Low School Attainment

A former education director of the Quebec James Bay Cree - A First Nations Community School Board[65] calls the performance of their students "a national dilemma". The school board serves various small communities all along its vast territory, with some located inland, and the others border the waters of Hudson Bay and James Bay. Students attend small classes but their backgrounds and formal education preparedness is mostly lacking. The majority are burdened with

unfavourable living experiences and historic disadvantaging circumstances. Despite many efforts, by 2018, secondary school 42% graduation rate was the lowest in Quebec.[66] The former director shared his astute observations and experiences in a sponsored conference titled *Improving Education for Indigenous Children in Canada*. Both Indigenous efforts to reform First Nations' education and a 2014 Government Educational Act, failed to focus on education's fundamental components: Teachers, Principals, and the Curriculum, all essentially under the jurisdiction of Federal government so that provincial education reforms tended to be neglected by the Indigenous education leadership. This represents yet another policy discontinuity affecting Indigenous students' education. The director connects low secondary school graduation rates to inadequate teacher training programs. The Canadian teacher colleges and university education faculties focus on courses with historic socio-political content rather than their students' tribal cultural elements that should inform choices of pedagogical approaches with their youth as they define the relationship and interaction with their teachers and their classroom behaviour, all antithetical to school achievement. Colleges and university education faculties are therefore ill-preparing their future teachers to be effective educators, as evidenced by their teachers' failure to produce the desired education outcomes for First Nations youth. Furthermore, teachers fail to consider residential school experience as underlying the rejecting and mistrusting attitudes of families toward teachers and principals that is expressed in their lack of school support and their children's school behaviour, points out the director.

The director attributes the lack of First Nations students' participation in class discussion to cultural child rearing attitudes and practice of discouraging children from expressing valid views, or asking and answering questions, to parental use of indirect communication for discussions, high truancy, residential overcrowding underlie incomplete assignments, and distrust of educational institutions he attributes to intergenerational consequence of the residential school era. Teachers, helpless in how to manage these hostilities, tend to leave the students to cope solo without the needed comprehension or skills to manage their situation-explaining the high dropout rate and only 30–40% graduation in their communities; these remained low despite placement of Indigenous teachers given these teacher programs did not change from those offered several decades earlier.

Principals too must accept responsibility as they mirror the teachers' lack of knowledge and training in how to cope with Indigenous education: principals advance poorly educated students despite their lack of attainment of the required levels; these end-up in remedial classes, and finally drop out. What is needed, he advises, is a *National Principals Association* composed of principals that work with Indigenous communities.

The curriculum too is a major obstacle to school performance since it does not provide First Nations' content that is sequentially ordered over several grades to learn about their own socio-economic, political, and historical contexts. Consequently students begin to "tune out" in grade 4 and by grade 10–12 end up dropping out. The serious disconnect between them and the curriculum affects their parents who see no reason why they should stay in school. The director advises that the students and the communities would benefit from a curriculum that is based on pragmatic content that has an applied value (eg, trade and technology courses), and would be more appreciated by their parents and the community.

Indigenous High-School Youth Who Manage to Attend Post-Secondary Institutions

A prevalence study[67] was launched to determine mental illness and substance use in cross-Canadian post-secondary institutions in their Indigenous and non-indigenous students. The prevalence comparison showed Indigenous students were more likely to engage in self-harm, attempt suicide, and have a lifetime diagnosis of depression or anxiety. Moreover, they were also more prone to excessive use of alcohol, marijuana, and other recreational drugs. In short, mental health and related problems were higher in Indigenous post-secondary students cross-Canada than in non-Indigenous ones. The authors[67] advise supporting Indigenous students in post-secondary institutions by tracking mental health and wellness resources provision and use.

Discussion

Summary of Main Points

This article set out to expose the suicidality vulnerability of Indigenous communities worldwide due to their extreme poverty and unsustainable life-quality conditions rooted in historic circumstances that devalued their cultures and

languages, and their views on "ways of being". Persistent neglect in their regions continue to operate and are complicit in their suicidality. In fact, within the global suicide scenario, Indigenous peoples are found to be at higher risk than non-Indigenous in the same geopolitical regions. The Canadian case, a multilayered complex situation, and the focus of this article, demonstrates the shared persistent factors with Indigenous peoples across the globe, and provides the specifics of a complex and entangled reality of Indigenous modern life, and their striking suicidality risk in the Canadian context. The Transcultural Psychiatric framework[4] employed here is both explanatory and predictive of their suicidality, given their lived experience of poverty, marginalization, and injustice that impacted their health determinants, while the IPTS[5] framework' identified psychological triggers striking their mental health and inevitable suicidality, confirmed with data and examples that demonstrate their effect in these vulnerable Indigenous youths and young adults.

Three Poverty Dimensions: Health, Education, and Living Standards MPI Identified

When degraded and experienced simultaneously, these dimensions spur significant poverty increase and suicidality. These were discussed and all three shown to be serious barriers to the wellbeing and mental health in the Canadian Indigenous context. Especially poignant is the data demonstrating that most indigenous communities' health is compromised as evidenced by their inordinate rate of complex illnesses including diseases due to their environmental toxicity that further decays their mental health and increases suicidality risk and rate resulting in a 10-year difference of life expectancy compared to non-Indigenous Canadians. In addition, their employment and income are markedly lower, leading to poverty conditions fossilized at levels of despair without hope of escape, and significant high risk suicide predictors. The communities most remote from urban centres, with inaccessible medical care and educational institutions, are the Inuit whose daily lives of poverty and deprivations are marked with the highest youth and young adult suicide rates across the globe.

Combatting Suicide Rise in Canada

Nonetheless, signs of flourishing in Canadian Indigenous communities living off reserve was cited in an editorial.[68] It revealed factors associated with positive mental health: having post-secondary education, having a mentor/confidant, and experiencing less trauma and adversities in childhood. The authors suggest that these may be used as targets in mental health promotion efforts. While indigenous peoples are diligently trying to eradicate or at least minimize barriers to health determinants in their communities, they acknowledge that partnerships with universities and governmental authorities are needed to actualize successfully these complex mammoth tasks.

The following pages describe governmental and Indigenous communities joint efforts that were put in place towards responding to cross Canada Indigenous suicidality risk, and the article authors' proposed intervention plan.

The Indigenous communities launched a Hope for Wellness Helpline in 2016- A service available cross Canada at all times to offer chat or phone support by trauma informed culturally competent counsellors in French, English, and several Indigenous languages, with direct connection to their communities.[69] Subsequently, the Canadian government provided a dedicated helpline to all Canadians in suicidality risk. The impetus for this country-wide strategy was the unprecedented increase in suicide rates compiled in a spellbinding infographic based on 2019 suicide data noted earlier.[31] The Canadian Radio-television and Telecommunications Commission (CRTC), adopted a dedicated number, 988 to call or text, for Canadians in mental health crisis who need immediate suicide prevention intervention, with calls directed to a free suicide prevention intervention service available cross country 24/7 to benefit all, no matter their geographical location, using the three digit number. The service scope was determined through continuous dialogues with provincial, territorial, Indigenous partners, and suicide prevention stakeholders.[70,71] In fact, the service is targeted according to the caller's choice of age, indigeneity, and language (three Indigenous languages are offered) to receive services specifically geared for them.

Researchers suggest that a culturally responsive suicide prevention effort requires ensuring professionals and counsellors dedicated to intervene with potential Indigenous suicide victims, understand the differences in views of suicide between Indigenous and non-Indigenous peoples.[72] While suicide in Western cultures is viewed as individuals' despair response to intolerable events and circumstances perceived as hopeless, the Indigenous peoples social despair response is based on historical and lived outcomes of their past and current injustice and ongoing social suffering. This

view is nurtured by the strong ties to kin and community that encompass live and dead individuals, the transmitters of community culture. In contrast, suicide prevention programs based on Western mental health tenets, fail to meet the needs of the communities, clarifying that Indigenous cultural views and lived experiences are needed if they are to succeed, ie, suicide is a result of historical (and ongoing) discontinuities in cultural, community, and family relations; consequently, suicide prevention is best allocated to nonprofessional community members. Clearly, suicide prevention belongs in locally formed community projects. These differences should guide all efforts in combatting barriers to increasing mental health.

Indigenous Early Learning and Childcare Joint Initiative

Indigenous communities value literacy and school achievement, as well as early culture transmission to ensure their children's wellbeing, a protective factor in mental health. A collaborative initiative between Indigenous communities, with large numbers of parents' views throughout the process, in partnership with the Employment and Social Development Canada (ESDC) was launched in 2018.[73] Jointly, they developed a transformative Indigenous framework, *Early Learning and Child Care* (ELCC), that reflects the unique cultures, aspirations and needs of First Nations, Inuit, and Métis children across Canada. In this framework, all Indigenous children aged 0–6, and their families have the opportunity to experience high-quality, culturally rooted early learning and childcare programming. It is meant as a foundational effort that will continue to evolve, and is meant to provide high quality programs, develop a strong sense of identity in the children, and provide educational opportunities and school readiness that will be their gateway to health and well-being to sustain them into adulthood in an inclusive environment meant to accommodate all children. Programs are a resource centre for families, providing them with information, resources, connections to community, education, social needs, and childcare, to allow time to pursue "traditional activities" or work and study and encourage parents to participate in their culture and use their community languages. Although the framework is multifaceted, it includes elements that are important to each of the Indigenous nations.

The framework includes Indigenous peoples residing in urban areas, and the challenges inherent in targeting distinct peoples content to the diversity of urban peoples. Efforts in providing ELCC experience and education is paramount in rural areas. The barriers identified are reminiscent of those restricting access to health facilities discussed earlier. These challenges necessitate full collaboration with all government agencies, both Indigenous and non-Indigenous through continued efforts and advocacy. Indigenous communities are fighting suicide and suicidality from the roots up, and are determined to use their resilience in minimizing or eradicating this threat to their existence.

Article Authors' Strategies for Simultaneous Literacy Promotion at All Grade Levels

The authors would like to underline that the recommended strategies rely on existing community resources so that these are largely achievable without the need for long distance travel or personal cost to community members. No pharma treatment recommendations are offered as these are not in the purview of the authors of this article. However, psychiatric/medical involvement is highly recommended since, as was discussed, Indigenous physical and mental health are largely compromised, forming high risk elements for suicidality.

The threat of suicide of young people weighs heavily on Indigenous communities across Canada, and are especially felt in Inuit communities where the memories of independence in their homelands was shattered with the forced life in permanent settlements compared to former life traveling between land to marine hunting grounds, changing economies, and lack of traditional food sources. The Inuit and especially their young populations are at high risk for depression and anxiety, confirmed by the recent stupefying surge in youth and young adults' suicide.

Nonetheless, Indigenous people are resilient, despite adverse socio-economic conditions and social barriers to health and justice. The recent TRC efforts and use of the court systems allowed them a voice and funds for some improvements in their situations. The following authors' penned intervention strategies are meant to develop skills and competencies needed in education at the various age groups to impact future employment possibilities.

Strategies for Developing Pro-Literacy Attitudes and Behaviours in ELCC

The recent efforts in establishing ELCC centres were based on two integrative goals: 1. Encourage the development of the needed protective factors to support the growth of strong traditional cultural identities to combat mental issues and

reduce their suicide risk, and 2. Prepare them for learning and acquisition of skills needed for education that is instrumental in paving their road out of poverty. For this second major goal, the Indigenous former director's observations[65] provide a viable explanation and a guideline to minimizing children's reluctance to participate in class discussions, inability to question and provide responses, and their general negative attitude to school, teachers, and authorities. These, he pointed out, reflect the attitudes of *their communities elders* who view education through negative lenses which include the disdain for non-pragmatic content that is not valued in their communities These are directly connected to *child rearing attitudes* and *negative experience of residential school life.*

In these authors' view, establishing the ELCC is the opportunity to alter the insular attitude to non-traditional education in the students, families, and communities. The goal in this proposed strategy is exposing the children to a curriculum that is sure to provoke them to "fall in love with books", materials, and activities that are meant to transform their attitude. The strategy, well researched and applied around the globe in myriad languages, is *Dialogic Reading*,[74,75] an activity that encourages child participation in a "conversation" during reading, using strategies that promote thinking and talking about a book the child or children share with the teacher/ educator or parent, and is known to increase comprehension and vocabulary. Early exposure to "conversations", and showing the child's opinion is welcome and it matters, is bound to transform reluctance to assert themselves (verbally). In an after reading activity, the adult and child can engage in illustrating parts of the story that are especially interesting to the child, and then have the child "retell" the story with the educator or parent as a partner in this event. The pictures can then form the child's book to take home and enjoy with the family (gives the children the opportunity to shine). A variety of Indigenous-content children's and youth books are available for all ages (including adults) from a Canadian First Nations company, *GoodMinds.com*, that is also stocked with Metis and Inuit content books.

Honing Integrative Thinking Strategies in Upper Elementary and Secondary School

The Written Exit Slip,[76] an activity that can be delivered in any language, will work well with students in grades 4–5, the *tune-out* grades identified by the former school director,[65] and beyond, to end of high school, and certainly works well with post-secondary levels. This was verified in a private correspondence with an instructor of a class of 80 young men and women students in a professional training stream, reported as eliciting high-interest, enthusiasm, and anticipation of the next class with expressed interest in sharing their responses with classmates. The Exit Slip is performed during the last 15–20 minutes of a 60-minute class, the students are provided with the task, and the explanation: "there are three points that must be answered, and the responses and queries discussed in the following class". This activity is instrumental in sharpening listening skills, developing metacognitive and executive function skills such as identifying the topics covered, and examining their proximal comprehension of the lesson content to identify areas that appealed to them and their ability to explain why, and those that remain somewhat foggy and require additional clarification. It encourages focus and thinking about the lesson content (combats passive listening). The activity is resumed in the next class so that distal memory and comprehension are stimulated as well. The directions are:

> The following are obligatory and count for marks: 1. What was today's lesson about? State the topic(s) covered - some students will not be able to distill the topic from the content and this should form a remediation goal as it is a gap in their development that needs to be addressed rapidly so that they can move on; 2. Which topic was most interesting to you and why? (tell us the topic and give a reason(s) why you chose it); 3. Which topic was most difficult for you to understand, and why? (Your concerns will be discussed in class at the start of the following lesson - without mentioning names). Thank you for completing your Exit Slip.

Put It in Writing: Teachers' Role, Narrative, Communication, and Social Skills

The teacher's role is first and foremost to get to know all the students and especially the Indigenous ones (when located in a mixed urban setting). The survey demands sensitivity as it will examine their life-skills and areas in which they fail or excel. The survey probes their roles in their families, the family expectations of the student and the student's feeling about these; note whether they have physical space to pursue their preferred activities at home, and describe their community's places for teens to "hang-out" in, chat, and recreation; talk about best friends if offered, discuss their participation in sports; ask whether the community has access to a library (mobile or in-situ), the number of books they estimate are in their homes, identify who in their families enjoy reading, and the type of books they enjoy. Next, examine

their attitude to reading (create a rubric 1–5 from *no* or *very little interest* to *great interest*), their reading habits, and how easy or hard it is for them to comprehend what they read; ask about their writing skills: do they use writing outside of school, do they have a pen-pal that they communicate with and how do they do so, etc. Verify whether they ask for help to improve their reading fluency and comprehension. Ask them to construct short answers to questions regarding books they like, and any reading material, and what they do when assignments are beyond their capacity. At the end ask, what they hope to achieve in school, and what they feel are their strengths, needs, and plans for success. The questions should be short, and easy to read so to minimize frustration. It is best not to point out spelling and grammar errors at this point, but rather use these to "view" spelling and grammar needs. In short, *think outside your cultural box* to match strategies that will answer the needs of your students, and give them choices of topics they would like to pursue (without judgment).

The above are a few suggested topics and questions, however, teachers' own knowledge of these communities should provide an essential profile of the target students; they will certainly be rewarded with improved writing skills, essential for going forth in their education. Finally, the students need to be presented with infographics about college and university requirements or trade school as evidence for required prospective writing skills. It is always advisable to make them privy to what is expected prior to plunging into an activity or exam. In sum, the activities and knowledge they gain thanks to teachers' efforts will serve them well throughout their educational journey, *en route* to employment and off the path to suicide.

Furthermore, students' must be *engaged in writing reflective essays* on their experiences (about once a month). These should be collected and discussed individually. These are meant to help them with self-exam by delving into their minds (introspect), and exposing the fact that the dreaded task of writing, perceived as an obstacle, is in reality a challenge they are learning to manage successfully. Collecting all their writings in a portfolio and encouraging them to examine periodically the teacher's observations in the margins, will give them access to ample feedback on their writing performance. Once in their portfolios, they can be encouraged to add sketches, drawings, or photos as these provide an additional dimension to their product and gives insight into their consciousness.

Focus on Writing Skills Essential

Writing skills are the *penthouse* of the complex literacy edifice, and the most difficult to achieve as they hinge on sufficient accumulation of background knowledge via mounds of readings (requires strong reading competence); varied vocabulary and idiomatic expressions; linguistic and metalinguistic elements; cognitive and metacognitive knowledge; as well as creativity and reasoning skills, including ability to sequence an argument in a logical manner. Furthermore, the genre or type dictates the specific skills needed as these vary, eg fact, fiction, poetry, narrative, autobiography, etc., and require prospective thinking on who the reading audience will be. The integration of all these require intact *Executive Functions*, the conductor in this orchestra composed of a complex of multisite brain regions and countless connections between them that is enhanced or diminished with the absence or presence of a learning disorder, for example, Effective writing is a skill that requires excellent instruction and oodles of practice with self-critique skills that should be fostered in the classroom. Indeed, this complex skill must be taught simultaneously with reading instruction from the start of elementary school and continuously throughout the grades, all the while honing their writing skills. An approach provided in the book *Writing Better* -strategies for teaching students with learning difficulties[77] is an effective resource for addressing all types of students and writing woes, no matter their struggles' etiology.

Among the various reasons to learn how to write effectively is its therapeutic effects because "writing about one"*s feelings can lower blood pressure, reduce depression, and boost the immune system*.'[78] An interesting recent article by a professor in English[79] alerts us to the importance of encouraging marginalized students to write about their lives, their experiences, and thoughts to give them voice and substance, an element that was discouraged in past curriculums. The author suggests experience-based, narrative writing assignments, with added complex analytic activities to help widen their view of their experiences. The author advises using writing skills improvement as an incentive or gateway to entering higher education, a real possibility when they allow instruction and assistance in reaching their goals. An activity that can integrate this attitude is using the topic *All About Me*, with guiding questions meant to provide

students' view of themselves (physical, psychological, and social), provoke retrospective memories, recent or present episodic event memories, as well as prospective thoughts, wishes, and desired goals and activities.

Out of the Box Activity to Widen the Students' Horizons and Friendships

This closing section consists of an activity that requires *out of the box thinking*, meant to benefit principals, instructor/teachers, and students. The activity is two pronged, 1. Gather as much information as possible about the students' literacy and their self-identified needs with a well-thought out survey and short-answers task, and 2. Introduce them to the idea of having a pen-pal (male or female) in another community (preferably from their own nation) who will act as their model for flourishing in school, have mental and emotional strengths, and are motivated to take part in the project which is designed to propel them forward in the most difficult task of literacy, writing. Alternatively, partnering with another school in the *Pen-Pal Project*- The joint project would benefit both sets of students and especially those who are struggling. A well-constructed project may be sponsored by the educational authorities who can allocate needed funds to actualize the plans for at least a two-years or more. The students' letters may be posted digitally (with supervision to avoid cyberbullying), and prior to writing, teachers help students evaluate their letters using a writing rubric with well-defined elements (to see what is expected, and help encourage them to apply it to other narrative and essay writing tasks); the students will be expected to revise their letters with the teacher's guidance. In essence, it provides both a formative and a summative task as they will earn points for writing and revising their biweekly product, prior to sending it to their pen-pal.

The Skills/Competencies Canada Body

The discussion ends with an introduction to *The Skills/Competencies Canada body*, an organization with member groups in each province and territory that works with governments, employers, educators, and labour groups to promote *skilled trade and technology* careers to Canadian youth. They offer competitions and programs to provide "hands on informative, interesting and educational information". The careers span Construction, Employment, Information Technology, Manufacturing and Engineering, Services, and Transportation, as well as Workplace Safety, and Public Speaking. No matter the career path chosen, employers will look for nine skills identified as essential in any skilled employee. These need to be nurtured as they will be instrumental in giving purpose to marginalized and suffering youth who see no way out of the cloud of gloom. These should be introduced in elementary school and consequently in each of the following school years with visits to trade fairs and competitions and visits from skilled workers to inspire curiosity and ignite a desire to "belong" to the skilled forces of their communities.

The Take-Home Message: The Endgame

It is vital to ensure students of all ages are acquainted with the identified and expected *nine skills* to garner employment in any profession so to transform their grim futures and suicidality to vistas of hope and promise. These should be read and explained at each level, age-appropriately, starting with early elementary, and accompanied by actual reasonable facsimiles of reading and writing samples (and photos) about different professions so to help students remember these. Discussion on what occupation or professions they envision in their futures should be integrated in the lesson and live facsimiles introduced. The '*Nine Skills for Success in the work place*,[80] are included here:

1. *Reading*: ability to locate, comprehend, and employ information presented through words, symbols, and images.
2. *Numeracy*: ability to find, understand, apply, and report mathematical information presented through words, numbers, symbols, and graphics.
3. *Writing*: ability to share information using written words, symbols, and images, to communicate ideas and information to other people.
4. *Communication*: ability to receive, understand, consider, and share information and ideas through speaking, listening, and interacting with others.
5. *Problem Solving*: ability to identify, analyze, find solutions, and make decisions; helps to address issues, monitor success, and learn from experience.
6. *Collaboration*: ability to contribute and support others to complete a common project goal, to work respectfully with people of different professions, experiences, cultures, and backgrounds.

7. *Adaptability*: ability to adjust goals and behaviours change occurs by planning, staying focused, persisting, and overcoming disappointments.

8. *Digital*: ability to use digital technology and tools to find, manage, apply, create and share information and content.

9. *Creativity and innovation*: ability to imagine, develop, express, encourage, and apply ideas in ways that are new or unexpected, or provide new methods and norms. Note: Employers are seeking people "who can apply creativity and innovation skills to their work in the diverse settings, and come up with new solutions or approaches to tackling challenges".

Conclusion

Current Trends in Suicide Intervention Prevention Approaches

The rise in suicide incidence around the world in the past several decades spurred awareness among suicide stakeholders that suicide preventative approaches are needed in interventions, and preferably, approaches based on psychosocial elements, as these play a role in suicide prevention, based on E. Durkheim's (1858–1917) view of suicide (highly simplified here) as a product of social factors and poor integration of individuals into society. In his theory he allocated importance to social institutions (eg, education, religion, etc.) in forming individuals' psychological core and underlying behaviours, including suicide.[81] A call for papers of the research topic, *Psychosocial Interventions for Suicide Prevention*,[82] generated a dozen articles, including an editorial, covering diverse, creative, and modern psychosocial-based prevention intervention approaches to suicidality. These provided a *facsimile* of current approaches to combating the growth in suicidality among clinical and nonclinical populations. Current approaches to detecting suicide risk includes social media, and electronic health records, to name a few.[83] As the authors note, when put to the test, time will tell the ones that are effective in impacting the current trend in suicidality. Future directions will focus on examining proposed models of suicide prevention and determine the impact on high risk populations. It may turn out that indeed, the different models may serve best specific groups while some favour others. Perhaps this may lead to intervention approaches based on grouped phenotypes, or incite earlier prevention efforts in identified high-risk individuals. Only time will tell.

The Present Article a Good Fit in the Current Psychosocial Intervention Trend

The focus of this non-systematic review, including the proposed intervention plan, blends in well with the current trends in suicide prevention intervention using a psychosocial approach. In short, we chose to highlight education as a major player in combatting suicidality in high-risk Canadian indigenous youth and young adults. The prominent reason is that Education is the key to literacy acquisition; without it, valuable knowledge to enhance life and mode of living, and especially opportunities to increase income, feelings of self-worth, and further their education are nonexistent thereby trapping individuals in the abyss of poverty with its deep-rooted intergenerational repercussions. A comprehensive joint effort in all layers of society's governing and regulating institutions are needed to ensure Indigenous youth are provided with effective programs, motivation to pursue education, develop literacy with a focus on writing, arm themselves with the competencies employers value, and consequently substitute hopelessness with anticipation of brighter futures. We strongly believe that the emphasis on *Education and Literacy* is the most logical and economical treatment venue to help derail the suicidality trajectory of Canadian Indigenous youth and young adults across Canada.

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