College Students and Local Community Use a Train-the-Trainer Approach to Provide Foot Care Clinics to Unhoused Individuals in the Niagara Region

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Abstract

Niagara College (NC) Canada piloted a foot care program to address the needs and improve healthcare access for people who are unhoused. Built into the curriculum, NC students from interdisciplinary healthcare programs used a train-the-trainer model to provide foot care assessments to shelter clients within the Niagara region. Students and supervising faculty hosted weekly foot care clinics at participating shelters. If moderate to severe foot concerns presented, the onsite foot care nurse provided treatment. Community resources and donations assisted the clients with socks, shoes, and nail care items. The program was evaluated using a pre- and post- assessment on the student's confidence in providing foot care assessments and their overall clinical experience. Since commencing this pilot project in 2020, 300 NC students have assessed the feet of over 200 clients across three community shelters in the Niagara region. The benefits of this initiative are far-reaching. Students gain experience performing foot assessments while working with this vulnerable population; an experience that goes beyond learning in a typical classroom. Post-experience, most students reported having more positive feelings and overall perspective towards unhoused people. Most clients utilizing this service across the three shelter locations have felt comfortable and confident to remove their socks and shoes and allowed our students to examine their foot health. This unique educational opportunity for NC healthcare students provides desperately needed access to foot care for unhoused individuals. In using a train-the-trainer model, this pilot project has been successful in providing student-led foot care assessments for unhoused people in the Niagara region.

1. Introduction

There is a significant need to address and improve healthcare access and implementation at shelters for individuals experiencing homelessness and struggling with foot problems. This paper presents a train-the-trainer solution to provide foot care access by Niagara College students to unhoused people in the Niagara region through a pilot project initiative funded by the Natural Sciences and Engineering Research Council (NSERC).

In 2023, approximately 1,231 people were experiencing homelessness in the Niagara region, compared to 1,099 people at the end of 2022 [1]. This demonstrates that the unhoused demographic in the Niagara region is growing at a rapid pace. Nearly 20% of Niagara Region's unhoused resides in transitional housing [2].

Unhoused people in Canada struggle to access adequate healthcare, generally, and foot care, specifically. This includes facing healthcare barriers such as not being able to find and secure a healthcare provider, with 32% of unhoused individuals having no healthcare provider at all [3], [4]. Various non-profit organizations offer strategies that attempt to address the needs of unhoused individuals, including access to services, food, shelter, and resources [5], with some providing healthcare. Despite resources, unhoused individuals face many barriers to equitable access for services, including their lack of housing, inability to work and afford care, and inability to afford the cost of living [6].

In addition to their struggle with healthcare generally, the unhoused population is more likely to have foot problems (e.g., infections, foot pain, functional limitations with walking and improper-fitting shoes) compared to housed individuals [7]. Some of the most common foot-related issues in the literature include corns and calluses, nail pathologies, infections, and injuries [7]. It is not surprising that unhoused individuals would also encounter a lack of access to foot care resources compounded with systemic barriers to healthcare overall [6].

After much review of the current literature, it is apparent that foot care health practitioners and medical assistance regarding foot care needs is a lacking resource for unhoused individuals turning to

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community healthcare centres, shelters, and drop-ins, for the purpose of addressing their foot care needs.

A train-the-trainer model could be a reasonable solution to provide foot care assessments and resources for foot health to the unhoused population in the Niagara region. The train-the-trainer (TTT) model is designed to disseminate the knowledge of an expert, master trainer, to less experienced and new trainers [8]. This allows for the new trainers to become equipped with the necessary skills, confidence, and knowledge to become the expert and future trainer. The TTT model has been used in previous healthcare and medical contexts with positive results [9], [10], [11], [12], [13], [14], [15]. Therefore, this pilot project's primary aim was to use a train-the-trainer model leveraging the scope of foot care expertise in providing a student-led foot care clinic to unhoused clients at shelters within the Niagara region. The project's secondary aim was to improve foot care screening access and implementation at shelters for the unhoused clients facing foot problems.

2. Methods

Niagara College (NC), in collaboration with local community facilities and shelters, used a train-the-train model to educate and provide awareness of foot care needs for unhoused and vulnerable individuals. In this model, NC Nursing faculty sourced expertise in foot care and co-created online foot care modules to train inter-professional healthcare students at the college on how to conduct a foot care screening assessment. Hired NC students through Nursing and Paramedic programs, titled Research Assistants (RAs), assisted in facilitating the student-led weekly foot care clinics with the NC staff clinical supervisor.

2.1. Student involvement

NC students from Paramedic, Nursing, and Social Service Worker programs were recruited and trained over this four-year initiative, depending on which semester it was offered. Paramedic and Nursing students in a one-time placement opportunity, would assist the hired students and clinical supervisor in facilitating the foot care assessment clinics. During one of the semesters over the course of the pandemic, Social Service Worker (SSW) placement students assisted in community efforts, such as sourcing required resources to amplify our reach with this initiative. Each semester, a different cohort and program were selected to participate in running the foot care assessment clinics at the various shelter locations. The Program Manager and Dean of Health and Community Services worked with course instructors to choose which program and class would be best suited to participate. This mostly fluctuated from term to term between Paramedic and Nursing programs, with a one-term involvement of the SSW students.

2.2. Student training

This initiative began during the Covid-19 pandemic and, therefore, student training was mostly online. This included an orientation with NC staff over Microsoft Teams and a variety of online training modules to understand foot care health, how to conduct a foot assessment, and social skills for working with the unhoused population. When onsite at the shelter, the RAs provided training to the placement students, allowing them to put their theoretical learnings from online into action and apply it clinically with the foot care clients. The placement students had hands-on practice performing foot care assessments with the clients and inputting their data. This allowed students to 'learn by doing' using the train-the-trainer model.

2.3. Clinic operation

Local shelters (n=3) across the Niagara region offered open spaces for the foot care assessment team to run the weekly clinic. NC clinical supervisor and hired RAs arrived at the shelter 15 minutes before clinic start to set up and prepare the space for clients. Running the foot care clinic encompassed a diverse range of tasks, such as preparing basic foot care necessity packages for clients, organization of the clinic area, and providing training to the NC placement students (see Figure 1).

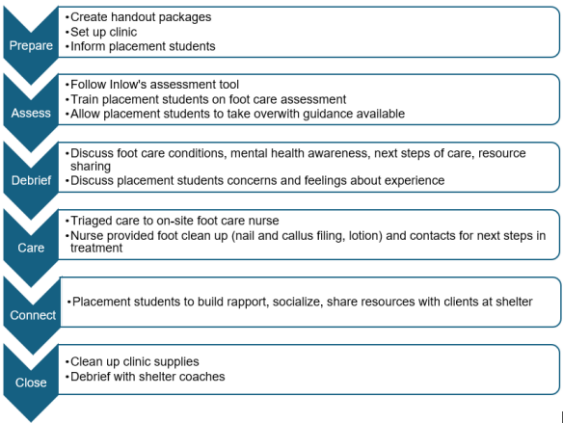

Figure 1. Foot care clinic operation task list

During clinic, students and the RAs conducted comprehensive foot care assessments, debriefed with the NC placement students, and engaged with shelter clients during periods of inactivity. Additional assessments with a contracted foot care nurse onsite in the shelter allowed for triage of care and resulted in positive outcomes for providing supplementary

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care and education. After a client was seen by students for assessments and before sending to foot care nurse, findings were shared with placement students about the outcomes, including the diagnosed condition and/or most appropriate health intervention recommended for that client. Clinic debrief led by the students and clinical supervisor at the end of a clinic shift allowed for students to learn about challenges confronted by unhoused people, while encouraging empathy and understanding. Post-clinic reports were shared with the shelter's facility manager and, if applicable, specific case workers who were assigned to those clients. These reports were shared in a communication binder at each location. An onsite Hepatitis Nurse would also help facilitate the post-clinic debrief with the students to conduct some health teachings and help distribute new nail clippers for the clients. Further reporting would occasionally occur with the Field Paramedic, who would take on clinical findings outside of the scope of the foot care clinic and required further assessment that wasn't conducive to the students and the clinic.

2.4. Data collection

Data was collected from clients at every clinic visit, from placement students at various time points throughout their semester, and from clinical supervisors and the foot care nurse at the end of the initiative. We attempted to conduct focus groups from participating placement students, however, were unsuccessful due to scheduling conflicts.

2.4.1. Data collection: foot care clients. Students would carry out the work under the supervision of one of the RAs. One student would be responsible for conducting the assessment, while another student would input the assessment data into the laptop. Meanwhile, the remaining students would accompany the other RAs to engage in social interactions with the clientele. This division of tasks ensures that all aspects of the assessment process are efficiently managed, while also providing opportunities for students to develop a range of skills, from technical data entry to interpersonal communication.
The foot care clinic followed the following procedures:

a. Students conducted assessments of the clients' feet to specifically determine the risk of diabetes. These assessments were performed under the supervision of the RA to ensure accuracy and proper procedure. While the primary focus was on identifying potential diabetic risks, students also provided education, and regularly encouraged clients to seek medical assistance for other health concerns that were observed during the assessments. This dual focus helped address immediate concerns and promote overall health awareness among the clients.

b. Students documented the assessment data into our database under the supervision of a RA, ensuring accuracy and consistency. They were responsible for properly labeling and organizing the files to maintain a well-structured record-keeping system. Additionally, these students supported the assessor by monitoring the assessment process and reminding them of any areas that might have been overlooked. This system ensured effective data collection, but also reinforced the learning and attention to detail required for proper assessments.

c. Interacting with clientele to improve participation in our project and develop interpersonal skills (under supervision) was another key responsibility for the students. Often, clients would not initially approach the students, but they were willing to participate with minimal encouragement. Engaging with the clients in this way often placed students outside of their comfort zones. This provided them with valuable experience for those pursuing careers as paramedics and nurses, as they might regularly interact with similar populations and need to effectively encourage participation and communicate health-related information.

d. As part of this program, Niagara College employed a Certified Foot Care Nurse, to provide basic foot care and education to the clients. Students would refer clients to this on-site specialist as needed. Given the often-poor conditions of footwear and the difficulty in maintaining proper hygiene levels among the clientele, this service was particularly well received. The foot care nurses' involvement not only addressed immediate foot care needs, but also contributed to overall health education and preventative care.

2.4.2. Data collection: placement students. For each cohort of students entering any given semester who would be providing the foot care assessment clinics, there were three data collection methods. This included a pre- and post- survey for students to complete, detailing their involvement with the foot care initiative, how prepared they felt for their role at the foot care clinic, and lastly, a journal questionnaire to gather more qualitative responses about their experiences with the foot care clinic.

The pre-survey was administered to students shortly after the online orientation and it was explained to students that they should complete this survey after all the training had been conducted, but

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before their first clinic day. The post-survey was administered to students after their first clinic day, along with the journal questionnaire. The pre- and post- surveys were expected to take approximately 5-10 minutes to complete, while the journal questionnaire could take upwards of 30-60 minutes to complete. The length of the journal questionnaire depended on the students' depth and breadth of responses to the questions they felt were applicable to their experiences at the foot care assessment clinic.

All three of these surveys were administered online and data was collected through NC's online learning platform, Blackboard, which was later switched to a D2L platform in the final semester. Switching to the D2L platform was an institutional decision and not controlled by the research team and this initiative.

2.4.3. Data collection: clinical supervisors and foot care nurse. At the end of the initiative, we collected statements from some of the participating clinical supervisors and the most recent participating foot care nurses. These statements included a more detailed explanation of daily clinical operations and their experiences of being a part of the foot care clinic. Statements were used and incorporated into the findings to ensure accuracy of this initiative's overall operation.

2.5. Data analysis

Our team conducted a content analysis of all the data. Data from the placement students was analyzed on a semester basis and used to inform clinical or operational changes for the next semester. Placement student data was also analyzed to conceptualize the success of the train-the-trainer model. Client foot care data was analyzed to understand types of foot care conditions and how care was referred post-clinic.

3. Results

The pilot initiative provided a student-led foot care assessment clinic for nine consecutive semesters over three years (Spring 2021 to Winter 2024) to unhoused clients in the Niagara region. The clinic followed a train-the-trainer model and leveraged the knowledge and support of students across three Niagara College programs, including Paramedic, Nursing and Social Service Worker (SSW). Note that the SSW students assisted for one semester during the pandemic when in-person placement opportunities were scarce. These students did not facilitate the clinic in person, but assisted with foot care health resource outreach across the Niagara region and were successful in sourcing the expertise of a pro-bono foot care nurse, donated socks and shoes, and brought the community together in the interest of foot care for the unhoused population. The Paramedic and Nursing programs physically provided foot care assessments at the community shelters by setting up weekly clinics for 14 weeks (about 3 months) during each semester. Over the initiative, students assessed the feet of over 250 unhoused clients across the Niagara region at one of the three participating shelter locations.

Findings in this pilot initiative are demonstrated by both quantitative and qualitative data. This includes clinic and client outcomes, perspectives on the success of the train-the-trainer model, how placement students felt about providing care to the unhoused population, and our shared overall responses to the foot care clinic (see Table 1).

Table 1. Foot care clinic data on college placement students, hired college student research assistants, and foot care clinic clients for each semester the clinic ran within the Niagara Region

Semester	Program(s)	Number of RAs	Number of Students	Number of Clients Seen
Spring 2021	Paramedic	3	~30	49
Fall 2021	Nursing	3	~30	31
Winter 2022	Paramedic	3	39	22
Spring 2022	Nursing	3	37	N/A
Fall 2022	Nursing	3	23	N/A
Winter 2023	N/A	3	~30	12
Spring 2023	Paramedic	3	56	63
Fall 2023	Nursing	3	6	37
Winter 2024	Paramedic	3	40	48
Total (approx.)	2	27	291	262

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3.1. Clinic and client outcomes

Clinic was offered weekly on Wednesday mornings for 14 weeks each semester from Spring 2021 until the end of the Winter 2024 semester. Foot care clinics were hosted at three community shelters in the Niagara region, sometimes with two shelters running simultaneously. Most of the time, only a single shelter clinic was in operation. Clients were triaged based on care, with oversight of the public health nurse or shelter physician, with severe cases being sent to local hospitals or urgent care centres close to the shelter location.

Students and clinical supervisors observed clients as they attended the clinics over the initiative. One of the notable observations was that there were numerous returning clients, either due to follow-up from previous visits or with new conditions altogether. The most common types of foot conditions that were addressed included trench foot, severe calluses, ulcers, waters, hammertoes, fungus infections, frostbite (in the winter semesters), and gout. One of the student RAs noted that they:

"remember having this client come to the clinic in a bad state. They were drenched in urine and had severe trench foot. While assessing her feet, she would fall in and out of consciousness. However, the client refused for us to call an ambulance. But we found clean clothes and shoes for the client, so they weren't sitting in their urine. I felt horrible to see someone like that, I wish I could help more."

– student RA, Winter 2024

Students often felt that they wished there was more they could do to help the clients when they were seen at the foot care clinic. This was especially apparent in the early days of the pilot initiative, when the triage of care was primarily outsourced out of the community shelter. Opportunities to provide in-shelter foot care by a certified healthcare practitioner were scarce. Although the SSW students sourced a foot care nurse to provide pro-bono care at the shelter, this resource was not sustainable. Other models of care included the idea of involving esthetician students or certifying our own nurses or clinical supervisors in providing registered foot care to the shelter clients. These care models did not come to fruition due to lack of interest and support. In the final year of the initiative, our foot care clinic was successful in recruiting and hiring a paid foot care nurse to provide the care in-shelter for post-assessed clients requiring non-emergent care. Through the initiative's funds, we were graciously able to provide this service to the Niagara region unhoused individuals utilizing the foot care clinic at the shelters we serviced. The foot care nurse conducted her own assessment and provided a foot clean-up, including nail trimming and filing, reducing height of thick fungal nails, removing in-grown toenails, removing debris under nails, reducing/filing callus, minor wound care and lotion application. The foot care nurse noted:

"There were many clients that had very long nails that appeared to have fungus and were starting to curl into their skin, and some had trench foot due to their feet being wet for long periods of time without access to dry socks and shoes. There was one case of trench foot that was rather severe where both feet were mostly white and blistered... I had not seen anything like that before and had to educate the client on keeping their feet dry as much as possible to prevent infection."

3.2. Train-the-trainer model: student research assistant perspective

Surveys received from some of the student RAs highlighted that they felt well prepared for their roles at the foot care assessment clinic upon receiving the orientation and participating in the foot care and unhoused modules and education provided prior to setting foot in the clinic. Furthermore, they stated that they felt confident in teaching the placement students how to do a foot care assessment utilizing the TTT model. Lastly, the student RAs said that they felt that the placement students were relatively enthusiastic and engaged in the foot care assessment clinic, but there were some concerns over those students who lacked general enthusiasm and felt that there were students who did not complete the training and education modules prior to their clinic-day placement.

3.3. Train-the-trainer model: placement student perspective

The Spring semester 2023 placement student data was analyzed to determine how many students felt well prepared for their role in the clinic providing foot care assessments to the unhoused clients. Results demonstrated that 87% felt well prepared, 8% did not feel prepared at first, but began to feel comfortable during their clinic shift, and 7% did not feel well prepared at all.

Placement students shared how their experiences at the clinic helped them to learn and grow in their field and to see things beyond the theoretical teachings of the classroom and textbook:

"Watching videos and reading something on paper is very two-dimensional, so seeing everything applied in-person was a new and valuable experience." - placement student, Winter 2022

These students also commented on how they learned something new, such as how to take a pedal pulse and that *"even with properly sized shoes, foot*

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problems can still occur when proper hygiene isn't done" (placement student, Winter 2022).

Other skills students mentioned they learned during their clinic placement experience were gaining communication and conflict-resolution skills, experience interacting with a vulnerable population such as the unhoused, increasing confidence, and enhancing their soft skills.

3.4. Train-the-trainer model: clinical supervisor perspective

Clinical supervisors felt that the TTT model was a practical way for the students to incorporate their knowledge and experience gained from within their program and apply it to real-world scenarios, such as this foot care clinic. One of the clinical supervisors, who had the pleasure of attending and supervising the clinic for multiple semesters stated:

"this model gave the students a sense of responsibility and autonomy in a practical setting. It was an opportunity for [the hired RA trainers] to give insight and suggestions during a [healthcare] assessment process, while allowing the [placement] students the chance to have a one-day hands-on experience with the vulnerable unhoused population."

Another clinical supervisor who also supervised the foot care clinic for multiple semesters and has a personal connection to the population and unhoused population, felt that:

"this project was an unbelievable opportunity for these college students, and society at large, to create a bridge between the unhoused population and the [public]."

Clinical supervisors who attended and shadowed the foot care clinics at participating shelters for unhoused clients were in agreeance that the train-the-trainer model was an excellent way for students to learn from one another and:

"allowed students to interact with the [vulnerable] population and to see the crisis at ground level in a safe, controlled environment."

In meetings and de-briefs with the clinical supervisors over the years of the foot care project, it was discussed that healthcare students don't often get to experience and interact with the unhoused population; vulnerable populations such as elderly and children, most definitely, but very rarely do healthcare students have an opportunity to:

"[look] these individuals in the eye... and [see] that many of these people are needlessly suffering" – clinical placement supervisor, 2022-2024.

3.5. Placement students' perceptions on unhoused population

Prior to placement, 75% of students in the Fall 2023 semester were concerned about the unhoused in terms of violence or aggressive behaviours, or their use of serious drugs (e.g., Fentanyl), while the remaining 25% of students had no concern at all. In other semesters, some of the students had concerns over aggressive or inappropriate behaviours, or thoughts about witnessing a drug overdose. After their placement experience, students commented on how their:

"perception of this population change[d] looking back pre-placement. I definitely gained more respect for their struggles day to day and the minimal things they had that are normal things to us daily, like proper shoes to walk in or clean socks. It felt really good to help their day just a little and be able to provide them with clean socks, nail clippers..." - placement student, Spring 2022

Another student stated that they:

"*learned that some of the people that came to the shelter were low income and not homeless."* Another student commented, *"I learned that a lot of the vulnerable population is afraid to seek help or speak to people because of the fear to[be] judged and treated differently than others, and most people in this population are in the position they are in because they experienced a hardship, grew up in the vulnerable population, or from trauma. Most want to get help and change but it's incredibly hard because they face many challenges such as being able [to] obtain employment, resources to help them get back on their feet, a way to find housing or affordable housing because of the lack of housing availability and significant wait lists."* - placement student, Fall 2022

These quotations from participating students demonstrate that they had an eye-opening experience during their time spent helping with the foot care clinic. They learned a lot from this vulnerable population, beyond providing a healthcare service. Additionally, the students realized that:

"you never know a person's situation and providing non-judgmental / unbiased care is very important" - placement student, Fall 2022.

The students felt it was a privilege to work with this vulnerable population and have the experience to gain communication, personal and social skills, and

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improve their confidence levels for providing care for others.

3.6. Overall response on foot care clinic

Those who ran the foot care clinic, *student RAs, placement students, clinical supervisors, and foot care nurse*, shared their positive experiences of working within the clinic. One of the hired student RAs commented how they:

"Had an amazing experience. It was an invaluable learning opportunity. I was able to further my knowledge of healthcare and communication skills for this certain demographic." - student research, Winter 2024

One the placement student noted that they:

"[felt] more prepared this time around for what to expect at the shelter and what was expected of me. I was able to recommend for my patient that they have somebody help them with their foot care by trimming their toenails and it was received very well. My client was eager to learn more education about her feet and overall health." - placement student who became a student RA, Fall 2021

The foot care nurse who assisted us with the clinic during the latter 16 months of the initiative stated that she felt *"overjoyed in being able to help those in need. I found the clinic to have been organized and well-structured and felt it was beneficial to the students and the shelter clients".* The clinical supervisors who assisted with and oversaw the foot care clinic commented on how this project deepened the student's skill set including:

"develop[ing] the necessary holistic skills needed to provide competent compassionate care" and *"the importance of empathy and compassion".*

Furthermore, the clinical supervisors did their:

"best to emphasize that this is not the fault of individuals, but a systemic problem. Every struggle isn't with mental health or addictions"

and that to get the help they require, there are various systemic hurdles to overcome. The same clinical supervisor reminded us that, *"the members of this population are not trying to give us a hard time, they are having a hard time, and they need help".*

4. Discussion

We aimed to pilot the use of a train-the-trainer model leveraging the scope of foot care expertise in providing a student-led foot care clinic to unhoused clients at shelters within the Niagara region. Our secondary aim was to improve foot care screening access and implementation at the participating shelters for unhoused clients facing foot problems. By using a mixed methods approach, we were able to successfully pilot the foot care clinic across several shelter locations in the Niagara region and provided foot care screening access and implementation for unhoused individuals.

Utilizing a train-the-trainer model for providing a foot care assessment clinic indeed was effective for this pilot initiative. This model has been successful in disseminating knowledge within other healthcare initiatives including an opioid prevention program for first-year doctors [9], for social workers to guide family-based interventions [14], [11], to improve end-of-life care [16], and a peer support program to manage diabetes [17]. Like our initiative involving healthcare college students, the train-the-trainer model has been used with a variety of healthcare personnel including doctors and nurses [16], [14]. Training resources in our study included online learning modules, PowerPoints, handouts and in-clinic hands-on learning experiences with the student RAs and supervisors, as was used in previous studies [16], [10]. Additionally, the use of self-perceived student evaluations to gather feedback on the training's effectiveness, student's level of preparedness, and overall learning strategies are also echoed in the literature and present in the current study [16], [10]. In the present study, students who commented on the pre/post surveys that they did not feel well prepared for the foot care clinic, may have benefited from having further training or access to resources. A former study used a two-day workshop of four, three-hour sessions to train social workers in developing family well-being interventions [14]. Perhaps our placement students would have benefited from additional and more extensive training to better prepare them for assessing the feet of the unhoused clients in our clinic shelters. Furthermore, in retrospect, we realize that the type of evaluation for the present study's train-the-trainer method may have inconclusive results and warrant further investigation. Our pre and post evaluations were 10 questions in length and very straightforward. However, previous literature describes how they implemented a 34-question assessment to evaluate family peer advocates' knowledge of childhood mental disorders, and a 25-question questionnaire for skill evaluation [15]. Further research in this area is needed to determine train-the-trainer effectiveness and to include a more robust evaluation.

Despite being able to provide a foot care assessment clinic, with some intermittent and immediate on-site care, unhoused clients accessing resources through the community shelters continue to struggle to seek medical help. Clients of our pilot initiative did not always successfully follow medical

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advice post foot care assessment, and indeed this is not surprising. Even when an unhoused client has access to health care, the ability to maintain and follow medical advice from a healthcare provider is slim [18]. Unhoused individuals state that they are unable to follow medical and healthcare advice due to expenses or lack of professionals who are willing to assist them even with simple healthcare needs, such as wound care [19]. The transportation barrier is an important factor [20], especially when unhoused individuals do not have access to a vehicle, are dealing with chronic foot conditions, and their most important mode of transportation is by foot. Further barriers for receiving health care include not having a family doctor, refusal of care in the absence of a health card, feelings of being judged poorly or disrespected by a provider, and having negative experiences [19], [18]. By bringing the foot care assessment clinic directly to community shelter clients and intermittently (when resources were available) offering on-site foot care, we attempted to remove some of the barriers faced by the unhoused. Further attention and innovation are required for removing barriers and providing adequate and non-judgmental access to health and foot care for unhoused individuals living in the Niagara region, specifically, and to unhoused individuals, generally.

4.1. Limitations

Although our pilot initiative had many successes, it does not come without its limitations. Firstly, we did not collect data from clients or shelter staff on their perspective of the foot care clinic. Gathering data from such a vulnerable population might have deterred clients from participating in the foot care clinic at all. Furthermore, receiving ethical approval for gathering data beyond observations as made in our initiative could have added an additional barrier for our research team. We decided not to gather data and ask for further involvement from the shelter staff as they already had enough commitments and were gracious enough to provide us with the space and time our foot care clinic; we did not want to impose any more tasks on them.

The Covid-19 pandemic was declared only a few short months after we heard that we received funding from the tri-agency council for this project. This led to various complications with restrictions and delays in getting our foot care clinic up and running with the level of uncertainty that the pandemic had caused. Our initiative was approximately one year behind schedule in getting started and although this caused an initial limitation for timelines and funding, we are grateful to the funder for providing us with an extension. The pandemic also limited our initiative by restricting the number of individuals allowed in the clinic at one time, and caused us to lose a few stakeholders, who were on the initial grant.

It was unfortunate that we did not add a foot care nurse in the initiative's early years. This was in part due to the pandemic, but also due to the lack of available providers. The foot care nurse who was hired was not involved in the program until the last 16 months, and we certainly could have used this service earlier. Clients assessed and serviced during the first year and a half of the initiative were asked to source their care outside of the clinic and recommended to see someone at a local clinic, walk-in, or hospital for emergency situations. This posed to be quite the challenge for the unhoused clients who faced many barriers for getting to an external clinic for foot care, including a lack of transportation and funding, and the daily struggle the faced prioritizing needs over finding food and shelter.

Our students and staff commented that, often, the location within the shelter where they were to set up the foot care clinic was much too small and didn't offer much room for an additional waiting area for clients. Although this is a limitation, there wasn't much we could do about inquiring about a larger space, as the shelter was already limited, and we unfortunately were a large group of students. We reduced the number of students present in the clinic by adding a second shelter location on the same day for students to spread across two locations. Having two clinics run simultaneously was not always an option and depended on shelter availability.

Often our clinical staff and hired student RAs commented on how they felt the placement students were not fully prepared or engaged on clinic day. Despite providing an orientation, training and educational modules, and a sign-off sheet to keep the placement students accountable for completion, students were still not fully engaged or absorbing the material. Whether or not they completed and understood the training material, students may still have lacked motivation or interest on clinic day. Unfortunately, this limitation is not preventable, and some students simply may not have been interested in this concept.

The last limitation of our foot care clinic was funding termination and constraints within the 3-year NSERC grant. Our team was unsuccessful in acquiring new funding before the grant's end date; however, we are always looking for more opportunities to expand this pilot initiative further. Conversations about clinic expansion are being considered across the province to benefit other colleges and communities and in effort to increase our population reach.

5. Conclusions and Next Steps

This pilot program was successful in following a train-the-trainer model for providing a student-led

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foot care assessment clinic for over three years at community shelters for unhoused clients in the Niagara region. Our team felt that we met the secondary aim by providing access to foot care health resources and awareness to unhoused individuals who were serviced through the community shelters we attended throughout the project. More funding and resources are needed to sustain a foot care assessment clinic and on-site foot care non-emergent treatments by a certified healthcare provider for the long term, as this pilot initiative was time- and funding-limited.

As for next steps, our team has been actively involved with disseminating the knowledge of the foot care assessment clinic pilot initiative at various conferences. Additionally, we have been sharing our model by conducting community outreach to colleges and shelters in various regions across the province to determine the need and interest for initiative expansion and collaboration:

"It seems like society in general struggles to connect with the [unhoused] due to a strong, but incorrect, belief that they are the source of their own problems, when in fact, the issues that affect them are systemic." – project participant

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7. Contributions

A.J. conceptualization, proposal, project lead, curation, data collection, data analysis, writing – original draft. S.E.M. student research assistant, in-clinic assistance, data collection, data analysis, writing – original draft. S.M. clinical supervisor, in-clinic assistance, data collection, writing – original draft and edits. C.N. clinical supervisor, in-clinic assistance, data collection, writing – original draft and edits. C.H. foot care nurse, in-clinic assistance, data collection, writing – original draft and edits. C.P. project oversight, writing – edits and final draft. C.T. original concept, proposal writing, initial project lead, writing – edits of final draft. M.N. proposal, research-administration lead, writing – edits of final draft.

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