



ARTIFICIAL INTELLIGENCE A TOOL IN SUICIDE PREVENTION AMONGST INUITS OF CANADA: SYSTEMATIC REVIEW

Femi Duyilemi

(MSN, RMN, RN, PMH-BC)

Email: fduyilem65@aol.com

Cite this article:

Femi Duyilemi (2025), Artificial Intelligence A Tool in Suicide Prevention Amongst Inuits of Canada: Systematic Review. African Journal of Health, Nursing and Midwifery 8(1), 21-33. DOI: 10.52589/AJHNM-IZQ6FNWU

Manuscript History

Received: 18 Nov 2024

Accepted: 8 Jan 2025

Published: 17 Jan 2025

Copyright © 2025 The Author(s).

This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: *The Inuits of Canada who live in the Nunavut territory are confronted by the problem of a higher suicide rate than the rest of Canada and the world. The suicide rate in the region is 10 times higher for the general population and 25 times higher among men than in the rest of Canada. The problem is partly linked to mental health issues, yet because the region is remote and isolated, Inuits do not have adequate access to culturally competent mental health support and resources. Consequently, in empowering the community to deal with mental health issues, for suicide prevention, this systematic review involving a comprehensive review and analysis of eight papers published between December 2014 and December 2024 justifies the suitability of Artificial Intelligence (AI) tools for suicide prevention. Additionally, ethical risks should be identified and minimized, stakeholders actively involved, and AI algorithms consistently trained to increase accuracy.*

KEYWORDS: Suicide, Prevention, Inuit, Health, Artificial Intelligence, Mental.



INTRODUCTION

Researchers such as Hu et al. (2020) and Macdougall (2019) have recently established that suicide has become a global public health and social problem as it imposes medical, mental, and economic burdens on people, families, and societies. Concerningly, the high suicide rate is identified as the most intractable problem the government of Nunavut in the Canadian Eastern Arctic faces, especially among the young Inuits (Chachamovich et al., 2013). For instance, data suggests that young Inuit men are 40 times more likely to die from suicide compared to their peers in Southern Canada and 25 times higher than the Canadian average (Affleck et al., 2020; Konefal, 2021). Also, for the general population and in comparison to the rest of Canada, recent data indicates that the suicide rate among Inuits in Nunavut is 10 times higher (equivalent to 110 deaths per 100,000 people) (Chachamovich et al., 2013). With such statistics, the suicide rate in this population is among the highest worldwide, a problem that is partly linked to unmet mental health needs (Macdougall, 2019).

Notably, research has established that mental distress and related health conditions among young Inuits characterized by conditions such as depression, anxiety disorder, mood disorder, and bipolar disorder tend to exacerbate suicide ideation and suicide attempts (Konefal, 2021). Although Canada has a developed healthcare system, the indigenous people, such as the Inuits, are disadvantaged. The community's lack of adequate and culturally competent mental health support and resources is linked to the recorded high suicide rates (Kumar & Tjepkema, 2019). Fuller (2004) argued that within rural and remote areas, unavailability and inaccessibility to essential mental health services have traditionally posed challenges in dealing with mental health concerns. As one of the largest, northernmost, newest, most isolated, and sparsely populated regions in Canada without road networks (Rabouam, 2023), access to quality mental health resources for Nunavut's residents is limited. According to Ferrazzi and Krupa (2019), Nunavut's remoteness and isolation adversely affect access to essential mental health services for the locals. Nunavut's healthcare system contends with challenges of heavy reliance on short-term care providers from outside the territory and difficulty providing culturally competent care (Cherba et al., 2019). In fact, the territory lacks psychiatric hospitals and mental health personnel and mentally ill people are often sent to facilities in other equipped hospitals (Upfold et al., 2023). Despite its isolation and underdeveloped infrastructure, only few Inuits experiencing mental health issues can travel to other provinces for quality care and support. Thus, the limitation on availability and access to consistent quality mental healthcare and resources could justify the prevalence of the high suicide rate in this community than the rest of Canada and the world.

Therefore, amid calls to increase availability and access to quality and culturally competent healthcare services in the region, such as through developing and training the local workforce who could stay long-term in the territory (Cherba et al., 2019), other often overlooked alternatives, such as tapping into technological advancements, are a vital consideration. Modern technologies have the potential to provide an array of innovative and cost-effective ways to provide specialized mental health support, services, and resources, including for remote communities (Bryant et al., 2015; Taylor et al., 2020). However, despite the contribution the technologies have, there is limited uptake especially in healthcare for the remote communities like the Inuits (Bryant et al., 2015). Consequently, it is on this basis that a systematic review is developed with the aim of explaining and justifying that artificial intelligence (AI) tools are vital for suicide prevention amongst Inuits of Canada.



THEORETICAL UNDERPINNING

In this research, as the basis for further investigation of the pressing suicide problem in the Nunavut community, I have selected the Technology Acceptance Model (TAM). In my view, the theoretical framework is ideal in this research considering that it could further facilitate the exploration of the problem and justify the utility of AI tools in suicide prevention, based on a specific focus on the Inuits of Canada (Nguyen et al., 2020). As Kamal et al. (2020) noted, TAM's emphasis is on the reasons people tend to either accept or resist the introduction of new technologies. Marikyan and Papagiannidis (2024) asserted that the framework was initially introduced as a theoretical foundation to successfully implement new technologies and systems. The model has its roots in the theory of Reasoned Action that introduced a psychological perspective to understand human behavior (Marikyan & Papagiannidis, 2024). Accordingly, the TAM theoretical framework posits that people will accept new technologies if perceived useful and easy to use but reject technologies with perceived limited utility and that could be difficult to use (Nguyen et al., 2020). Marangunić and Granić (2015) observed that amid the ever-increasing technological advancement and continued integration of these technologies into users' professional and private lives, decisions about acceptance or rejection are key questions that need to be addressed.

The researcher has proposed TAM as an ideal framework to guide the implementation of AI-based healthcare technologies and applications such as telemedicine, mobile applications, and electronic health (Rahim et al., 2018). For instance, as Nunavut grapples with ensuring access to quality and culturally competent mental health support and resources, TAM could guide the modification of AI-based tools to meet the local expectations (Nguyen et al., 2020). Also, TAM is ideal because of its broad applicability across industries, including the implementation of new technologies in the healthcare sector (Shachak et al., 2019). Importantly, in utilizing the TAM framework in this research, the emphasis will be on the perceived utility of artificial intelligence technologies for suicide prevention within the Nunavut community by targeting specific challenges the Inuits face. In other words, the TAM framework will guide this research by questioning the utility of AI tools in suicide prevention among the Inuits of Canada (Marangunić & Granić, 2015).

METHODOLOGY

Search Strategy and Criteria

The search strategy and criteria explain how the papers analyzed in this systematic review were identified and the guiding criteria. This phase of writing this article entailed comprehensive literature searches in databases, including Google Scholar, PubMed, and the National Library of Medicine, for studies relevant to AI and mental health. The online databases are popular and reputable for providing quality, reliable, and peer-reviewed literature (Aggarwal et al., 2020). Within these databases, key terms such as "AI for suicide prevention," "suicides amongst Inuits of Canada," "technology and suicide prevention," "AI for mental health support," "mental health and suicide among Inuits," "telehealth in remote areas," and "culturally competent AI health solutions for Inuits" helped in searching and identifying relevant papers for systematic review in this research. A second criterion was studies published in the last 10 years (between December 2014 and December 2024). This was important as the criterion would provide sources with updated and relevant insights regarding the usage of AI tools for suicide



prevention among the Inuits. The third criterion was that the selected studies were in English since if they were in another language other than English, there was an increased risk of lost meaning or misinterpretation during translation. "Language systems are prone to errors when translating between languages with different syntax or grammatical structures" (Kwun & Hun, n.d., p. 6). Lastly, all the reviewed studies were either quantitative, qualitative, mixed-method research, or systematic review.

Study Selection and Data Extraction

For each search that met the criteria, the titles and abstracts were reviewed to identify the papers for comprehensive review and possible analysis. In the end, eight papers that informed on the mental health issue and the potential of AI tools in suicide prevention among the Inuits of Canada were selected for comprehensive review and analysis. Each of these papers was downloaded for review and analysis. In data extraction, the focus was on the authors' credibility, research aim, methodology, results, implications, and limitations. The extracted data was organized into common themes, which were useful for data analysis, results, and discussion.

Analysis

The systematic review analysis approach was utilized in this article. A systematic review analysis describes an approach where studies relevant to a research topic are selected, reviewed, and analyzed (Scheerder et al., 2017). This approach generates informed perspectives regarding a research topic. Therefore, by consolidating findings from the eight selected papers, the systematic review analysis has facilitated the emergence of important perspectives regarding AI use for suicide prevention among the Inuits of Canada. Although systematic review relies on already published data, the method has the potential to enhance knowledge on matters of suicide attributed to mental health issues and the relevance of AI tools as solutions to this problem (Bettany-Saltikov & McSherry, 2024). In healthcare, findings from systematic reviews have practical applications in the delivery of care, clinical decision-making, and policy development. However, this can only be achieved if there is adequate literature and a clearly outlined protocol for systematic review (Munn et al., 2018). These guidelines were critical while conducting this research.

RESULTS

The results after a systematic review of the eight articles are presented in this section. The results are presented as three main themes, namely, factors contributing to high suicide rates, AI applications for suicide prevention, and the challenges and considerations in AI adoption. In this section, each of these themes is discussed in detail and supported by relevant scholarly literature.

Factors Contributing to High Suicide Rates

Research suggests that suicide rates amongst Inuits of Canada are high because of multiple factors that interact, posing mental health challenges that increase suicide risk. For example, factors originating from historical trauma associated with colonization, forced assimilation into residential schools, forced relocation, and knowing others who have committed suicide



interact, thus increasing suicide risk. Second, Nunavut is one of Canada's most isolated territories, and as a result, its poorly developed infrastructure, including in healthcare, is a barrier to how Inuits of Canada access quality and consistent mental health services and resources (Chachamovich et al., 2015). Besides, in remote areas such as Nunavut, residents are disadvantaged in accessing quality, culturally competent healthcare services and resources to overcome mental health issues, which increases suicide risk (Rintyarna et al., 2023; Ferrazzi & Krupa, 2019). Suicide could be a response to intergenerational trauma. Such response patterns are normal reactions to trauma and can cause distress when experienced. Those reactions do not mean an individual has psychological issues or disorders. Stress caused by trauma is made up of unique sets of symptoms and criteria (Duyilemi, 2024).

Ultimately, what these underlying factors insinuate is that as Nunavut strategizes on how to solve the puzzle of high suicide rates in the community, addressing the mental health problem the community has historically faced is a critical consideration.

AI Applications for Suicide Prevention

As revealed, the Inuits of Canada experience disproportionately high suicide rates due to factors associated with inadequate access to quality mental healthcare and resources. To address this problem, research suggests that AI can complement traditional approaches to provide tailored and culturally relevant solutions. For instance, Götzl et al.'s (2022) mixed-methods research investigated how AI could shape interventions for mental health. The researchers established that many young people have positive attitudes and perceive AI-based mHealth apps as useful for improving their mental health. These tools can promote personalized and digitized mental care. Also, the predictive AI features based on deep learning algorithms obtain and analyze large data volumes to identify factors precipitating suicide risk for culturally-centred interventions. This has been acknowledged with the use of Recurrent Neural Networks (RNNs) in mHealth apps. RNNs can forecast depressed moods based on self-reported histories and optimize resource allocation and training components based on dynamic learning and feedback loops (Götzl et al., 2022). The outcome is the ability for AI to intervene on time, thus preventing suicide risks. The usefulness of AI lies in predicting suicide risks and managing underlying suicidal behaviors. A study reviewed literature published between January 1990 to June 2019 regarding the utility of advanced technologies such as AI in suicide prevention. The researchers found that AI and Machine Learning (ML) can collect big data based on predictive algorithms. This data could then be used to predict suicide outbreaks and facilitate timely identification of at-risk populations. Also, ML and AI algorithms can be integrated with the development of smart technologies such as wearable devices, mobile applications, and social media for real-time monitoring and response to suicide behaviors (Fonseka et al., 2019).

AI-based mobile applications and wearable technologies facilitate real-time data collection and analysis through sensors that identify suicide risks. Importantly, the discussions on the suitability of AI tools for suicide prevention are incomplete without assessing the potential of both the mobile applications and wearable technologies as solutions to this problem. The wearable armbands and mobile applications such as Memind allow data collection relating to appetite, sleep, and suicide ideations (Berrouguet et al., 2019). This allows AI to identify issues such as psychological and mental health issues that increase individuals' suicide risk. Machine learning enables comprehensive analysis of this real-time observational information to uncover vital as well as unexpected data patterns about suicide risk. When such user data is collected



through sensors and is combined with users' self-reported data, AI extracts relevant information for analysis and to accurately explore possible interventions (Berrouiguet et al., 2019).

Furthermore, AI-supported telehealth integration has proven critical in bridging the gaps in the accessibility of essential healthcare services that have historically disadvantaged individuals in rural areas. Rintyarna et al. (2023) described telehealth as an ideal solution for healthcare access disparities in disadvantaged rural residents. Telehealth integration supported by AI technologies enhances how individuals in remote areas receive medical consultations, diagnosis, and access treatment remotely. The related technologies reduce the burden of travel and geographical limitations. The implications are reduced inequalities in accessing healthcare, better health outcomes, and significantly reduced costs (Rintyarna et al., 2023). However, for these benefits to be realized, AI language translation tools are critical as these will facilitate enhanced collaboration with diverse stakeholders in the delivery of health and support services and resources for suicide prevention. For such remote consultations, diagnosis and treatment, efficient and accurate AI translations are important for effective collaboration, healthcare delivery, and the dissemination of medical information (Teibowei & Agbai, 2023).

Moreover, AI has increasingly been integrated into social media platforms with the primary goal of suicide prevention. Notably, since Twitter pioneered AI as a tool for suicide prevention a decade ago, other social networking platforms have, in recent years, become critical tools to proactively monitor social media content to identify and flag suicide risks (Fonseka et al., 2019). For instance, the University of Vermont created a social media base that can analyze linguistic content such as speech patterns, language use, word count, and activity level to identify signs of depression. Similarly, as one of the leading social media platforms, Facebook launched an automated AI system seven years ago with the aim of detecting suicide content in its platform for urgent review and response (Fonseka et al., 2019). In accordance with this detection system, "If suicide risk is detected, crisis response protocols are initiated, which may include providing supportive resources and crisis line information to users or alerting local emergency responders" (Fonseka et al., 2019, p. 959). This study echoes that AI tools should be exploited based on their utility to the targeted users. The utility of these AI tools is influenced by aspects such as the capability to provide personalized information and support, the ability to detect distress, engage in natural human dialogue, alert pre-nominated people, facilitate positive stories of hope and recovery, and enable interactions and communication with peers (Thorn et al., 2020; Götzl et al., 2022). Besides, AI tools such as chatbots are effective even when some culturally and linguistically diverse communities discourage open talks and discussion about the suicide problem (Thorn et al., 2020). The AI tools facilitate open communication and a positive climate, which are essential to mitigating the suicide risk. Therefore, with the current advancement of AI technologies and related models, there is an enhanced capability to increase accuracy in suicide detection and prevention.

Challenges and Considerations in AI Adoption

Findings from the reviewed papers further revealed that although these AI tools have the potential to enhance how mental health care and support resources are provided to the Inuits of Canada, there are challenges that could hinder implementation. A major problem is the ethical issues that emerge with the use of AI technologies. For example, transparency and privacy stand out as common ethical challenges with the utilization of AI tools in suicide prevention (Götzl et al., 2022). A notable case happened in 2014 after a Twitter-based initiative that alerted users when their followers posted distressed content suggesting suicide ideation was suspended



because of privacy concerns (Fonseka et al., 2019). Thus, the expectation is that these ethical challenges should be proactively identified and minimized to optimize the utility and impact of AI tools in suicide prevention. Some stakeholders have taken measures to mitigate the ethical risks with the use of AI tools for suicide prevention. For example, to overcome the privacy issue, some social media platforms have integrated suicide prevention and crisis response as support to users and have done this without sharing personal health information (PHI) (Fonseka et al., 2019). Importantly, with the right ethical frameworks and digital literacy for telehealth users, it is possible to minimize ethical risks with the utilization of AI for suicide prevention (Rintyarna et al., 2023).

Furthermore, there are concerns that AI tools might be ineffective in suicide prevention, especially taking note that the technological tools are sometimes inaccurate. Specifically, because AI algorithms are designed and created by humans, the human aspect of biases and errors can be introduced. When this happens, it renders these tools ineffective in determining and preventing suicide intent and related risks (Fonseka et al., 2019). Various incidents that have happened in the recent past support this narrative. For instance, Google has had problems with its image recognition algorithm, leading to incorrect classifications, indicating inefficiencies of AI tools. Similarly, when the London Metropolitan Police attempted to use AI tools to flag incidents of child abuse on electronic devices, the detection software occasionally misclassified photos. To overcome these challenges, regular and quality algorithmic training of AI tools for suicide prevention is essential, as such training will increase the model's accuracy and confidence in making predictions relevant to suicide prevention (Fonseka et al., 2019). Nevertheless, the settings for utilization of AI tools are constantly changing: these tools should be adjustable to the changing situations and new information extracted from the feedback loops (Götzl et al., 2022).

DISCUSSION

The findings suggest that in consideration of the AI solutions ideal for addressing the high suicide rate amongst Inuits of Canada, the solutions should ensure increased availability and accessibility to quality and consistent mental health care and resources. This is particularly important considering that insufficient mental health care and resources emerged in this research as factors precipitating suicides in the community. Therefore, in accordance with the Technology Acceptance Model, the proposed AI tools for suicide prevention among the Inuits of Canada are justified based on their perceived usefulness and ease of use in this community (Nguyen et al., 2020). As established, these AI tools are easy to use and are useful in that they increase accessibility to quality and consistent mental health services and resources to Inuits of Canada who are at risk of suicide. After a thorough review of the selected papers, the following solutions came up as having a significant utility potential in improving Inuits' mental health for suicide prevention:

Predictive Analytics for Early Identification: AI-powered algorithms can analyze data from social media, electronic health records, and communities to identify individuals at risk based on language patterns, behavioral markers, and other indicators (Fonseka et al., 2019; Götzl et al., 2022). The AI tools will facilitate the collection and analysis of big data to identify unique community-wide patterns regarding the suicide problem in the community (Fonseka et al., 2019).



Culturally Informed AI Tools: AI tools for suicide prevention can be tailored to reflect Inuit cultural values, languages (e.g., Inuktitut), and specific community contexts, ensuring sensitivity and relevance (Thorn et al., 2020). Consequently, interactive digital tools, such as AI-driven mental health apps, can provide culturally appropriate coping strategies and resources for the Inuits of Canada, thus overcoming the limitation of inadequate culturally competent health support and resources (Kumar & Tjepkema, 2019).

Crisis Hotlines: AI systems like chatbots can assist crisis hotlines by detecting patterns of distress in real-time conversations and escalating high-risk cases to trained human responders (Thorn et al., 2020; Fonseka et al., 2019).

Wearable Technologies: Wearable AI tools such as armbands are handy devices equipped with AI that can track biomarkers associated with stress and mental health, alerting caregivers or health workers when intervention is needed (Berrouguet et al., 2019).

Storytelling: Considering that this is an integral part of Inuit culture, AI-based storytelling platforms such as through social media could facilitate the sharing of positive stories of hope and recovery and could help preserve cultural narratives, fostering identity and resilience among Inuit youth (Thorn et al., 2020).

AI translation Tools: These technologies can bridge language gaps between Inuit individuals and non-Inuit healthcare providers by improving communication (translation between languages) and healthcare quality (Dankwa-Mullan et al., 2019).

Telehealth Integration: Telehealth introduces technology-supported virtual health platforms that are aimed at increasing accessibility to healthcare (Rintyarna et al., 2023). Therefore, in telehealth integration, the researcher acknowledges that AI can enhance telehealth services by enabling remote monitoring of mental health symptoms within isolated communities, thus eliminating barriers to access. In Nunavut, and particularly among the Inuits of Canada, the research findings have established that interaction of factors such as remoteness and isolation are major barriers to accessing quality mental healthcare and resources, challenges that have been noted to contribute to higher suicide risk (Ferrazzi & Krupa, 2019). Therefore, the adoption of AI technologies to promote telehealth in the Nunavut community has the potential to increase access to critical mental health support and resources that are fundamental for suicide prevention (Rintyarna et al., 2023).

In making sense of this research and results, the findings have affirmed the potential of AI technologies to monitor individuals' behaviors in real-time, collect data, and identify and report unexpected patterns pointing to the likelihood of suicide risk(s). This will facilitate a timely response to suicide risks (Berrouguet et al., 2019). This research recommends that the AI tools for suicide prevention, as identified above, such as wearable technologies, social media, predictive analytics, big data and telehealth, should all be integrated into Nunavut's clinical practice. This is particularly important since each of these AI tools has unique features essential for timely suicide prevention. In the end, when combined, these technological tools will enhance access to mental health resources amongst the Inuits of Canada for suicide prevention.

However, the findings further emphasized that as these AI tools for suicide prevention are designed and implemented within the Nunavut community, ethical risks should be proactively identified and minimized, stakeholders actively involved, and the algorithms consistently trained to increase accuracy. For instance, PHI should not be shared, and the collected data



should not be used for fraud or profit-seeking motives but for the intended purpose of improving mental health and suicide prevention in the Nunavut community (Fonseka et al., 2019; Götzl et al., 2022). This will increase the targeted users' trust and confidence in the AI tools for their perceived usefulness in suicide prevention. Additionally, regular user education and training on the use of AI tools for suicide technologies will increase acceptance, eventually helping prevent suicide amongst the Inuits (Rintyarna et al., 2023). Actively involving key stakeholders in the Nunavut community and others outside the territory will ensure that as AI tools are designed and implemented in this remote community to prevent suicides, the interventions are culturally competent (Kumar & Tjepkema, 2019). Such solutions will be effective in suicide prevention as they will target underlying issues contributing to high suicide rates among the Inuits of Canada. Lastly, stakeholder involvement and regular updating of the AI models will ensure that the AI tools for suicide prevention continuously evolve to align with the needs and expectations of this community (Fonseka et al., 2019; Götzl et al., 2022).

IMPLICATION TO RESEARCH AND PRACTICE

The researcher believes that the insights generated in this article have multiple implications for research and practice regarding the suicide problem and the mental health issues amongst the Inuits of Canada.

Implications to Research

Policy Integration: The article has research implications in that the findings could intrigue further research on how AI technologies for suicide prevention could be integrated with existing healthcare policies targeting the Inuits of Canada.

Longitudinal Research: Although this research has identified AI as a tool for suicide prevention, the long-term impact of these technologies is not well-understood in the context of the Inuits of Canada. As a result, longitudinal research could be ideal for identifying these trends in the long-term for informed decisions regarding the impact of AI tools on suicide prevention.

Ethical Issues: The findings point to an increased need to research ethical challenges related to the adoption of AI tools in Nunavut for suicide prevention.

Future Research: The findings in this article have research implications, considering that they could inform future research aimed at understanding the value technologies such as AI have in addressing mental health and suicide prevention. This is particularly important since the technological landscape is constantly changing, and stakeholders are expected to adjust accordingly.



IMPLICATIONS TO PRACTICE

Accessibility: Increased adoption of AI tools will increase the accessibility of quality and consistent mental health services and resources, including in neglected remote areas.

Early Interventions: AI tools can monitor and facilitate early detection of mental health issues confronting the Inuit people for timely solutions that will address these issues and reduce suicide rates. In other words, the findings facilitate improved suicide risk prediction for timely and effective preventative measures.

Enhanced Collaboration: The adoption of AI as a tool to prevent the high suicide rates among the Inuits will require that the stakeholders within the Nunavut community collaborate with others outside the territory, such as the Canadian government and stakeholders in the healthcare sector. Such collaboration is vital for resource mobilization to facilitate the implementation of the technologies and to address underlying challenges.

Support Systems: AI technologies aimed at providing platforms for continuous support and resources to the Inuit people to overcome mental health challenges could foster a supportive community and culture to deal with the underlying problems.

CONCLUSION

This article has revealed that AI has the potential to be a transformative tool in suicide prevention among Inuit communities in Canada. AI technologies such as predictive analytics, social media, chatbots, telehealth, mobile applications, and wearable technologies stand out as unique solutions to proactively identify risk factors that worsen mental health problems among Inuits and the community's high suicide risk. However, the implementation of these tools should be in conjunction with culturally sensitive practices, community empowerment, and systemic improvements to address the broader determinants of mental health. Notably, collaborative efforts involving Inuit leadership, mental health professionals, and technology developers are critical for sustainable and effective solutions.

FUTURE RESEARCH

While the article has generated valuable insights into how AI tools could be exploited to prevent suicide amongst the Inuits of Canada, some areas could inform future research. For instance, since this research is a systematic review, future research could be qualitative research, such as through focus groups or semi-structured interviews for comprehensive understanding through first-hand and up-to-date data on the usage of AI tools to promote mental health and prevent suicide. Also, longitudinal research could help in understanding the impact of AI tools in suicide prevention among the Inuits of Canada. Finally, considering the limitations that disadvantage remote communities such as the Inuits of Canada from accessing quality and adequate mental support and resources, future research should further explore ways to address the underlying barriers to equitable access.



REFERENCES

- Affleck, W., Chachamovich, E., Chawky, N., Beauchamp, G., Turecki, G., & Séguin, M. (2020). Suicide amongst the Inuit of Nunavut: an exploration of life trajectories. *International journal of environmental research and public health*, 17(6), 1812. <https://doi.org/10.3390/ijerph17061812>
- Aggarwal, K., Agarwal, A., Jaiswal, N., Dahiya, N., Ahuja, A., Mahajan, S., ... & Gupta, V. (2020). Ocular surface manifestations of coronavirus disease 2019 (COVID-19): a systematic review and meta-analysis. *PloS one*, 15(11), e0241661. <https://doi.org/10.1371/journal.pone.0241661>
- Berrouiguet, S., Barrigón, M. L., Castroman, J. L., Courtet, P., Artés-Rodríguez, A., & Baca-García, E. (2019). Combining mobile-health (mHealth) and artificial intelligence (AI) methods to avoid suicide attempts: the Smartercrises study protocol. *BMC psychiatry*, 19, 1-9. <https://doi.org/10.1186/s12888-019-2260-y>
- Bettany-Saltikov, J., & McSherry, R. (2024). How to do a Systematic Literature Review in Nursing: A Step-by-Step Guide, 3/e. McGraw Hill Education.
- Bryant, L., Garnham, B., Tedmanson, D., & Diamandi, S. (2018). Tele-social work and mental health in rural and remote communities in Australia. *International Social Work*, 61(1), 143-155. <https://doi.org/10.1177/0020872815606794>
- Chachamovich, E., Haggarty, J., Cargo, M., Hicks, J., Kirmayer, L. J., & Turecki, G. (2013). A psychological autopsy study of suicide among Inuit in Nunavut: methodological and ethical considerations, feasibility and acceptability. *International Journal of Circumpolar Health*, 72(1). <https://doi.org/10.3402/ijch.v72i0.20078>
- Chachamovich, E., Kirmayer, L. J., Haggarty, J. M., Cargo, M., McCormick, R., & Turecki, G. (2015). Suicide among Inuit: results from a large, epidemiologically representative follow-back study in Nunavut. *The Canadian Journal of Psychiatry*, 60(6), 268-275. <https://doi.org/10.1177/070674371506000605>
- Cherba, M., Akearok, G. K. H., & MacDonald, W. A. (2019). Addressing provider turnover to improve health outcomes in Nunavut. *CMAJ*, 191(13), E361-E364. <https://doi.org/10.1503/cmaj.180908>
- Dankwa-Mullan, I., Rivo, M., Sepulveda, M., Park, Y., Snowdon, J., & Rhee, K. (2019). Transforming diabetes care through artificial intelligence: the future is here. *Population health management*, 22(3), 229-242. <https://www.liebertpub.com/doi/pdf/10.1089/pop.2018.0129>
- Duyilemi, F. (2024). Effects of Intergenerational Trauma on African-Americans and Interventions. *Africa Journal of Health, Nursing and Midwifery*, 7(1), 28-23. <https://www.doi.org/10.52589/AJHNM-HEQKC67N>
- Ferrazzi, P., & Krupa, T. (2018). Remoteness and its impact on the potential for mental health initiatives in criminal courts in Nunavut, Canada. *International Journal of Circumpolar Health*, 77(1), 1541700. <https://doi.org/10.1080/22423982.2018.1541700>
- Fonseka, T. M., Bhat, V., & Kennedy, S. H. (2019). The utility of artificial intelligence in suicide risk prediction and the management of suicidal behaviors. *Australian & New Zealand Journal of Psychiatry*, 53(10), 954-964. <https://doi.org/10.1177/0004867419864428>
- Fuller, J., Edwards, J., Martinez, L., Edwards, B., & Reid, K. (2004). Collaboration and local networks for rural and remote primary mental healthcare in South Australia. *Health & social care in the community*, 12(1), 75-84. <https://doi.org/10.1111/j.1365-2524.2004.00470.x>



- Götzl, C., Hiller, S., Rauschenberg, C., Schick, A., Fechtelpeter, J., Fischer Abaigar, U., ... & Krumm, S. (2022). Artificial intelligence-informed mobile mental health apps for young people: a mixed-methods approach on users' and stakeholders' perspectives. *Child and Adolescent Psychiatry and Mental Health*, 16(1), 86. <https://doi.org/10.1186/s13034-022-00522-6>
- Hu, C., Zhao, D., Gong, F., Zhao, Y., Li, J., & Sun, Y. (2020). Risk factors for suicidal ideation among the older people living alone in rural region of China: A path analysis. *Medicine*, 99(29), e21330. <https://doi.org/10.1097/MD.000000000000213>
- Kamal, S. A., Shafiq, M., & Kakria, P. (2020). Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM). *Technology in Society*, 60, 101212. <https://doi.org/10.1016/j.techsoc.2019.101212>
- Konefal, S. (2021). Risk and protective factors for suicide among Inuit in Canada: A summary of statistics related to suicide and mental health. Ottawa, Ont.: Canadian Centre on Substance Use and Addiction. https://www.ccsa.ca/sites/default/files/2021-10/CCSA-Risk-Protective-Factors-Suicide-Mental-Health-among-Inuit-Report-2021-en_0.pdf
- Kwun, Y. J., & Han, Y. J. (n.d.). An Analysis of the Factors of Mistranslation in Statistical Machine Translation—Taking Prose Text Translation as Example. *Academic Journal of Humanities & Social Sciences*, 6(21), 6-12.
- Macdougall, G. (2019). Canada's Indigenous suicide crisis is worse than we thought. *National Observer*. <https://www.nationalobserver.com/2019/09/10/analysis/canadas-indigenous-suicide-crisis-worse-we-thought>
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal access in the information society*, 14, 81-95. <https://doi.org/10.1007/s10209-014-0348-1>
- Marikyan, D. & Papagiannidis, S. (2024) Technology Acceptance Model: A review. In S. Papagiannidis (Ed), TheoryHub Book. <https://open.ncl.ac.uk>
- Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, 18, 1-7. <https://doi.org/10.1186/s12874-018-0611-x>
- Nguyen, M., Fujioka, J., Wentlandt, K., Onabajo, N., Wong, I., Bhatia, R. S., ... & Stamenova, V. (2020). Using the technology acceptance model to explore health provider and administrator perceptions of the usefulness and ease of using technology in palliative care. *BMC palliative care*, 19, 1-9. <https://doi.org/10.1186/s12904-020-00644-8>
- Rabouam, C. (2023). Satellite dependency in Nunavut: a barrier to the territory's political realization. *2023 Arctic Yearbook, Arctic Indigenous people, Climate, Science, Knowledge and Governance*, (2023). https://arcticyearbook.com/images/yearbook/2023/Scholarly_Papers/11_Rabouam_AY2023.pdf
- Rahimi, B., Nadri, H., Afshar, H. L., & Timpka, T. (2018). A systematic review of the technology acceptance model in health informatics. *Applied clinical informatics*, 9(03), 604-634. <https://doi.org/10.1055/s-0038-1668091>
- Rintyarna, B. S., Sasmiyanto, I. O., Widiawati, I., & Purwoko, R. Y. (2023). Telehealth in remote areas: a new artificial intelligence-based model. *Int J Sci Soc*, 5(4), 243-254. <http://dx.doi.org/10.54783/ijssoc.v5i4.782>
- Scheerder, A., Van Deursen, A., & Van Dijk, J. (2017). Determinants of Internet skills, uses and outcomes. A systematic review of the second-and third-level digital divide. *Telematics and informatics*, 34(8), 1607-1624. <https://doi.org/10.1016/j.tele.2017.07.007>



- Shachak, A., Kuziemy, C., & Petersen, C. (2019). Beyond TAM and UTAUT: Future directions for HIT implementation research. *Journal of biomedical informatics*, 100, 103315. <https://doi.org/10.1016/j.jbi.2019.103315>
- Taylor, C. B., Fitzsimmons-Craft, E. E., & Graham, A. K. (2020). Digital technology can revolutionize mental health services delivery: The COVID-19 crisis as a catalyst for change. *International Journal of Eating Disorders*, 53(7), 1155-1157. <https://doi.org/10.1002/eat.23300>
- Teibowei, M. T., & Agbai, E. Awareness and Utilization of Artificial Intelligence-Based Systems in Biomedical Translation in Nigeria. *International Journal of Medical Evaluation and Physical Report*, 7(3), 72-81.
- Thorn, P., Hill, N. T., Lamblin, M., Teh, Z., Battersby-Coulter, R., Rice, S., ... & Robinson, J. (2020). Developing a suicide prevention social media campaign with young people (The# Chatsafe project): co-design approach. *JMIR mental health*, 7(5), e17520. <https://doi.org/10.2196/17520>
- Upfold, C., Jentz, C., Heilmann, P., Nathanielsen, N., Chaimowitz, G., & Sørensen, L. U. (2023). Forensic psychiatry patients, services, and legislation in Nunavut and Greenland. *International journal of law and psychiatry*, 91, 101921. <https://doi.org/10.1016/j.ijlp.2023.101921>