Bridging the Gap: Understanding and Addressing Barriers to Diabetes Education and Foot Care among Indigenous and Vulnerable Populations for Enhanced Health Equity in New Zealand

For Travel In 2023

Report Finalised - January 2024

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Acknowledgements

I extend my heartfelt gratitude to the WCMT team for granting me this invaluable fellowship opportunity. I am deeply thankful to my friends and family whose unwavering support has been pivotal throughout this journey. Special appreciation is owed to the dedicated clinics, health professionals, and team members across Hawaii, Alaska, and Canada whose collaboration significantly contributed to the development of my project (see Appendix A).

Participating in this fellowship has truly been a once-in-a-lifetime experience, and I eagerly anticipate immersing myself in the works of my fellow 2023 recipients. Moreover, I look forward to engaging with future grant recipients as we collectively contribute to advancing the field. Thank you once again for this enriching experience.

Introduction

Overall, this experience holds tremendous value both personally and professionally. Throughout this fellowship, I honed interpersonal, communication, organizational, and planning skills, which were crucial for successful interactions at each location. Professionally, this project underscores the importance of providing quality, culturally sensitive healthcare by delving deeper than surface-level considerations. It involves accommodating appointments outside typical work hours, offering information on transportation and clinic access, and communicating information concisely, ideally in the patient's preferred language for optimal understanding.

Initially conceived for the Orthotics and Prosthetics profession, this project has revealed insights applicable across healthcare, particularly in allied health and health education sectors. While our profession boasts up-to-date, evidence-based advice and treatment plans for diabetes management, the missing link lies in is how we get this information to the right populations in a culturally appropriate manner.

My project

This project aimed to better understand the specific barriers and facilitators to diabetes education and diabetic foot care for indigenous and vulnerable groups across different countries and cultures. This project specifically focuses on Type 2 diabetes, associated with lifestyle factors, as opposed to Type 1 diabetes, which is autoimmune-related.

My research involved engaging individuals at various levels, such as patients, clinicians, administrators, program directors, and associated staff in Hawaii, Alaska and Canada. Discussions included ideas adaptable to a New Zealand context, addressing health disparities in diabetes complications.

Key Questions of the Fellowship

1. In each population group who is most at risk of developing diabetes and diabetes related complications?
2. What programmes are in place for individuals to access diabetes education and diabetes foot care?
3. What are some of the barriers and facilitators in place to access this care?

In addition there was room for tangents of shorter, related inquiries for topics which piqued my interest.

Observations

From Hawaii to Canada and Alaska, my journey revealed the realities of each regions most vulnerable groups.

On Oahu in Hawaii, the prevalence of unsheltered homelessness and the concerning mental and physical health conditions among individuals were immediately apparent, and became a focal point for my exploration in this region. While moving around the city, I encountered individuals of all ages and ethnicities with open wounds and signs of vascular compromise in their lower limbs. Despite these challenges, a strong sense of community among them became evident, especially during conversations with the Waikiki Health team. Additionally, I was able to observe the role of 'Street Medics' in the community. They were offering education on available services and providing minor first aid on the streets, addressing issues like open wounds and ulcers.

In Anchorage, Alaska, I observed not only a high rate of homelessness but also a notable prevalence of public drug consumption. The city's unique architecture, designed for harsh winter conditions, featured wider roads, increased accessibility, and a reliable public transport system, which catered to low-income and disabled community members. This allows increased easier movement around the city reducing a barrier for individuals to attend their places of daily activity such as the supermarket, library and local stores and clinics.

In the Greater Toronto Area (GTA) and Ottawa, Canada, the GTA's vast land mass and population, mean most events and services are centred in Toronto city, requiring a broad reach to be accessible to the entire GTA population. In contrast, Ottawa, as the capital city of

Canada, felt surprisingly small. Ottawa displayed severe issues of homelessness, visible drug use, and individuals struggling with active addiction, housing, and food insecurity.

My observations give credence to research that has shown that overall, individuals with lower socioeconomic status, including housing and food insecurity, face a higher risk of developing diabetes. In Hawaii and Alaska, indigenous people are also more susceptible.

Diabetes Distress and its implications

Whilst in Hawaii, I was introduced to the concept of "Diabetes Distress" and its profound implications for individuals living with diabetes. The term encapsulates the emotional toll of living with diabetes, encompassing feelings of frustration, defeat, and being overwhelmed by the demands of the disease. This emotional distress can escalate to more severe mental health conditions, such as depression.

What makes the situation even more complex is that, for many individuals dealing with diabetes, it is not the sole health challenge they confront. The ongoing COVID-19 pandemic has introduced additional stressors, including uncertainties related to employment and housing. This dual burden places a considerable strain on individuals, compounding the emotional challenges associated with diabetes and meaning, the self-management of diabetes often takes a backseat.

A traditional approach to footwear

Whilst in Alaska, I learned about the Indigenous approach to footwear, this sparked my interest as appropriate footwear is not only critical for day to day life, but also in preventing some of the complications of diabetes.

Muluks or Kanuks have been worn by indigenous communities for centuries. These are made of materials like sealskin, caribou skin, or other animal hides. They are designed to provide warmth and protection against the harsh cold climates of the Arctic regions. The boots are often decorated with traditional patterns and may have multiple layers for insulation.

These traditional forms of footwear continue to be worn today, not only as a cultural expression but also for their practicality in extreme weather conditions. The design and construction of Mukluks have evolved over time, incorporating modern materials and techniques while maintaining the essence of traditional craftsmanship. Usually, 2-5 layers of footwear are worn including, but not limited to, a wool liner and sturdy sole. The sole layer is removed for indoor use. The flexible nature of this footwear allows good circulation to the feet and toes as well as ability to stablise and balance with a splayed forefoot on slippery terrain like ice.

Isolation and resource constraints

Barriers to receiving diabetes education included complex health insurance systems in Hawaii, geographical challenges in Alaska and practitioner knowledge of the available services in Canada. Facilitators to receiving quality education included offering sessions in the evenings, offering sessions in a participant's chosen language and using a blended virtual and physical approach.

The CHAP/CHAM program is the Alaskan health service solution to geography challenges, small village populations which are unable to support a physician or mid-level practitioner and the high cost of travel and transport among other challenges. The CHAP solution was designed to train local people who were familiar with village life and likely to

stay in the community and they have one of the hardest and most important health care jobs in Alaska. They are heavily involved in community outreach and education programs as well as the prevention and early detection of diabetes and the monitoring and management of the disease. The work of a CHAP is overseen at distance by a physician who may visit the community once or twice a year. They can utilize telehealth services along with members of the community to facilitate a higher level of care when required. The high level of cultural competence allows CHAPs to provide diabetes care which respects and aligns with the traditions and values of their village. CHAPs are the first level medical providers in over 170 rural communities. providers in over 170 rural Alaska communities. The Advanced Diabetes Health Aide Course is specific to the role of the Alaska community health aide and has been shown to improve care for people in rural Alaska communities with diabetes and people at high risk of developing diabetes

What I learnt

New Zealand has good evidence based advice and treatment plans to treat and educate individuals at risk or with diabetes. The missing link is how we get this information to improve access to diabetes education and diabetes foot care in New Zealand.

Using a community and family-based approaches to building a strong support system. This involves training individuals already integrated into the community, such as cultural groups, churches, sports clubs, and retirement homes, could facilitate natural conversations about diabetes prevention and available resources. This approach may have a greater impact on close-knit communities compared to health information posters or advertisements. Specifically, leveraging word-of-mouth and storytelling, which are common in many cultures like Māori and Pasifika. This could be a space the expertise of the Health Promotion Forum

of New Zealand (HPFNZ) could step into to collaborate with prominent members of the community to achieve increased awareness.

Whilst overseas I learned about the American Diabetes Associations standardised training for diabetes educators. Using a standardised program here in New Zealand which allows for flexibility based on a regions demographic and need could result in improved diabetes education. The Aotearoa College of Diabetes Nurses (ACDN), having the most contact with diabetes patients in New Zealand, could benefit from local group discussions addressing region-specific challenges and implementing tailored strategies. This approach ensures equal access to current information and reduces the risk of conflicting recommendations such as encouraging public transport in a region without. Additionally, the curriculum's flexibility allows for targeted recommendations, such as exercise advice for the elderly or footwear guidance for those in certain industries.

Using a holistic approach to patient profiles, considering socio-economic factors and mental health alongside clinical aspects. This includes Adopting this empathetic understanding across all levels of care will lead to more effective and patient-centred diabetes management, particularly for those experiencing diabetes distress.

Improving outcomes through provider understanding and education. Patient outcomes could be enhanced by having an primary health care providers having an in-depth understanding of the barriers and facilitators to patients accessing care for their particular population. For example, provide clear information on clinic locations and public transport options and ensure each patient has an opportunity to be referred to a diabetes education program.

Sharing my experience

I developed a visual aid to offer a reader-friendly snapshot of key insights (see Appendix B Infographic) to use in sharing my experience. I plan to continue sharing my information and perspectives on the topic through conversations with colleagues and communities, use of social media, and, when the opportunity arises, presentations or panel participation.

I have shared my Fellowship experience in discussions with

- Diabetes New Zealand
- The New Zealand Orthotics and Prosthetics association
- Aotearoa College of Diabetes Nurses (ACDN)
- National Hauora Coalition
- Health Promotion Forum of New Zealand (HPFNZ)

I have committed to sharing the infographic and report along with a small write up in an upcoming newsletter circulated to all registered members of the New Zealand Orthotics and Prosthetics association. Towards the end of 2024 the association will host an annual conference, I plan to submit a presentation for consideration once the call for abstracts opens.

The HPFNZ understands the Pacific world view identifying more with the group and community. This means for effective health promotion Pacific peoples and their communities need to be empowered to take care of their holistic wellbeing. This differs from Maori health promotion which primarily focuses on strengthening the entire whanau unit and their connection to their culture. I will continue to engage with how these health models can be integrated into effective diabetes education.

Recommendations

I have compiled some recommendations to improve patient engagement with diabetes education and care in New Zealand

I suggest that everyone involved in care from receptionists to emergency physicians have an in-depth understanding of the barriers and facilitators to patients accessing care. This approach would be most effective if members of the leadership teams work together with their team to brainstorm, discuss and implement strategies that will help their particular population. For example, receptionists could provide clear information on clinic locations and public transport options while general practitioners could ensure each patient has an opportunity to be referred to a diabetes education program.

From my project, I've learned the importance of emphasizing community and family-based approaches to building a strong support system. I propose that training individuals already integrated into the community, such as cultural groups, churches, sports clubs, and retirement homes, could facilitate natural conversations about diabetes prevention and available resources. This approach may have a greater impact on close-knit communities compared to health information posters or advertisements. Specifically, leveraging word-of-mouth and storytelling, which are common in many cultures like Māori and Pasifika. This could be a space the expertise of the HPFNZ could step into to collaborate with prominent members of the community to achieve increased awareness.

Furthermore, I recommend implementing a standardized curriculum for diabetes education, with flexibility based on local demographics. The ACDNs, having the most contact with diabetes patients in New Zealand, could benefit from local group discussions addressing region-specific challenges and implementing tailored strategies. This approach

ensures equal access to current information and reduces the risk of conflicting recommendations such as encouraging public transport in a region without. Additionally, the curriculum's flexibility allows for targeted recommendations, such as exercise advice for the elderly or footwear guidance for those in certain industries.

Finally, I advocate for a holistic approach to patient profiles, considering socio-economic factors and mental health alongside clinical aspects. Adopting this empathetic understanding across all levels of care will lead to more effective and patient-centred diabetes management, particularly for those experiencing diabetes distress.

Appendix A

Location	Facility	Interacted with
Hawaii	The Queens Medical Centre	Administration, Certified Diabetes Educator
	inControl Hawaii	Kevin Kam
	‘Ekahi Health	Administration, Diabetes Educator, Social Worker, Clinical Staff
	Waikiki Health	Administrator, Malia Cummings Social Worker, Public Relations Staff
Alaska	Alaska Native Tribal health Consortium	Administration, Diabetes Educator, Social Worker
	Anchorage Foot and Ankle Clinic	Rebecca Huberty
	Alchemy Prosthetics and Orthotics	Administration, Sean Saunders
Canada	West Toronto Diabetes Education Program	Administration, Diabetes Educator, Nurse
	Centretown Community Health Center	Administration, Nurse, David Walker
	Indigenous Diabetes Health Circle	Administration, Lindsey Cosh, Diabetes Nurse

Appendix B


BARRIERS AND FACILITATORS TO
Diabetes Education
Understanding and Addressing Barriers to Diabetes Education and Foot Care among Indigenous and Vulnerable Populations in Hawaii, Alaska and Canada for Enhanced Health Equity in New Zealand
The project
This Fellowship was generously part-funded by the Winston Churchill Memorial Trust (WCMT). The WCMT helps individuals travel overseas to learn from others and study topics that will advance their occupation, trade, industry, profession or community and benefit New Zealand. Throughout this project, the term 'Diabetes' relates to type 2 Diabtetes
The fellowship aimed to answer three key questions:
In each population group who is most at risk of developing diabetes and diabetes related complications.
What programmes are in place for individuals to access diabetes education and diabetes foot care
What are some of the barriers and facilitators in place to access this care
Incidence of diabetes
Diabetes is a chronic disease that occurs when the body's ability to produce or respond to the hormone insulin is impaired. This results in abnormal metabolism of carbohydrates and leads to elevated levels of glucose in the blood, long term, this is associated with damage to tissues and failure of various organs. Diabetes-related foot complications including diabetic foot ulcers are a leading cause of global hospitalisation, amputation, and health care costs both internationally, and in New Zealand
Hawaii
48% of the state is affected by prediabetes or diabetes.
Higher risk of diabetes is associated with low household income, obesity and lack of physical activity as well as those of Non-Hawaiian/Other Pacific Islander (NOPHI) and asian descent
There are many community-based education programmes available both in person and virtually however most require referral and/or health insurance coverage.
Alaska
42% of the state is affected by prediabetes or diabetes.
The American Indian/American Native (AIAN) group exhibits the highest predicted diabetes rate , they are 2/3 more likely to have diabetes than the non-Hispanic white population.
In the city there are some 'formal' community education programmes delivered both virtually and in person. Less so in rural areas
Canada
30% of Canadians are affected by prediabetes or diabetes.
There is no significant differences in diabetes prevalence across sex or ethnic group. Increased risk was associated with lower physical activity, education levels, and income, along with low fruit and vegetable intake and high potato and soft drink consumption
Each province manages their own Diabetes Education programmes. These are often available both in person or virtually and in multiple languages
Facitators
Facilitators to participants being actively involved in diabetes education involved:
Classes offered in the patients preferred language
Hybrid delivery method with options for online or in person sessions
Flexible class timings to accommodate employment and childcare needs
Reliable public transport and funded transport aids such as taxis
25%
In the USA nearly one quarter of AIAN individuals report experiencing racism and discrimination in the healthcare system,
Barriers
Barriers to participants being actively involved in diabetes education involved:
Process and cost of seeking a referral
Patients understanding of the need for thorough understanding of their condition
Healthcare providers not being aware of the programmes availble to each patient
Trouble implementing techniques due to socioeconomic challenges
15%
In the USA, 15% of AIAN individuals report avoiding healthcare visits due to anticipated discrimination
Projects of interest
Diabetes Distress: The term Diabetes distress is used to describe the emotional response to living with diabetes, a person feels frustrated, defeated or overwhelmed by the disease and can lead to more serious mental health conditions such as depression
Traditional footwear in Alaska: Muluks or Kanuks have been worn by indigenous communities for centuries. They are designed to provide warmth and protection against the harsh cold climates of the Arctic regions. Usually 2-5 layers of footwear are worn including, but not limited to a wool liner and sturdy sole
CHAP/CHAM: Community Health Aid Program and Community Health Aid Manual is a system unique to the Alaskan health service designed as a solution to geography challenges, and small village populations who are unable to support a full time health provider
References and further information associated with this fellowship can be found in the attached document
Jessica Lennon - 2024