Volunteer-student experiences and patient access to an inner-city dental clinic

by

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Abstract

Background: Low-income Canadians face multi-faceted physical and social barriers to dental care including but not limited to cost and stigma. Recognising the barriers to care, the Student-Health Initiative for the Needs of Edmonton (SHINE) dental clinic was created in 2004. SHINE is a student-volunteer operated clinic that aims to reduce inequalities in access to oral health care by offering free dental care to low-income individuals. However, as SHINE is a volunteer initiative independent from the undergraduate dentistry and dental hygiene programs at the University of Alberta, there has been limited investigation into the clinic and how it aligns with patient needs and contributes to student learning.

Purpose: The purpose of this dissertation was to explore the accessibility to SHINE for oral health care, and how students perceive volunteering at SHINE contributes to their learning.

Methods: The dissertation consists of three related papers: (1) interviews with health brokers were held to explore access to SHINE for the intended patient population to understand SHINE's alignment to the populations needs; (2) student focus groups explored how the volunteer experience at SHINE contributed to student learning; (3) patient surveys and field notes investigated patient satisfaction with access, patient oral health concerns, and alternative dental care options outside of SHINE.

Results: Interviews with health brokers revealed lack of awareness of the SHINE clinic. Further, English language translation support was an identified need, and there was concern for clients who fear discrimination in health care settings. From the student focused groups, data showed that students gained both clinical and cultural competence by volunteering at SHINE. Three

themes were derived from the data which captured how SHINE benefitted student learning: learning environment, learning enhancements, and learning from patients. Patient surveys revealed that patients primarily present to SHINE for pain (52%) or broken teeth. However, desire for preventative care was indicated by 25.2% seeking dental hygiene services. Patients were generally satisfied with SHINE although the least satisfaction was seen in time spent waiting to attain care and patient ability to attain dental care when needed. Dissatisfaction was correlated with attending SHINE without receiving treatment. Field notes revealed physical accessibility barriers not captured within the survey. If SHINE was not an option for receiving dental care, 32% would seek care through an emergency department or physician and 27% would not attain care at all.

Conclusion: Health brokers identified preliminary barriers to dental care at SHINE. However, further investigation was required to understand SHINE's accessibility. Through patient surveys and field notes, remaining barriers were identified to be wait times and capacity for SHINE to provide all dental services required. Although patients were generally satisfied with access to SHINE, suggestions were made to alleviate barriers. Access to care at SHINE may reduce the utilization of emergency departments. Students' experiences volunteering with SHINE had beneficial learning outcomes and brought to light three considerations for undergraduate dentistry and dental hygiene education; need for further cultural competence education, student desire for "real-life" clinical experiences, and a reduction in evaluations once clinical competency was achieved.

Preface

Chapter 2 of this thesis has been published as: Kallal M.G., Compton S.M., Brodie A.R., Moran B.L., Yoon M.N.. Exploring access in a volunteer free-service dental clinic. *Can J Dent Hyg*. 2021;55(2):120-23. M.G. Kallal was responsible for the data analysis as well as the manuscript composition. A.R. Brodie was involved with concept formation. B.L. Moran collected the data. M.N. Yoon and S.M. Compton were the supervisory authors and were involved with concept formation and manuscript composition. All authors contributed to manuscript edits.

The remainder of the thesis project are original works by M.G. Kallal, whereby the supervisory authors M.N. Yoon and S. M. Compton helped with concept design and manuscript edits. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name *"Understanding the patient and volunteer student experience in an inner-city dental clinic",* Pro00101981, October 2020 – September 2021.

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Glossary of Terms

- **SHINE:** Student Health Initiative for the Needs of Edmonton. For the purpose of this dissertation all references to "SHINE" refer specifically to the SHINE dental clinic.

- **Low-Income**: A person or household in Canada is considered to be of low-income if their income is under 50% of the national median.

- **Health Broker:** individuals who work or volunteer at community outreach centres that link marginalized populations to health services, producing beneficial health outcomes.

- **Marginalized:** individuals or groups of people experiencing inequalities in accessing resources and power as well as those who are socially excluded.

- **Access:** the measure of fit between a service and the population's needs.

Chapter 1 – Introduction and Thesis Overview

Introduction

Oral health is a critical and often overlooked aspect of overall wellbeing. Poor oral health contributes to pain and infection which impede speech, mastication, and nutrition (Rousseau et al., 2014; Jepsen et al., 2015). Further, bacteria from oral infections increase inflammatory mediators correlated to systemic illness (Jepsen et al., 2015).

In addition to systemic effects, the condition of the dentition has an impact on mental well-being. A smile is a central focal point of the face where the appearance of the dentition and odour of the oral cavity have a profound impact on one's ability to engage with others and the environment around them (Rousseau et al., 2014). Individuals with poor oral health are more likely to avoid communicating, smiling, and laughing, which can impede social interactions, create stigma and cause social isolation (Kisely, 2016; Cooke Macgregor, 1990).

While oral health is an essential aspect of overall health and wellbeing, it is not included in Canadian universal health care. Due to the high cost of dental care in Canada, in 2018, nearly a quarter of Canadians avoided going to a dentist (Statistics Canada, 2019). Income and dental insurance are the two most significant predictors of a person seeking dental care (Statistics Canada, 2019; Dehmoobadsharifabadi et al., 2016). Individuals classified as low-income face the most structural and social barriers to care, including affordability and stigma, and are among the most vulnerable in terms of poor oral health (Moeller & Quiñonez, 2020; Dehmoobadsharifabadi et al., 2016; CDA, 2017; Dunsch et al., 2018; Wallace et al., 2015). Persons without dental

insurance, constituting 50% of low-income Canadians, were three times more likely than those with insurance to avoid seeing a dental professional due to cost barriers alone (Figueiredo et al., 2017; Rousseau et al., 2014). When unable to attain dental care through dental professionals due to cost, many seek dental care through an emergency department (VanMalsen et al., 2019). Emergency departments are ill-equipped to manage dental concerns, often relying on pharmaceuticals for pain relief and infection control while failing to address the underlying dental concern (Figueiredo et al., 2017). As a result, repeat emergency department visits for non-trauma related oral health concerns in marginalized populations are frequent, ranging from 20% - 46% (VanMalsen et al., 2019).

Not-for-profit community dental clinics address inequities to care by providing affordable oral health care that extends beyond pain relief (Wallace et al., 2013). Community dental clinics are most effective when they operate within the specific sociocultural context of the community they aim to serve (Wallace et al., 2013). Therefore, it is important to consider aspects of access beyond affordability, such as location, and accommodation.

Recognizing the significant gaps in access to care among marginalized population groups in Edmonton, the Student Health Initiative for the Needs of Edmonton Dental Clinic (SHINE) was established in 2004. SHINE is unique in that it provides dental and dental hygiene services free-of-charge and is run by volunteer dental and dental hygiene students from the School of Dentistry, Faculty of Medicine and Dentistry at the University of Alberta. The clinic's main objective is to reduce inequalities in dental health by equalizing utilization of oral health services among low-income groups that face significant barriers to accessing care, such as homelessness, poverty, addictions, and poor mental health (SHINE Dentistry, 2020).

Student engagement in SHINE is akin to service-learning. Students operate SHINE to address a community identified need; access to dental care for the inner-city low-income, creating a reciprocal benefit for students and patients. Patients receive dental care free of charge, and students receive clinical exposure and exposure to the community population, which furthers their dental education (Yoder, 2006). However, SHINE is not a formal learning environment and not service-learning, which by definition requires a structured reflection component for students (Yoder, 2006; Yorio & Ye, 2012; Salam et al., 2019). As an independent entity from the undergraduate programs, SHINE does not require students to submit reflections or undergo any form of evaluation. Therefore, volunteerism with SHINE is not service-learning per se. Despite anecdotal feedback from students that student volunteer experiences at SHINE are meaningful and hold educational value, there has been no formal investigation of the student learning context at SHINE nor the services provided at the clinic by the student volunteers.

The primary purpose of this thesis is to explore the experience of patients and volunteer undergraduate dentistry and dental hygiene students who participate in an inner-city dental clinic (SHINE). An inductive inquiry can explore patients and students' experiences in the unique clinical setting that is SHINE to explore how SHINE meets the access needs of the community it aims to serve, and how volunteerism through SHINE contributes to students' learning. Further, deductive inquiry can investigate patient satisfaction with access to SHINE as a measure of access. Findings may inform improvement strategies at SHINE, and other community and outreach dental clinics.

Thesis Overview

This thesis begins in chapter 2 with an investigation into access to care from the perspectives of health brokers. Health brokers are individuals who work or volunteer at community outreach centres that link marginalized populations to health and social services to ensure their health and well-being. (Wallace et al., 2018). We started our investigation with health brokers to obtain a broad picture and understanding of how our target patient population might access dental services and specifically services from SHINE. In chapter 3, we then turn to exploring the student experience at SHINE. From student volunteer interactions with patients, the unique clinical environment that SHINE offers and the learning opportunities students experience, this study aims to understand what the volunteer experience at SHINE contributes to student learning. Circling back to our target population and following up on the health brokers perspectives of access, in chapter 4, we explore the patient perspective of SHINE to obtain a comprehensive understanding of the patients' oral health needs, their satisfaction with access to oral health services through SHINE, and what alternatives for dental care patients pursue when they are not able to receive care through SHINE? Combined, these three papers shed preliminary insight into the potential contributions a community dental clinic can offer to not only the community itself but also student volunteers who report such experiences as enhanced learning opportunities.

Chapter 2: Exploring Access in a Volunteer Free-Service Dental Clinic

This chapter, in its entirety, is published in the Canadian Journal of Dental Hygiene, which is cited as: Kallal MG, Compton SM, Brodie AR, Moran BL, Yoon MN. (2021) Exploring access in a volunteer free-service dental clinic. *Canadian Journal of Dental Hygiene,* 55(2), 120-23. Formatting has been changed to fit within the format of this dissertation.

Abstract

Introduction: Marginalized, low-income individuals face many barriers to dental care, including but not limited to cost. The Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic is a student-operated volunteer clinic offering free services to low-income individuals. This study aimed to explore the access to dental care needs of low-income groups, from community health brokers' perspectives.

Case description: The study was deemed exempt from ethical approval (Pro00074745). Five semi structured interviews exploring access to dental care were conducted with health brokers purposefully selected from 4 different community outreach centres. Access was defined and analysed using Penchansky and Thomas' theory of access as modified by Saurman.

Results: Interviews revealed lack of awareness of the SHINE clinic. English translation support was an identified need, and there was concern for clients who fear discrimination in health care settings.

Conclusion: Preliminary barriers to care at SHINE were identified. However, further investigation is required to understand how SHINE aligns with population needs.

Keywords*:* *access to care; dental clinic; fear of discrimination; free; language barriers; low-income; oral health; student; volunteer; health broker*

CDHA Research Agenda category: access to care and unmet needs

Practical Implications of the Research

Improving access to oral health care for marginalized people is complex and often involves multiple stakeholders.

- Health brokers support marginalized people in obtaining needed services.
- Gaps in communications and delivery of services must be considered when establishing programs to meet a need in society.

Introduction

Poor oral health contributes to pain, infection, problems with speech and mastication, and increased inflammatory mediators correlated to systemic illnesses (Rousseau et al., 2014), (Jepsen et al., 2015). In addition to systemic effects, poor oral health impacts mental health by affecting one's ability to engage with people and the surrounding environment, creating stigma and social isolation (Rousseau et al., 2014; Kisely, 2016). Even though oral health is a significant component and predictor of general health and well-being, Canada's publicly funded health care system does not include dentistry (Quinonez, 2013). Due to cost barriers alone, 22.4% of Canadians avoided seeking dental care in 2018 (Statistics Canada, 2019). Those in the lowest income quintile were least likely to seek dental care, even if dental coverage was available to them, suggesting there are further barriers (Statistics Canada, 2019).

Health services in high-income countries are recognizing challenges in engaging marginalized populations (Wallace et al., 2018). Marginalized populations are defined as those experiencing inequalities in accessing power and resources, and those who are socially excluded (Vasas, 2005). One solution to reducing health disparities faced by marginalized groups is to engage health brokers (Wallace et al., 2018). Health brokers are individuals who work or volunteer at community outreach centres that link marginalized populations to health services, producing beneficial health outcomes (Wallace et al., 2018). They possess knowledge of the needs and barriers their clients face in accessing health care, including dental care. Additionally, they are uniquely positioned to bridge boundaries between marginalized populations and health services to improve access.

Case Description

Recognizing that significant gaps exist in access to oral health care, undergraduate dentistry students at the University of Alberta (Edmonton, Canada) established the Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic in 2004. SHINE is a free service operated by volunteer undergraduate dentistry and dental hygiene students from the university. The initiative aims to reduce inequalities in dental health by increasing access to oral health services among low-income individuals ("SHINE Dentistry," 2020). Services offered at SHINE include dental hygiene care, restorative dentistry, and emergency procedures, such as tooth extractions. Clients are seen on a walk-in basis and triaged for treatment based on their age, level of pain, and infection. SHINE gives priority to youth but provides services to anyone who cannot afford dental care. Referrals to the University of Alberta School of Dentistry dental clinic are made for cases deemed too complex to be managed through SHINE. The referral process allows for continued care, free of charge, for children under the age of 18. However, depending on the type of treatment required, adults referred from SHINE may pay all or partial costs associated with receiving dental care at the School of Dentistry.

While SHINE is providing needed dental and dental hygiene treatment in the inner city, there is limited insight into SHINE's connection with the marginalized populations it aims to serve. Access is the measure of fit between a service and the population's needs (Penchansky & Thomas, 1981). Using Saurman's modified version of Penchansky and Thomas' theory of access, this study sought to gain the perspective of health brokers at community agencies in the inner city on SHINE's alignment with the access needs of the marginalized populations they serve (Penchansky & Thomas, 1981; Saurman, 2016).

Methods

Ethics approval was sought from the University of Alberta's Research Ethics Board (REB, Pro00074745). As a needs assessment to optimize services for populations the SHINE dental clinic aims to serve, the project was deemed outside the mandate of the REB.

This exploratory qualitative descriptive study used purposeful sampling to select health brokers who work closely with low-income and homeless individuals in the urban inner city area, arranging health and other services to meet their basic human needs. Five health brokers were selected from 4 different community outreach facilities, as their position and direct involvement with the inner city population made them ideal information-rich sources that could speak to this population's needs. Health brokers were not given any information regarding SHINE prior to the interviews.

Two undergraduate student research assistants, one in dentistry and one in dental hygiene, under the guidance of a principal investigator conducted semi-structured individual interviews of approximately 40 minutes each. Interviews were audio recorded and transcribed verbatim for manifest content analysis. After completion of the interviews, an oral presentation was given to participants and others at the community agencies to improve awareness of SHINE. Saurman's (2016) modified version of Penchansky and Thomas' (1981) theory of access, as outlined in Table 1, was used to define accessibility, and the data were coded according to Saurman's 6 domains of access.

Table 1

The Dimensions of Access

Dimension of access	Definition
Availability	Supply and demand
Accessibility	Ease of access to the location
Acceptability	Consumer perception of the service
Accommodation	Organization of the service to accommodate clients (e.g., adequate hours of operation)
Affordability	Financial and incidental costs associated with the service
Awareness	Communication and information about the service is known to stakeholders, clients, and community

Note: Table 1. is adapted from: Saurman (2016) Improving access: Modifying Penchansky and Thomas's theory of access. *Journal of Health Service Research and Policy*, 21(1), 36–39. Table 1. The dimensions of access (p.37).

Results

Awareness

Awareness of SHINE was not a prerequisite for participation in this study. Interviews explored health brokers' awareness of SHINE, its services, the clients it serves, and more. Only 1 of the 5 participants was aware of SHINE, but all were familiar with the community health facility where SHINE is located.

The interviews confirmed how the health brokers support access to needed services: "*We're a lot of the times, the first connection, or one of the few connections that they*

[marginalized individuals] have to the…public health system." Furthermore, health brokers acknowledged the need for dental services, explaining, "*Oral health is probably one of the biggest things that I see people struggle with.*" Although the health brokers noted a lack of awareness among clients: "*It's just that, they don't know that [dental care is] out there. They don't know what they can do about it."*, they also expressed a need for support to source dental care for their clients:

> *We probably do need more support to find dentists who would be willing to work with our families…it would be great if we could have some navigational support.*

Health brokers' awareness of SHINE's services would enable them to link their clients to SHINE, thus raising awareness of the clinic among marginalized population groups. Lack of awareness of SHINE among both health brokers and their clients led us to conclude that awareness is an access barrier. A secondary benefit of the interviews was the opportunity to share information about SHINE with the health brokers.

Overall, health brokers lacked awareness of the SHINE dental clinic. As a result, data available for analysis in other domains were limited. However, health brokers' knowledge of their clients' needs and the community location of SHINE enabled them to speak to aspects of each domain.

Availability

Dental services most needed by marginalized inner city populations, as described by health brokers, include oral health education, dental hygiene treatment, fillings, extractions, pain management, elimination of infections, and dentures. Pain was the motivating factor to seek care:

If you're not in pain [then] no one really thinks about the mouth.

Common dental concerns are lack of hygiene leading to big cavities everywhere, and pain, and infection, stuff like that…we can't even put out crunchy peanut butter because they said that they are at risk of cracking a tooth.

However, in pursuit of pain relief, marginalized people often undergo tooth extraction, resulting in extensive tooth loss: *"So many of them have lost a lot of teeth…being able to set people up with getting dentures [would be valuable]*." SHINE provides all of these services except for denture fabrication. Overall, the availability of dental services at SHINE was perceived as an asset. However, finding offices to pursue denture prosthetics for clients is an area for further investigation.

Accessibility

SHINE, located within a community health centre in the inner city, was thought to be a ideally situated by 3 of 5 health brokers. Its central location, proximity to other outreach facilities, and ease of access by public transit were considered assets. Location was deemed important because health brokers reported that their clients' primary sources of transportation were walking, bicycling, and public transit: "*The majority of them either take the bus, or walk*." Two health brokers indicated that, although SHINE's location is in an ideal area for some low-income groups, it is not ideal for all of them, specifically new immigrant families. They described that different populations of low-income people require different settings to feel comfortable. Although the location was not deemed ideal for all low-income populations, SHINE was considered situated in a readily accessible location for many potential clients.

Acceptability

Data on the acceptability of SHINE were limited due to the health brokers' lack of awareness of the initiative. However, one broker suggested that the people who typically attend SHINE (e.g., individuals facing financial hardship, social barriers, and/or requiring addictions and mental health services (Boyle McCauley Health Center, 2020)) may actually prevent other prospective clients from accessing its services:

> *Some of our mothers feel uncomfortable at that location. Without any discrimination of the population there…we actually don't bring our families to that health centre.*

Although SHINE is deemed to be geographically accessible, it may not be an acceptable setting for all prospective clients. Further inquiry is required into this perspective as it was reported by a single health broker.

Accommodation

Health brokers speculated that 2 barriers to care at SHINE might be limitations in language services and perceived discrimination. The language spoken by volunteers at SHINE is predominantly English. However, other languages may be understood and spoken depending on the available volunteers. One health broker explained:

> *We tend to work with [new immigrant and refugee] families who are most vulnerable, and so, the majority of them will have difficulties with English. So, my guess would be…maybe 70 percent of [this] population will have some English language barrier.*

Perceived oppression and marginalization among homeless and low-income individuals were also identified as an accommodation barrier to health care in general. As one health broker explained:

> *There's a lot of obstacles for people connecting with the healthcare system… Some of them are real, and some of them are perceived. You know, our demographic isn't always treated properly by the healthcare system… Oppression, marginalization, racism…*

As a result, "they don't like going to the doctor…they don't do anything until it's basically causing them an excessive amount of pain."

Affordability

SHINE offers free services. Although other cost barriers, such as transportation and childcare, may exist, no affordability barriers were identified.

Discussion

A common theme that emerged from this project was low-income individuals' fear of discrimination in health care settings. There is a cultural incompatibility, indicating a poor fit of values, between the private practice model and the oral health needs of marginalized groups (Wallace & MacEntee, 2012). Dental clinics should consider how they can provide services in a culturally safe manner for marginalized population groups (Patrick et al., 2006). It is SHINE's goal to provide a culturally safe space. To that end, more insight is required into the acceptability of the clinic.

Unfortunately, among the 5 health brokers interviewed, there was limited awareness of the SHINE dental clinic. Awareness is an important dimension of access because health brokers cannot refer clients to a program they are not aware of (Saurman, 2016). This lack of awareness also hindered the gathering of data on availability, accommodation, and acceptability. Therefore, the project's ability to address the overall concept of access was limited. However, by interviewing health brokers and providing a post-interview presentation, the research team was able to inform them about SHINE, raising awareness and potentially more referrals to SHINE henceforth. This outcome will require further follow-up, which is already underway.

Conclusion

This exploratory qualitative study with health brokers who facilitate services in an inner city low socioeconomic area identified strengths and weaknesses of the SHINE dental clinic. Its strengths include affordability, accessibility, and availability of select services. Its weaknesses include lack of public awareness, limited translation services, and fear of discrimination among clients. Using individual interviews to collect the data resulted in a secondary outcome of educating, informing, and increasing awareness of SHINE among the health brokers, which may increase the use of the clinic by inner city groups.

Acknowledgements

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Conflicts of Interest

The authors have declared no conflicts of interest.

Chapter 3 – Learning through Volunteerism at a Student-Run Not-For-Profit Community Dental Clinic

Abstract

Introduction: The Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic is a student-run dental clinic that provides free dental care to low-income inner-city Edmontonians. SHINE is managed and operated by the dental students association, independent from the University of Alberta. Volunteer students care for patients under the supervision of volunteer dentists and dental hygienists from within the community. Although not a formal learning facility, anecdotal feedback from students and preceptors indicates students are having valuable learning opportunities. The purpose of this study is to investigate how the volunteer experience contributes to student learning.

Methods: Ethics was granted from the University of Alberta Research Ethics Board (Pro00101981). Using maximum variation purposeful sampling, students were recruited to participate in five focus groups (N=19). Interpretive description informed the study and data was analysed using manifest thematic analyses.

Results: We derived three themes which captured how SHINE benefitted student learning: learning environment, learning enhancements, and learning from patients.

Conclusion: Students' experiences volunteering with SHINE had beneficial learning outcomes and brought to light three considerations for undergraduate dentistry and dental hygiene education; need for further cultural competence education, student desire for "real-life" experiences, and a reduction in evaluations once competency was achieved.

Introduction

Canada's privatized approach to oral health care privileges the wealthy and those with dental insurance, creating broad dental inequities in society (Moeller & Quiñonez, 2020). Income and dental insurance coverage are the two most significant predictors of a person seeking oral health care (CDA, 2017). Furthermore, Canadians without dental insurance, constituting 50% of low-income Canadians, are three times more likely to avoid seeing a dental professional due to cost barriers alone (Rousseau et al., 2014; Figueiredo et al., 2017). An affordable oral health care option is needed.

Recognizing affordability as a barrier to care, undergraduate dentistry students established the Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic in 2004. SHINE is a student-run free-service dental clinic independent from the University of Alberta, located in the inner-city of Edmonton, Alberta. Volunteer dental and dental hygiene students from the School of Dentistry provide care to patients under the supervision of volunteer preceptors who are licensed dentists and registered dental hygienists. SHINE's mission is to provide urgent and emergent oral health care and dental hygiene therapy free of charge to the low-income and uninsured (SHINE Dentistry, 2020). Services offered at SHINE include restorative dentistry, dental extractions, endodontics, pediatric dentistry and dental hygiene therapy (SHINE Dentistry, 2020). Appointments are offered on a first-come, first-serve basis, and often demand exceeds SHINE's capacity. Thus, not everyone who presents to SHINE can receive treatment each week. SHINE only treats one dental concern per patient to accommodate as many people as possible unless low attendance permits otherwise. Patients who are not seen or have more than one dental concern may present multiple weeks in a row to address all their dental needs through SHINE.

While not a formal learning environment that is integrated into the dentistry and dental hygiene curricula, SHINE closely aligns with service-learning pedagogy. This learning strategy fosters cultural awareness while integrating academic learning and technical skills to address a public health issue via service (Yoder, 2006). Service-learning allows students to connect their knowledge to real-life problems and provides a deeper contextual understanding of course content (Salam et al., 2019). Service-learning can also build sustained community partnerships with reciprocal benefits where community members identify a need that can be met by students and students improve their comfort and competence in serving community members by learning and understanding the characteristics of different cultures and potential barriers members may face in attaining services (Yoder, 2006). By definition, service learning requires the inclusion of a structured reflection component (Yoder, 2006; Yorio & Ye, 2012; Salam et al., 2019), which is also an essential skill for all healthcare providers to learn and develop from their experiences. Both the Canadian Dental Association (CDA) and Canadian Dental Hygienists Association (CDHA) acknowledge reflection as an ethical principle and competency (CDA, 2015; CDHA, 2010). Reflection pushes students and health care professionals to think critically and develop personal insight surrounding how their experience has impacted them and the people they serve (Yorio & Ye, 2012). As SHINE is a student-run initiative and not a formal extension of the University curriculum, there is no structured reflection component; therefore, not considered service learning, by definition. However, anecdotal feedback from students and preceptors has indicated that SHINE is an invaluable learning opportunity. While being a social advocacy initiative by students, there is little known about SHINE's unique clinical environment and how it might contribute to student learning. This study aims to explore what the volunteer experience at SHINE contributes to student learning. As the dentistry and dental hygiene programs expand

their community-based rotations, understanding this type of volunteer experience can offer insight into opportunities for students' learning and inform service-learning programs on how to better align with students' learning needs.

Materials and Methods

Ethics approval was granted from the University of Alberta's Research Ethics Board (Pro 00101981).

Design

Interpretive description informed the study design. Interpretive description is an inductive method ideally suited to describe themes and patterns arising from the contextual nature of the human experience while simultaneously exploring shared realities and different perspectives (Thorne et al., 1997; Thorne et al., 2004). The study was approached from a constructivist perspective, which assumes a relativist ontology and a subjective epistemology (Creswell, 2007). Relativist ontology assumes multiple realities and that reality is not distinguished from subjective experience. Subjective epistemology is the belief that meanings are socially constructed through interactions and experiences. Participants influence the researcher and vice versa to create consensual interpretation. Our approach impacted the data analysis in that we focused on highlighting shared and different values between and amongst participants. It also acknowledges the researcher as an integral contributor in constructing the analysis.

Virtual Focus Groups

Focus groups were selected as the data collection instrument because they are the ideal method for understanding the perspectives of a group of individuals who possess specific characteristics, in this case, students who volunteer at SHINE (Krueger & Casey, 2000).We

followed Krueger and Casey's (2000) approach to focus groups. It enables participants to ponder, reflect and listen to others' opinions and experiences while considering their own and how their realities inter-relate to form a comprehensive understanding of the multiple perspectives. Expertise from the research team (dental hygienists and qualitative researchers) was used to develop the focus group guide, which was adapted between sessions to delve into themes derived from earlier sessions and account for sequential analyses.

Five focus groups were held virtually using the video conferencing program Zoom Video Communications Inc. (Zoom) at pre-selected times convenient to the participants. Sessions were recorded using Zoom, transcribed verbatim by the primary researcher, and saved to a password encrypted server. Focus groups were conducted virtually to preserve social distancing during the COVID-19 pandemic. Virtual focus groups are considered to be a theoretically sound alternative to in-person focus groups (Rupert et al., 2017; Gray et al., 2020), with the added benefit of improved accessibility for participants (Gray et al., 2020).

Recruitment and Sample

Maximum variation purposeful sampling was used to recruit University of Alberta dentistry and dental hygiene students. Students were recruited via email, and all students who volunteered at SHINE were eligible to participate. A $15 gift card was offered as an incentive to increase student participation in the focus groups. Purposive sampling was done to ensure students within each year of each the dentistry and dental hygiene programs were represented. Additionally, we engaged students who volunteered frequently and infrequently, including members and non-members of the SHINE executive committee. SHINE requires many student volunteers in various positions to operate, and we sought to include that diversity within the focus groups. Following the evidence, a minimum of three focus groups were conducted (Guest

et al., 2017; Krueger & Casey, 2000). Additional focus groups were conducted until data saturation was achieved, for a total of five sessions. Each session lasted between 45 and 80 minutes. Each participant provided written consent before participation.

Analysis

Data were analyzed using sequential, manifest thematic analyses. Thematic analysis is a method that aligns with interpretive description for the identification of themes from patterns of responses inductively developed (Braun & Clarke, 2006). Sequential analysis enabled the researcher to use data from earlier focus group discussions to guide subsequent discussions, typical of inductive exploration (Kvale, 1996). To improve rigor, two members of the research team were involved in the analysis. Disagreements regarding coding and thematic analyses were resolved via consensus. Credibility and transparency were maintained using respondent validation and reflexivity. Respondent validation is where the researcher paraphrases their understanding of the gathered information back to the respondent to ensure accurate interpretations and recognizable accounts of the data (Roberts & Priest, 2006). Reflexivity is the act of being transparent and making explicit acknowledgements within a publication of any subjective judgements (Roberts & Priest, 2006).

Results

Five focus groups ranging between three and five participants, totaling 19 participants were conducted (see Table 2 for participant characteristics). Three main themes were identified: learning environment, learning enhancements, and learning from patients.

Table 2

Student Characteristics

Volunteer Type	Executive volunteer	Non - executive				
	6	13				
Program and Year	DDS YR1	DDS YR2	DDS YR3	DDS YR4	DH YR3	DH YR4
	2	5	2	1	6	3
Gender	Male	Female				
	4	15				

Learning Environment

Students unanimously reported having positive experiences in volunteering at SHINE and shared that they were highly motivated to participate in what they felt was a unique learning environment. The theme of learning environment describes contextual factors that students perceived as relevant to dentistry and dental hygiene student learning that differed from their university-based teaching clinic. Key learning environment factors of SHINE included pace, preceptor ratios, autonomy, and collaborative learning.

A common motivator discussed by students to volunteer at SHINE is the belief that SHINE is akin to dental practice post-graduation. SHINE aims to provide quality care to as many people as possible. To do this, students felt they needed to develop a level of speed and efficiency, which was perceived as more closely resembling *"real life"* dental practice. Students shared that speed and efficiency in conducting oral assessments were promoted by fostering their abilities in discerning what information was essential to document compared to the required exhaustive documentation of conditions in their school clinics.

"It's really nice because it helps us to get into the habit of what it's going to be like in private practice in terms of speed and efficiency and doing all of the right checks but not spending all the time that we do in [school]."

Speed and efficiency in treatments were fostered by the fast-paced environment of SHINE, where students problem-solved more autonomously, integrating their knowledge and skills to implement the best treatment plan. Although students felt they had more "autonomy" creating treatment plans, it is important to note that preceptors approved all treatments before students proceeded. Students were not able to pre-plan or prepare for patients because SHINE does not take appointments, so this presented students an opportunity to think on the spot.

"At SHINE, you have no idea who you're going to see, what age they are, [their] understanding of English, how severe their teeth or their oral disease might be, so I think it's a really good learning experience to be able to think on the spot, and learn on the spot, and deal with things as they come."

Additionally, students perceived the SHINE environment to be better at facilitating opportunities for peer-to-peer and learner-to-preceptor interactions. At SHINE, students are paired with a peer for all procedures providing opportunities for students to observe and learn from each other on how to complete certain procedures and use different tools or techniques.

"It was one of the few times where you got to watch somebody else do something … you see how somebody else does a filling, and you're like, 'Oh, I never thought of that. I should do that next time.' I think it can make everyone better operators."

The reduced ratio of students to preceptors also allowed more time for students to interact with the expert preceptor for meaningful mentorship. *"Our ratios are higher in [the school] clinic, so we feel behind because we don't get as much help. Being able to have a [preceptor]*

spend more time with me was really nice at SHINE." This mentorship could also be further enhanced because SHINE, being entirely voluntary-based, is not a clinic where students are evaluated. Alleviated from the pressures associated with grades, students felt it facilitated better learning, as they were more comfortable interacting with and asking for help from peers and preceptors. "*You get the education, but you don't feel like you have to spend an extra 20 minutes on one tooth because you're worried about grading… I find that helps develop my skills as an actual practitioner."* This type of collaborative learning environment, free from formal evaluations, enabled students to practice open communication and constructive feedback with peers and preceptors alike.

Learning Enhancements

Students perceived SHINE as an opportunity for exposure to dental equipment and procedures that supplemented and reinforced their existing and developing clinical skills. Students found value in volunteering in both operator and non-operator roles within SHINE. Thus, the theme of learning enhancements is defined as roles and responsibilities students undertake at SHINE that either add to or further develop existing clinical skills. *"[SHINE] broadens your clinical experience so much, and you get to learn new skills that you wouldn't necessarily otherwise."*

Operator role. Patients attending SHINE generally presented with worse oral health and were more challenging to treat than patients in the school clinic. Dentistry students shared that patients often presented with multi-surface dental decay that required extensive fillings or extractions. While large restorations and multiple extractions are commonplace at SHINE, dental students expressed that they are rare in the school teaching clinic. Additionally, dental hygiene

students indicated that patients of SHINE were more likely to be experiencing greater severity of oral diseases which pushed students to deliver treatment and care for more advanced and complex conditions compared to what they typically encountered in the school clinic.

Non-operator role. SHINE being entirely student-run means that student volunteers take on roles beyond clinical operators, including reception, instrument processing and sterilization. At the school teaching clinic, non-operator roles are completed by paid staff; therefore, students have limited exposure to these roles and responsibilities. Students discussed how exposure to non-operator roles at SHINE improved their knowledge of the daily operations within a small dental clinic. Specifically, how to interact with patients, triage patients, be familiarized with various dental tools, equipment and software, and execute infection control during instrument processing. Students perceived that these skills would benefit them in their school teaching clinic and provide an advantage for entering private practice after graduation.

> *"I really like the opportunity to do more than the operator shifts [at SHINE] because we don't learn a whole lot about it [in school] … being able to go into an office and say that I have sterilization experience or that I have experience with Dentrix [a dental software] or I know how to talk to patients about the front end stuff gives you a lot of advantage when you are looking to go into private practice."*

See Table 3. for operator and non-operator specific enhanced skills and supporting quotations.

Table 3

Supporting quotations for the theme Learning Enhancements

Skill	Quotes
Non-Operator.	
Administration and Triage	*One thing that I've learned at SHINE that I didn't really see at [school] was the triaging and the prioritizing what the patient needs.*
	I found that the admin assist shift where I was triaging the patients was really helpful for education… you get really good at condensing [oral assessments].
Instrument Processing/Sterilization	*We had to do all the sterilization and all the behind-the-scenes stuff, which is really cool because we don't get to do that at the clinic in our school setting.*
	Depending on the clinic dynamics that we work in afterword, jumping in to help with sterilization can be huge with how you interact with your coworkers and how the clinic can continue to run smoothly on a busy day. Its, awesome that we get the chance to go through all of the [sterilization] processing steps
Dentrix (software)	*Exposure to Dentrix – that's a huge pointer and a way to get students to volunteer [because] Dentrix is the main [software] that [practitioners] use in private practice*
	Dentrix is a big help because Axium at school isn't used anywhere else. So then we have to relearn whole [software] programs. So having that exposure [to a more commonly used dental software] is really nice.
Operator.	
Tooth Extractions	*We don't get a lot of extraction experience at the school.*
	[SHINE patients] have significantly bombed out [decayed teeth and periodontal disease] teeth, we do a lot of extractions [and] a lot of open and drains.
	There's been lots of extractions [at SHINE]. There's been lots of root tip extractions, and there's bombed-out caries extractions or lost teeth due to periodontal disease.
Large Dental Restorations	*There's been quite a few major fillings - ones that involve four surfaces.*

Different Dental Tools and Materials	*[There are] different instruments, or materials that we see at SHINE [that] we didn't know what it was before and now we've learned… [that] there are other options.*
	The materials that we use [at SHINE] are similar, but it's not always the same. I think it's fantastic because after you graduate… you might not get the composite gun that you want… [or] the exact materials that you know how to use.
Oral Radiology	*We are more likely to take radiographs at SHINE.*
	The pans as well, at [school] they just do it for you. They show you, but –
Complex Oral Hygiene Cases	*More exposure to more difficult cases has really helped facilitate learning*
	From a hygienist perspective, we see a lot more difficult cases, so we're able to improve our skills more.
	Cases at SHINE [have] more heavy [calculus] deposit.

Learning from Patients

The theme of learning about patients is defined as the understandings students gained by interacting with SHINE's patients, whom students primarily identified as *"citizens who are of lower socioeconomic status, or immigrant groups who have a language barrier and have more difficulty accessing care."* Many students reflected that they were motivated to volunteer at SHINE because they wanted to help people who have lower-income by providing free oral health care and education. However, after volunteering, students reported that the patients of SHINE had much to teach them. Three sub-themes were identified in what students learned about the patient population: empathizing with patients, communicating with patients, and awareness of patient circumstances.

Empathizing with patients. For many students, volunteering with SHINE was their first introduction to working with a low-income inner-city population. Some students self-described as coming from *"sheltered backgrounds,"* and many had no previous experience interacting with inner-city low-income groups. Attending SHINE challenged their comfort zone while providing an opportunity to build rapport with patients and treat them empathetically. The theme of empathizing with patients was defined as student learning surrounding treating patients from diverse backgrounds with empathy.

Patients presented with complex oral health cases and often limited oral health literacy. Students described their experience working with these patients as *"eye-opening," "challenging,"* and *"humbling."* Students could learn from patients and develop an awareness of their circumstances and empathize with patients because *"there is more time liberated for building relationships with patients at SHINE."* Volunteering at SHINE provided a valuable opportunity to learn how to engage *"people from all walks of life who have poor oral health for a lot of different reasons"* and empathize with their life circumstances to *"help them where they are at"* in their oral health journey. Students described SHINE as an opportunity to interact with inner-city patients that "*shape views and … hopefully it makes us open and understanding of all kinds of beliefs and people's opinions."*

> *"SHINE overall is a really humbling experience and allows us to gain a lot more empathy for the people… and the circumstances that they are in."*

Communicating with Patients. Volunteering at SHINE improved students' ability to communicate with diverse populations. Many patients presented with limited oral health literacy,

which created challenges for how patients expressed their dental concerns and how students communicated solutions. The sub-theme of communicating with patients was defined as communication strategies students learned to enhance interactions with patients.

Working with patients experiencing language barriers or low oral health literacy *"teaches us how to speak to different people."* Further, it reinforced students' active listening skills to ensure they understood the patients' chief concern, *"it really made me a better listener, and hopefully a better dentist."* Students learned to *"navigate language barriers"* using multiple techniques, including hand gestures, diagrams, simple wording, and online translation tools. Students valued the opportunity to navigate language barriers and considered it a *"good learning experience."*

Awareness of Patient Circumstances. Volunteering challenges students' awareness of social inequities. (Holdsworth & Quinn, 2010) Working with SHINE patients, students gained an understanding surrounding how the social determinants of health impacted access to oral health services and patients' oral health outcomes. Students gained insights and understanding of dental poverty by participating at SHINE and witnessing barriers to oral health care, how SHINE improves access for the *"underserved,"* and the impact of poor access to care on oral health outcomes. Students felt more aware of dental poverty within the city. "*We realized how cost prohibitive and how limited access is for a lot of people."* Cost was universally identified as being the main barrier to oral health care. Thus, SHINE being a free service was felt to alleviate the financial burden associated with the cost of dentistry. Beyond the financial barriers, students were further able to identify means with which SHINE's unique environment improved access for the low-income: SHINE is *"culturally diverse"* and *"less formal"* compared to other dental

clinics, the diversity and *"comfortable"* environment would make patients feel more at ease attending SHINE.

Although SHINE improves access for the targeted population, student commentary indicated awareness of remaining barriers to care for their patients. Students identified the availability of services as a barrier as there is more demand for oral health services through SHINE than students can accommodate. *"I would say that there is way more need than we can accommodate. Because on a weekly basis, we are turning people away."* Further, students identified that the first-come-first-serve nature of the clinic impedes access for some individuals. *"Some people don't have the time or the ability to wait outside or to wait in line for[up to] four hours for treatment, especially in the winter months."*

Despite efforts to improve accessibility to oral health services through initiatives such as SHINE, overall access to care persists resulting in poor oral health outcomes, *"[SHINE patients] have often waited longer before they access care, so their disease conditions are usually worse [more] progressed."* The worsened disease state created differing student opinions surrounding patient priorities. Although some students believed that patients simply did not prioritize oral health and that their teeth did not matter until they were in pain, (*"[patients are] simply not prioritizing their oral health, and it's obvious… they only care when it starts hurting"),* other students believed that patients could not afford to prioritize their oral health (*"it's not that people don't care about their oral health. Money really is that huge of a factor").* Although students disagreed on their understanding of patient priorities, students agreed that SHINE patients primarily presented for *"symptomatically driven visits,*" which differed from the preventive oral health care students were accustomed to performing in school. A large portion of the patients sought care through SHINE for pain relief. Students found serving SHINE patients rewarding

because they could make an immediate and significant difference for the patients by providing freedom from pain. *"You can immediately help … that's the point of SHINE."* Students associated dental pain with poor quality of life, causing patients to *"talk funny… and it's lost me days at work."* Meanwhile, the provision of oral health care and freedom from pain improved confidence, with patients reporting, *"I can smile again."*

Part of providing quality oral health care is educating patients and preventing further oral disease. Volunteering at SHINE provided students with insights that individuals who lack access to care potentially "*lack of oral health literacy.*" Limited access to oral health services means patients may not understand the etiology of their disease or how to prevent it. *"If we can educate them on prevention, or why their tooth might be hurting, why they have cavities, why their gums are bleeding, I think that's really helpful."* Students deemed oral health education so important that it consisted of a significant portion of their time volunteering at SHINE. *"Some days, half of the patients are patient education, and half is procedures."* Oral health education topics included caries etiology, caries prevention, techniques for oral home care, periodontal theory, and gingivitis theory. Students perceived that if they could educate the patients on proper oral home care, it could lessen the need for responsive dental treatment. They believed that oral health education was a valuable aspect of SHINE. *"[Students] solve the problem, but also give them instructions on how to prevent further disease … that's where the value comes in."* Acknowledging that SHINE patients have limited access to oral health care, students speculated that many of their patients had never seen a dentist or dental hygienist before SHINE. Students emphasized the value of providing patient-specific oral health education. *"It's giving them the tools that they need in order to help them where they are at in their situation."*

Lastly, students learned that patients often needed help sourcing where to find affordable care options and seek treatments that SHINE could not provide. *"There are a lot of people who need dental education for what is going on, what they need, and how to navigate the dental system here, so we can get them wherever we need them."* Teaching patients where and how to access care was deemed of utmost importance because access was the first step in care.

Discussion

Our study explored the student experience at SHINE and its perceived benefit to learning. The data shows consistent views supporting that students experienced beneficial learning during their volunteering at SHINE which could be classified into three themes; learning environment, learning enhancements and learning from patients. Further, data revealed insightful perspectives which could be used for quality improvement.

The learning environment fostered problem-solving, speed and efficiency and collaborative learning, which students attributed to freedom from grading, working in pairs, and low preceptor to student ratios. Once a student reaches clinical competency grading may become a potential barrier to the student to build further competencies.. Furthermore, excessive grading can be counterproductive to learning and impact patient care in clinical education (Perez et al., 2020). Grading can create an environment of competition rather than collaboration, potentially reducing the desire to learn (Schinske & Tanner, 2014). As teaching strategies move away from an instructor-centred, transmissionist style and towards an interactive, hands-on approach, so too should the grading (Schinske & Tanner, 2014). Considerations on the type of evaluation and

feedback to which students respond best need to be incorporated into overall curricular planning. In terms of feedback specifically, some studies have reported that there is no objective difference between oral and written feedback in some studies (Tayebi et al., 2017; Elnicki et al., 1998) while other literature indicates students may prefer immediate oral feedback as opposed to written feedback (Perez et al., 2020). Evidence suggests that students value quality feedback delivered in interactive modes (Henderson et al., 2019). Beyond the feedback, incorporating dialogue and reflection may push students to think critically and develop insight into their experiences (Yorio & Ye, 2012). We hypothesize that the learning benefit from SHINE may be due in part from reduction in grading, collaborative learning, and interactive feedback.

In addition to assessments and collaborative learning, students identified a desire for an authentic learning experience akin to practice post-graduation. Participating in non-operator roles such as sterilization, triage, and administration were considered assets of SHINE that students identified as missing in their school clinic. Further, the pace of SHINE was perceived as more similar to practice after graduation. Students indicated a desire for an authentic or *"real-life"* experience to prepare them for practice upon graduation. SHINE met that desire and was considered an advantage for employability post-graduation. Student opinions surrounding advantages for employability are also reflected in the literature. There is a growing emphasis on 'economies of experience' (Holdsworth & Quinn, 2010). For students to attain employment, the experience and cultural capital that comes with volunteerism can provide an advantage (Holdsworth & Quinn, 2010). However, since not all students can participate in SHINE, providing students authentic experiences within the curriculum may improve students' sense of preparedness. Any future implementation of such curricula should be supported by a further

investigation into the alignment of student perceptions of what "real-life" dental clinics are and how they operate in comparison to actual private practice or community practice settings to ensure that there is indeed an authentic representation and applicable learning that enhances student skills and knowledge.

Students also identified learning directly from patient experiences as a key benefit of volunteering at SHINE with sub-themes empathy, communication and awareness. This type of education aligns with the acquisition of cultural competence, which is the ability to interact meaningfully with people of diverse cultural backgrounds, including beliefs, values and behaviours (de Guzman et al., 2016). Attaining cultural competence is a constant process whereby individuals must improve their self-awareness and social skills to interact and advocate for others (de Guzman et al., 2016). Thus, student reports of enhanced empathy, communication skills, and awareness are akin to developing cultural competence. Further, cultural competency has been identified as key to decreasing the racial and socioeconomic disparities from the perspective of both health-based outcomes and patient experiences within the healthcare system (Weech-Maldonado et al., 2012; Taillon, 2019). To improve patients' health outcomes, it is essential to create empathetic and culturally competent students (Weech-Maldonado et al., 2012). However, empathy and cultural competence were not uniformly acquired by students. This was represented in students' differing opinions on low socioeconomic status patients' oral health priorities. Some students believed that marginalized patients with advanced oral disease conditions did not prioritize their oral health. There was also an assumption among some students that those with limited access to care also had less oral health literacy. These assumptions must be challenged to promote cultural competence in students because experiential

learning in the absence of purposeful education can potentially reinforce stigma rather than reduce it (Alipanopoulos et al., 2020). However, such education may be difficult to implement in a volunteer opportunity like SHINE, which is outside of formal curricula.

Limitations

Participation at SHINE is voluntary. Motivations for students to volunteer may not be shared with students who choose not to volunteer. Therefore, learning outcomes and recommendations may not be generalizable to all undergraduate dental and dental hygiene students.

Conclusion

In conclusion, this exploratory qualitative study identified three themes where volunteering through SHINE contributed to student learning. First, the unique learning context of SHINE reinforced student learning that differed from their university-based teaching clinic experience. Specifically, students felt that SHINE's environment prepared them for clinical practice after graduation. Second, clinical exposure through SHINE enhanced student clinical learning. Third, the patient population at SHINE fostered awareness and empathy surrounding patient circumstances and the diverse patients challenged and improved communication skills, thus developing cultural competence.

Students' learning experiences through SHINE brought to light three considerations for the undergraduate program’s curricular clinics. First, improved cultural competence was not equal among students, and purposeful pedagogical strategies surrounding stigma and empathy

may be required for some students. Second, students appreciated authentic learning experiences resembling practice upon graduation. Including non-operator roles for students within their curricular clinics may fill this niche. However, further investigation is required to understand how students perceive practice post-graduation. Third, freedom from grading enabled students to understand their competency level better and improve their pace appropriately. A reduction in evaluations in areas where students have already attained competence may improve efficiency in patient care.

Chapter 4 – Patient Satisfaction with Access to a Student-Run Free-Service Dental Clinic

Abstract

Background: Low-income Canadians face multi-faceted barriers to dental care including but not limited to cost. The Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic is a student-volunteer operated clinic offering free dental care to low-income individuals. This study aimed to explore patient satisfaction with access to SHINE, patient reported oral health concerns, and alternative care options if SHINE were not available.

Methods: University of Alberta's Research Ethics Board (Pro 00101981) approved the study. Surveys adapted from Penchansky and Thomas' Theory of Access were distributed over 12 weeks to all presenting patients. Survey data was triangulated with field notes collected by the primary researcher. Data was represented using descriptive statistics and variables were compared using Chi-squared tests of independence.

Results: A response rate of 77% was achieved. Patients primarily presented to SHINE for pain (52%) and or broken teeth (30%). Dental hygiene was the third most common oral health concern (25%). In general, patients were satisfied with SHINE but the most dissatisfaction was seen in time spent waiting to attain dental care (11%) and patient ability to attain dental care when needed (16%). Field notes revealed physical accessibility barriers. Dissatisfaction was correlated with attending SHINE without receiving treatment. If SHINE was not an option, 32% reported they would seek care through an emergency department or physician and 27% would not attain oral health care at all.

Conclusion: SHINE is providing preventative and restorative dentistry and could be seen as addressing the need for access to these dental services. Remaining barriers include long waiting times to attain care and clinic capacity to deliver care. It is suggested that a faster triage process may reduce waiting times. Although SHINE cannot increase its capacity to deliver more dental care, referrals to other non-profit dental clinics may improve access to dentistry for patients unable to utilize SHINE. Lastly, access to clinics such as SHINE may reduce the utilization of emergency departments for dental care.

Keywords: Community Dentistry, Free Clinic, Student Run Clinic, Access, Patient Satisfaction, Low-Income, Poverty

Introduction

Canada's privatized approach to dental care creates broadened inequities in society, by privileging the wealthy and those with dental insurance (Moeller & Quiñonez, 2020). Due to the high cost of privatized dental care in Canada, nearly a quarter of Canadians avoided going to a dentist in 2018 (Statistics Canada, 2019). Income and dental insurance are the two most significant predictors of a person seeking dental care (Statistics Canada, 2019), (Dehmoobadsharifabadi et al., 2016). Individuals classified as low-income face the greatest structural and social barriers to care, such as affordability and stigma, and are among the most at risk of poor oral health (Moeller & Quiñonez, 2020; Dehmoobadsharifabadi et al., 2016; CDA, 2017; Wallace et al., 2015). An affordable dental care option is needed to address the oral health issues of this group.

Recognizing the gaps in access to care among marginalized population groups in Edmonton, Alberta, Canada, the Student Health Initiative for the Needs of Edmonton (SHINE) dental clinic was established in 2004. SHINE is a student initiative operated by volunteer undergraduate dentistry and dental hygiene students from the School of Dentistry, Faculty of Medicine & Dentistry at the University of Alberta. It is managed, independently from the School, by the dental student's association and funded via corporate sponsorship and fundraising. Volunteer preceptors who are licensed dentists and registered dental hygienists, supervise the student volunteers who provide patient care.

The primary objective of SHINE is to reduce inequities in dental health by equalizing utilization of oral health services among low-income groups that face significant barriers to accessing care, such as homelessness, poverty, addictions, and poor mental health ("SHINE Dentistry," 2020). Free-of-charge services offered at SHINE include dental hygiene care,

pediatric dentistry, restorative dentistry, tooth extractions and emergency services, such as open and drain endodontic procedures. Despite services being free of charge, evidence suggests that some low-income groups struggle to attend pre-scheduled appointments (Wallace & MacEntee, 2012). Therefore, patients at SHINE are treated exclusively on a walk-in basis and are triaged and managed based on their level of pain and infection. Furthermore, to serve patients as best as possible, dental services are offered on Saturdays, which SHINE patients have deemed optimal (Patterson et al., 2011). Priority is given to youth but dental services are available to all age groups. Demand often exceeds SHINE's capacity and not all attending individuals are able to receive dental care. Often, patients with multiple dental issues or who are unable to be seen due to capacity limits on a given day may have to return to SHINE multiple times to have all their dental issues addressed. A referral process to the University of Alberta School of Dentistry clinic has been established for patient cases deemed too complex to be managed at SHINE. Referred patients aged 16 and under from SHINE to the School of Dentistry are seen free of charge; however, adults may pay full or partial costs associated with receiving care through the School of Dentistry.

A study completed in 2011 about the SHINE clinic, reported patient demographics, patient satisfaction and perceived value of the services (Patterson et al., 2011). Patients participating in this study (58%, 62/106) indicated strong perceived satisfaction and value of the treatment they received at SHINE (Patterson et al., 2011). In 2021, a qualitative study was conducted that sought to gather insight from community health brokers who worked with individuals who may or could be patients at SHINE (Kallal et al., 2021). Health brokers are individuals who work or volunteer at community outreach centres that link marginalized populations to health services, producing beneficial health outcomes (Wallace et al., 2018). The

study sought to gather perspectives from health brokers about the alignment of dental services at SHINE with the access needs of clients accessing services from the health brokers. It was found that health brokers themselves were not aware of the dental services offered through SHINE, and identified potential barriers in accessing care for clients the brokers work with (Kallal et al., 2021).

After completion of the two studies on SHINE, the clinic was relocated but retained within the same inner-city neighbourhood. Our aim was to investigate patient satisfaction with access to the newly expanded and relocated clinic. We used Penchansky and Thomas' (1981) Theory of Access which assumes problems with access influence patient satisfaction. Therefore, we used patient satisfaction as a measure of access to SHINE.

The research questions guiding this study are:

- What oral health concerns are reported by patients attending SHINE?
- How satisfied are patients with access to SHINE?
- What alternatives to dental care do patients pursue when SHINE is not an option for receiving dental care?

Methods

Ethics approval was granted from the University of Alberta's Research Ethics Board (Pro 00101981).

Survey

A survey comprising eight, three-point Likert scale questions, three multiple response (MR) questions and six multiple choice (MC) questions were developed by the research team to answer the research questions (see Appendix 3). The Likert scale questions were modified from Penchansky and Thomas' Theory of Access Patient Satisfaction Questions (Penchansky & Thomas, 1981, page 131). Questions not relevant to SHINE, such as those concerning affordability were removed. The remaining questions were adapted to a grade four reading level to improve readability for participants. Further, Cronbach's Alpha of listwise cases was conducted on the satisfaction questions, which were considered ordinal data, to check for internal consistency.

MR and MC questions were developed by the research team to provide context for patient satisfaction, explore oral health concerns, and explore alternative care options. MR and MC were treated as categorical data and interpreted using descriptive statistics, contingency tables, and Chi-square test of independence where applicable. All analyses were performed using JASP 0.14.1 or Excel (Microsoft), considering a critical significance value $P<0.05$.

The survey was presented to all patients attending SHINE for a 12-week period from October 3 to December 19, 2020 inclusive. Our inclusion criteria included all consenting patients attending SHINE between the aforementioned dates regardless of whether they proceeded to receive treatment or not. Participation in the survey was entirely voluntary and consent was obtained by overt action of completing the survey. Each presenting individual or family was asked to complete a survey. Patients who returned to SHINE in subsequent weeks for follow-up appointments during the data collection period were not asked to repeat the survey.

Penchansky and Thomas' (1981) framework demonstrated that demographics such as age, race, income, and sex did not impact satisfaction. Therefore, we purposefully omitted demographic data collection in the survey. Short surveys yield greater response and completion rates than long surveys (Kost & Correa da Rosa, 2018). However, as SHINE gives priority towards youth, we wanted to investigate how many surveys were completed on behalf of children and how many were on behalf of adults, therefore we recorded counts between the two age groups in the field notes each data collection day for each survey collected.

Field Notes

While distributing surveys the primary researcher engaged with patients awaiting care through SHINE to provide patients an opportunity to verbalise their experience with the clinic and observe any access barriers to the clinic. The researcher was clearly identified and implied consent was sought via a poster affixed to the dental clinic door announcing the researchers presence. The poster further detailed instructions for patients wishing to be omitted. Observations and conversations were documented retrospectively using fieldnotes, within 48 hours. Fieldnotes are notes written to provide contextual data to inform data analyses (Phillippi & Lauderdale, 2018). Although our study purposefully omitted demographics, the field notes documented daily air temperature, patient complaints, and counts of presenting individuals and families. Families were considered as any grouping of people presenting together who considered themselves as a family.

Results

Over the 12 weeks of data collection 183 individuals and families presented to SHINE. Eleven individuals and two families refused the survey. Of the 170 surveys distributed 140 were

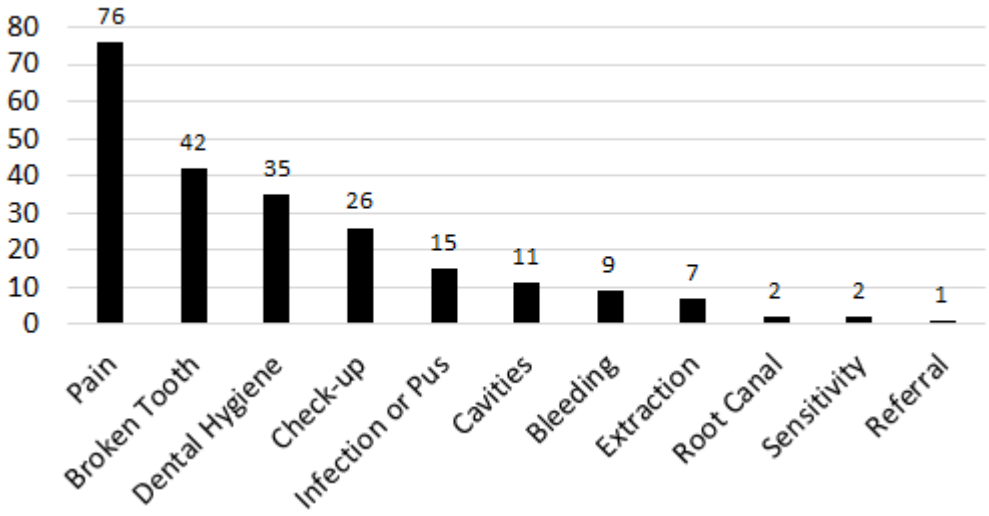
returned, for a response rate of (77%,140/183). However, many respondents skipped questions resulting in different response rates for each question. Survey respondents consisted of individual adults completing the survey on their own behalf (69%, 83/120), adult family members on behalf of children (12%, 14/120), family groups including children and adults (9%, 10/120), family groups consisting of only adults (6%, 7/120), and health brokers on behalf of clients (5%, 6/120).

Oral Health Concerns

Of the 140 respondents, 101 were new patients and 39 had previously attended SHINE on at least one prior occasion, some of whom reported that they had previously attended SHINE without receiving care (21%, 29/140). Patients indicated their primary reason to seek dental care through SHINE was dental pain (54.7%, 76/139), (Figure 1). There were (24%, 33/139) of patients who reported pain alone, while (31%, 43/139) of patients linked the dental pain to other concerns, such as broken teeth. Further, (25%, 35/139) of patients presented for dental hygiene treatment.

Figure 1

Patient Reported Oral Health Concerns



Note: Patients were able to choose multiple responses.

[a]n=129. [b]tallied counts = 229.

Alternative Dental Care Options

Patients were primarily informed about SHINE by their family and friends (52%, 67/128). Online platforms such as Google and social media were the second most common way that patients learned about SHINE (22%, 28/128), and 13% (16/128) were referred to SHINE through health brokers and social workers. When asked where they felt SHINE should advertise its services, the most common response was "where people gather" (73%, 94/169) which included community centers, schools, and food banks. Lastly, 41% (52/128) of patients indicated SHINE should advertise through health brokers and social workers.

If patients were unable to attain dental care through SHINE, 38% (46/121) responded they would seek care through a community dental office (Table 4). Further, 32% (39/121) of patients indicated that they would attend an emergency department or seek care from a family physician. An additional 27% (33/121) of patients would not seek any dental care for their dental concerns.

Table 4

Alternatives for Dental Care

If you could not get dental care at SHINE, where would you go?	Count	Proportion
Community Dentist	46	0.38
Physician or Emergency Department	39	0.32
Different Country	3	0.03
I would not get dental care	33	0.27
Total:	N=121	1.0

Patient Satisfaction with Access to SHINE

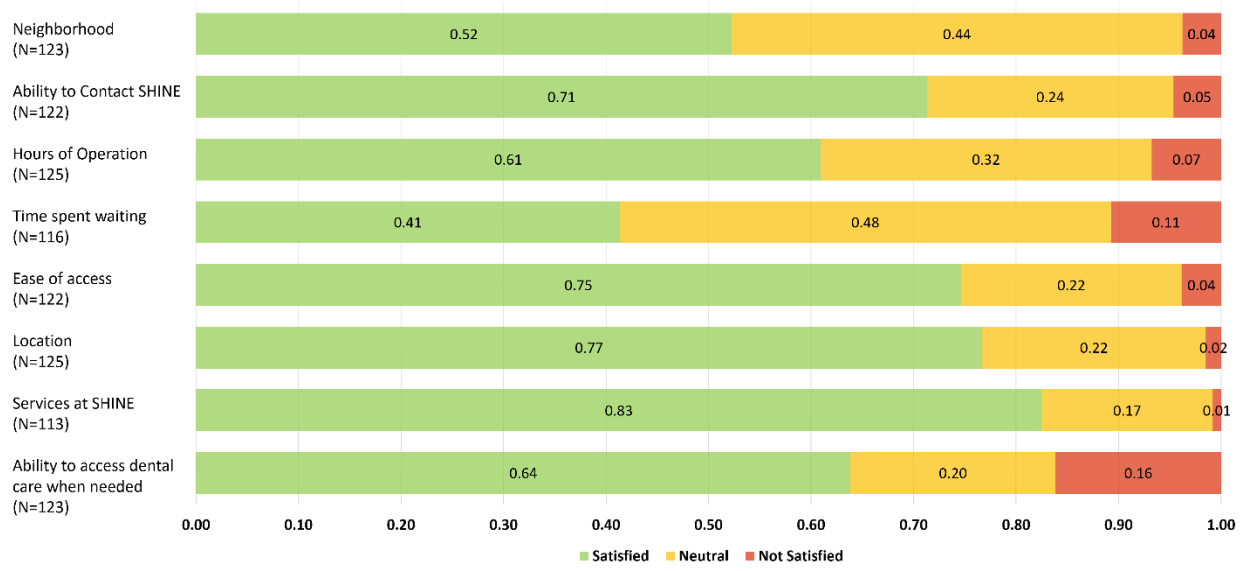
Internal consistency ($\alpha = 0.724$) within the satisfaction questions was deemed adequate. Therefore, we aggregated them by adding the eight item values together for each respondent and interpreted them as a sum score. Penchansky and Thomas' (1981) framework assumes that access questions pertaining to different domains of access should not correlate, however the removal of questions not relevant to SHINE may account for this discrepancy.

Patients were generally satisfied with their ability to access SHINE (Figure 2), with 77.6% (95/125) of respondents indicating that SHINE improved their ability to access dental care, and the aggregated satisfaction scores had a mean of 12.9/16 (SD 1.4), whereby a higher score indicated greater satisfaction. Patients who sought treatment through SHINE but were

unable to receive care that day were significantly less satisfied with access to SHINE compared to those who indicated always receiving care on the day they attended SHINE (χ^2_2=19.5, *P*=0.03). No other statistically significant relational data was found regarding patient satisfaction. Patients reported the most dissatisfaction with time spent waiting to obtain care (11%, 13/116), and their ability to access dental care when needed (16%, 22/123).

Figure 2

Patient Satisfaction with Access to SHINE



Note: Summary of Patient Responses to Survey Satisfaction Questions. Patient responses were recorded on a three-point Likert scale, and proportion of respondents displayed as size of each respective bar.

Field Notes Analysis

The field notes reflected that patients were dissatisfied with the time spent waiting to be triaged. Multiple patients spoke about difficulties they faced standing in line, outside, to access SHINE. Patients reported injuries, disabilities, and medical conditions such as rheumatoid arthritis, which prevented them from standing for long periods particularly in cold weather. There was one small bench outside of the SHINE clinic building entrance but it did not help individuals further back in the line. To account for the cold, some family groups left one family member to wait in line while the rest of the family waited in a vehicle to keep warm. Although many patients complained of the cold, with temperatures fluctuating between -8°C to +5°C during the 12 weeks, this did not seem to impact the number of patients seeking care on any given week. Individuals began lining up as early as 7:00 AM in an attempt to secure an appointment at SHINE. The clinic opened its doors to commence triage at 8:15 AM. Depending on the number of patients presenting to SHINE, the triage process took between 15 - 70 minutes, whereby individuals towards the back of the line waited the longest for triage, often to be told that it was unlikely they would receive treatment that day due to capacity. Once triaged, patients unable to be immediately seated within the clinic due to limited capacity were free to leave but were required to return within 30 minutes of a call back, whereby, patients could provide a phone number and would be called once there was availability for them.

Numerous individuals expressed angst about the wait times to be triaged and seen by a student. Some individuals reported that they could not wait for appointments later in the day or could not return on another week because they had to work. Others indicated that SHINE is difficult to access via public transit and the lack of appointment times and capacity in the waiting room makes it difficult to access the clinic, particularly if they leave and return for a call back.

However, more patients expressed gratitude for SHINE as a service indicating that they would wait as long as required to be able to receive care through SHINE. This was reflected by a count of 36 repeat patients over the course of the 12 weeks of data collection. Some individuals returned as many as four times to continue to address their oral health needs.

Regularly, some patients were referred to the University of Alberta School of Dentistry clinic; however, the primary investigator did not note any referrals to the Boyle McCauley dental clinic that operates Monday through Friday in the same location as SHINE. On days where the line-up for SHINE was above the capacity to receive treatment that day, the primary investigator informed patients about the Boyle McCauley clinic which offers dental care on a sliding fee scale based on income. Many patients were not aware of this clinic. A few patients were happy with an affordable option that meant they would not have to wait in line at SHINE. However, many more preferred to wait in line for the free care offered through SHINE.

Discussion

Populations that have the greatest need for dental care face the most structural barriers (Moeller & Quiñonez, 2020; Dehmoobadsharifabadi et al., 2016). SHINE is a laudable advocacy initiative in providing dental care for marginalized individuals by alleviating the financial barrier for low-income groups and tailoring itself to meet the needs of these people. SHINE is centrally located near other community outreach services, which literature shows is an asset for access (Kallal et al., 2021; Wallace et al., 2013). SHINE operates on Saturdays as SHINE patients indicated it was the most convenient time (Patterson et al., 2011). Lastly, SHINE provides walk-in dental services, as the evidence shows appointment-based care does not work for all low-income groups (Wallace et al., 2015; Wallace & MacEntee, 2012). Although there is evidence

for providing dental care in outreach clinics on a walk-in basis, patients expressed dissatisfaction with resulting wait times to attain care. With the current system there were no unscheduled appointments or cancellations enabling SHINE to maximize the number of patients treated, which is important as demand for SHINE already exceeds capacity.

Of note, surveys were distributed while SHINE had protocols in place for the COVID-19 pandemic. Social distancing restrictions within the waiting room meant that the wait location was impacted. Patients unable to be seated immediately awaited triage outside the building and were dismissed and called back once there was a clinical operatory available for them to be seen. Loss of space in the waiting room may have created a barrier for individuals without cell-phones potentially impacting who utilized SHINE. Those unable to respond to their call-back were passed over and the next individual was called-in. Prior to COVID-19 protocols, the waiting room held more patients and prioritised seating for those without cell-phones (SHINE Dentistry, 2020).

Patients in this study reported oral health concerns that align with previous studies where it was found that pain is the primary motivator for patients to seek care (Kallal et al., 2021; Wallace & MacEntee, 2012). Although patients were satisfied with access to SHINE for such conditions, because of extended wait times and capacity limits, some were unable to attain care and indicated that they would seek dental care through a physician or emergency department (32%). Emergency departments, though easily accessible in Canada, are ill-equipped to manage dental concerns (Figueiredo et al., 2017). Emergency departments are not staffed with dental professionals and treatments often resort to pharmacological interventions to relieve pain and fail to resolve underlying dental problems and potentially result in repeated visits (Figueiredo et al., 2017). The benefit of patients seeking care through a community dental office, such as SHINE,

rather than an emergency department or physician is the clinic's ability to provide care beyond pain management and address the primary cause of the oral health concern (Wallace et al., 2013).

The first step to ensuring community members have improved access to care and diverting people from accessing urgent care through emergency departments is to increase awareness of existing services through community dental clinics, like SHINE. Our data showed that the primary channel patients were informed of SHINE was through family and friends. This shows we still need better awareness in the community. Despite patients' reporting that advertising through health brokers and social workers (41%) was desirable, the number of patients actually referred by them was limited at 12%.

Three recommendations to improve accessibility can be drawn from the study findings. First, SHINE could strategize ways to improve wait times and triaging logistics to reduce the time patients spend waiting outside, particularly in colder months. Second, expanded discussion with health brokers and social workers who engage with community members may further an understanding of barriers in the referral process and increase awareness of SHINE for the intended population. Third, there is more demand for affordable dental care than SHINE can accommodate. SHINE does refer complex patient cases to the School of Dentistry; however, students could consider promoting alternate outreach dental facilities in the community to patients (e.g. Boyle McCauley Dental Clinic). By directing patients through an effective referral process to alternate clinics, patients may receive more timely care when needed and may also further reduce the burden on physicians and emergency departments. However, many non-profit community dental clinics face similar issues as SHINE with capacity (Wallace et al., 2013),

which highlight the existing shortage of affordable dental care options (Wallace et al., 2013; Moeller & Quiñonez, 2020).

Limitations

Due to the COVID-19 pandemic, patients had to complete surveys in line while waiting outside of the clinic prior to receiving treatment. This measure was taken to reduce time spent in the clinic which was associated with higher risk of COVID-19 transmission. Many patients had not previously received treatment at SHINE, which may have impacted their responses. Furthermore, patients often completed their survey prior to being triaged and would not have known whether they would receive care that day. Satisfaction with SHINE may be overrepresented. There is evidence of acquiescence or social desirability bias within patient satisfaction surveys irrespective of question content (Dunsch et al., 2018).

Conclusions

Patients were generally satisfied with access to SHINE which indicates that it is generally meeting patient needs. Remaining barriers include wait times and limited capacity to receive treatment. The primary reason patients presented to SHINE was dental pain. However, dental hygiene care was the third most common oral health concern which may indicate a desire for preventative dentistry through SHINE. If unable to attain care through SHINE, 32% of patients would seek care through a physician or emergency department. Therefore, access to dental clinics such as SHINE may reduce the utilization of emergency departments.

Beyond the removal of financial barriers in free-of-charge clinics such as SHINE, improved awareness of such services and understanding how to best refer patients from the

community to these services is vital. Additionally, evaluating logistical processes for wait times and triaging may contribute to increased accessibility.

Chapter 5 – Overall Summary and Conclusion

This chapter summarizes our contributions, addresses limitations, and provides suggested future research areas. Following our constructivist approach, we sought to explore the experiences of patients and volunteer undergraduate dental and dental hygiene students at SHINE through multiple perspectives; namely, health brokers, students, and patients.

Summary of Contributions

Student participation at SHINE was driven by their desire to help low-income groups attain dental care, and by student desire to learn from the volunteer experience. SHINE provided a unique environment for learning where students developed clinical skills and cultural competence in a collaborative environment that is free from formal evaluations that are part of undergraduate education. Understanding student experience in an informal learning environment such as SHINE provides context for student values and motivations that may be implemented into formal learning contexts.

Patient reported oral health needs enabled us to understand why patients seek care through SHINE. There was unanimity between health broker interviews, patient surveys and student focus groups that pain is the most prevalent oral health concern leading patients to access SHINE, which is further supported in the literature (Wallace & MacEntee, 2012). Dental hygiene therapy was the third most common sought treatment, and 9% of patients sought dental hygiene exclusively from pain or other needs. Health brokers indicated a need for dental hygiene but further indicated that patients would not likely access care unless they were in pain. Wallace & MacEntee (2012) indicate that low-income patients desire preventative care such as dental hygiene therapy but they consider it a luxury rather than a necessity due to the cost barrier. Often

voluntary clinical services lack preventative care such as dental hygiene (Mouradian, 2006), but our data showed that SHINE was providing such care that may have otherwise been unattended to. Beyond preventative care, when patients were unable to attain care through SHINE for urgent conditions, they reported that they would either seek care through physicians or emergency departments (32%), who are ill-equipped to handle dental concerns (Figueiredo et al., 2017), or would not attain care at all (27%).

While exploring the patient experience at SHINE the focus was on access. Although attending patients were generally satisfied with access to SHINE, capacity and time spent waiting to attain care were identified as barriers. Further, it was concluded that different low-income groups have different access needs. SHINE, being free, is affordable for everyone; however, it was not an equally acceptable nor accessible dental care option to all low-income groups. Interviews with health brokers revealed that not all prospective patients, specifically new immigrant families, would be comfortable accessing SHINE due to the neighborhood where the clinic was located. However, students felt that SHINE's environment was an asset to making patients feel more comfortable in a dental setting, emphasizing cultural diversity within the clinic which they felt made the clinic feel more welcoming to diverse clientele. Between the time health broker interviews and the student focus groups were conducted, the clinic was relocated to a new facility, 550 meters away, within the same neighborhood. This relocation may have resulted in the discrepancy of perceived accessibility of SHINE for patients.

Ultimately, different people have different access needs. It is unlikely that one clinic can accommodate the access needs of every individual as there will always be someone who is not considered (Zembal, 2019). Therefore, understanding the population that SHINE aims to serve

and working to remove specific barriers targeted for this population is needed if we are to fully improve accessibility.

Limitations

Demographic information was not collected as part of our study, a decision made based on previous work using Penchansky and Thomas' Theory of Access and the body of evidence suggesting that short surveys yield greater response and completion rates (Kost & Correa da Rosa, 2018). Further investigation is required to understand who is attaining care through SHINE, and whether we are reaching the intended population.

A further limitation is that patient surveys and student focus groups occurred during the COVID-19 pandemic. It is unknown to what degree pandemic protocols impacted our data collection. In addition to wait room capacity, wait times for receiving dental care, and treatments provided may have been impacted by such protocols, which then may have impacted patient satisfaction with access. Further, although there is support for use of virtual focus groups in research, there is evidence that this may influence who participates (Rupert, et al, 2017; Lathen & Laestadius, 2021).

Conclusions

In summary, there are four overarching conclusions. First, SHINE is improving access for low-income groups although capacity remains a barrier. Second, improving the triage process may be a good quality improvement strategy for SHINE to consider. Third, student volunteer experiences through SHINE may inform undergraduate dental and dental hygiene education. Fourth, further investigation is required to examine who is attaining care through SHINE, and whether SHINE is reaching its target population.

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Appendices

Appendix A

Student Focus Group Topic Guide

Introduction and Purpose of Interview

Hello. My name is **Maria.** I'd like to start off by thanking you for taking time to participate today. We'll be here for about **60-90 minutes**.

A little about myself:
I'm a dental hygienist who graduated from the University of Alberta in 2014. I have worked in general dentistry as well as a periodontic clinic. In my career I have witnessed a lot of financial barriers to receiving dental care. This inspired me to look more into access to dental care. I have been fortunate enough to be accepted for a MSc, where my thesis project explores how SHINE contributes to students and patients alike.

The reason we're here today is to gather your experiences and opinions volunteering at SHINE.

Guidelines

1. You don't have to answer every single question, but I'd like to hear as much about your experiences as possible.
2. I would like to remind you to respect your peers and keep everything discussed today confidential.
3. We stress confidentiality because we want you to feel free to comment without fear your comments will be repeated later and possibly taken out of context.
4. There are no "wrong answers," just different opinions and experiences. Say what is true for you.
5. Let me know if you need a break.
6. I want to remind you that we are recording this focus group.
7. Are there any questions before we begin?

Questions

1. How often have you volunteered at SHINE?
2. Tell me about SHINE?
    a. What are the most frequent types of procedures you do there?

    b. How is it different or similar to any service-learning rotations that are part of your educational program?
3. What motivated you to volunteer at SHINE?
    a. How are you helping?
    b. How do you know you are serving inner-city or low-income groups?
    c. What is your definition of access?
        i. How is increasing access bettering the community?
    d. Why do you think these people need to come here?
    e. Why do you feel you are addressing a gap in access to care?
    f. How do you feel you are addressing a gap in access to care?
        i. What would you consider barriers?
        ii. How do you determine the availability of services?
    g. What is the importance of you participating in SHINE?
4. How do you feel that SHINE impacts/contributes to the community?
5. What did you expect the experience would be like?
    a. How has the experience been in comparison to what you thought it would be?
    b. Describe the population you expected to see at SHINE
        i. How is the actual population presenting to SHINE different or similar to what you expected?
        ii. For those of you who have volunteered in the past, have the demographics changed?
            1. Since COVID
            2. Since Change of SHINE location
6. Provide a statement that describes the most significant impact of your experience from volunteering at SHINE
7. Describe any experience or interaction that caused you to either be more inclined to volunteer or deter you from volunteering at SHINE.
    a. (Note to interviewer: probe for more if needed)
8. Evaluate volunteering at SHINE as a learning experience
    a. What has SHINE added (or not) to your learning in your program?
        i. (Further probe: Can you describe a specific example?)
    b. Provide a statement on competencies to be gained at SHINE
9. Where does your priority lie between your education and improving access to oral health?
    a. Rate it on a scale of 1-10
        i. Why?
        ii. What would it take to get you closer to the other end of the scale?
    b. If the environment at SHINE, in terms of learning and exposure, was the same as in KEC, how would your rating look?
        i. Would you still volunteer?

Appendix B

Student Focus Group Theme Table

Theme	Subtheme	Codes
Learning Environment		
	Helps Speed and Efficiency	Faster Pace See Patients Back to Back More Intense Prepares you for Private Practice More Care to More People
	Autonomy	Student -run No grading Freedom to make mistakes Greater responsibility Challenge
	Prepare Them for Private Practice	Faster pace - pace of private practice Less Time on Assessments Like Private practice
	Problem solving	Think on the spot Putting out Fires
	Sense of Community	Opportunity to meet peers Be involved with something Network Fun
Learning Enhancements		
	Broadened Clinical Exposure	Broadened Clinical Exposure Radiographs Admin/Triage Extractions Learn to navigate language barriers Exposure to new client base More Complex Cases Dentrix Learn Dif. Tools Get to know the dental clinic Reinforce what you learn at KEC

		More Complex Cases = Better learning Sterilization Patient Education Learn from peers - watch procedures performed by peers
Learning from patients		
	Makes Students Aware of Dental poverty	Realize Dental is Inaccessible Giving back to the community Want to provide Access Remember Impact of Dentistry on those who lack access Patients depend on us Humbling Experience - generate Empathy Want to help others
	Teaches Patient Care and Interactions	Better listener - better dentist Learn to manage negative patient interactions Communication with Patients Build relationships with patients Time to get to know patients
	Other	Diverse demographic Shapes views Rewarding Grateful Clients

Appendix C

Patient Satisfaction Survey

1. Why are you here today?
   a. Pain
   b. Check-up
   c. Cleaning
   d. Infection or pus
   e. Bleeding
   f. Broken tooth
   g. Other
      If other, please specify: _____

2. Have you been here before?
   a. No, this is my first time
   b. Yes, 1-2 times before
   c. Yes, 3 or more times before

3. How satisfied are you with your ability to get dental care when you need it?
    Satisfied
    Neutral
    Not satisfied

4. How satisfied are you with the services offered at SHINE?
    Satisfied
    Neutral
    Not satisfied

5. Has SHINE improved your ability to obtain dental care?
   a. Yes, a lot
   b. Yes, a little
   c. I don't know
   d. No

6. Have you ever come to SHINE and **not** been able to receive treatment?
   a. Yes, I was referred somewhere else

b. Yes, I have been turned away before
c. No, I always receive treatment when I come

7. How satisfied are you with the location of SHINE?

 Satisfied

 Neutral

 Not satisfied

8. How easy is it for you to get to SHINE?

 Satisfied

 Neutral

 Not Satisfied

9. How satisfied are you with how long you must wait to receive dental or dental hygiene care at SHINE?

 Satisfied

 Neutral

 Not satisfied

10. How satisfied are you with SHINE's hours?

 Satisfied

 Neutral

 Not satisfied

11. How satisfied are you with how easy it is to contact SHINE?

 Satisfied

 Neutral

 Not satisfied

12. How satisfied are you with the neighbourhood SHINE is located?

 I like the neighbourhood

 Neutral

 The neighbourhood makes me uncomfortable

13. How did you hear about SHINE?
    a. Friends
    b. Family
    c. Health Broker
    d. Social Worker
    e. Other

        If other, please specify: _____

14. Where do you think SHINE should be advertised?
    a. Health Brokers
    b. Community centers
    c. Social Workers
    d. Food Banks
    e. Other

        If other, please specify: _____

15. If you could not get care at SHINE, where would you go?
    a. A dental office in my community
    b. A doctor's office
    c. An emergency department
    d. Nowhere, I would not seek care
    e. Other

        If other, please specify: _____

16. Who is seeking treatment today?
    a. Myself
    b. My children – How many? _____
    c. Other

        If other, please specify:

        _____

17. If you are completing the survey on behalf of someone else, who is completing the survey?
    a. Parent or Guardian
    b. Grandparent
    c. Translator

d. Health Broker
e. Other

If other, please specify: _____

Appendix D

Field Note Protocol

Place: SHINE
Date: (_____) **Time Start:** **Time End:**
Outside temperature at start time:
Number of people in line at start time:
Number of people seeking treatment on this date:
Number of people treated:
The focus of the observation:

- **Triage protocol and how patients are accepted and refused**
- **Proportion of individuals seen vs. those not seen**

Observer: Maria Kallal

	Descriptive Notes	Reflective Notes	Count
Triage Process:			Number of Hygiene Patients Treated: Number of Patients Treated in Dentistry:

General comments, insights:

Appendix E

Survey Statistics

Appendix E.1

Cronbach's Alpha for Internal Consistency in Satisfaction Questions

	Cronbach's α	Mean	SD
Point estimate	0.724	1.609	0.180
95% CI	0.651 – 0.785		

Item	If item dropped Cronbach's α	Mean	SD
How satisfied are you with your ability to get dental care when you need it?	0.735	1.485	0.756
How satisfied are you with the service offered at SHINE?	0.694	1.822	0.385
How satisfied are you with the location of SHINE?	0.705	1.782	0.461
How easy is it for you to get to SHINE?	0.695	1.733	0.527
How satisfied are you with how long you must wait to receive care at SHINE?	0.673	1.297	0.671
How satisfied are you with SHINE's hours?	0.655	1.535	0.641
How satisfied are you with how easy it is to contact SHINE?	0.724	1.703	0.539
How satisfied are you with the neighborhood SHINE is located in?	0.681	1.515	0.576

Note: Of the observations, 101 complete cases were used.

Appendix E.2

Contingency Table and Chi-Square Test of Independence for Patient Satisfaction with Access and Previous Attendance.

Patient satisfaction with SHINE	Have you been here before?		
	No	Yes	Total
6 – least satisfaction	1	1	2
7	2	1	3
8	3	0	3
9	3	3	6
10	7	0	7
11	4	3	7
12	9	3	12
13	6	5	11
14	11	5	16
15	9	4	13
16 – most satisfaction	11	10	21
Total	66	35	101

Chi-Squared Test for Satisfaction and Previous Attendance			
	Value	df	p
X^2	9.133	10	0.519
N	101		

Appendix E.3

Contingency Table and Chi-Square Test of Independence for Patient Satisfaction with Access and Previous Attendance Without Receiving Treatment.

	Have you ever come to SHINE and NOT been able to receive treatment??		
How Satisfied are Patients with Access to SHINE	No, I always receive treatment	Yes	Total
6 - least satisfied	0	2	2
7	0	3	3
8	0	1	1
9	3	3	6
10	5	0	5
11	3	1	4
12	4	3	7
13	6	2	8
14	6	6	12
15	8	1	9
16 - entirely satisfied	13	4	17
Total	48	26	74

Chi-Squared Test for Satisfaction and Attendance Without Treatment

	Value	df	p
X^2	19.538	10	0.034
N	74		