BURN INJURIES IN UNDERSERVED COMMUNITIES

PROGRESS STATUS REPORT

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LAND ACKNOWLEDGEMENT

I am grateful to live and work on this sacred and beautiful land — Stó:lō Téméxw, the unceded ancestral and traditional territory of the Stó:lō Peoples.

PROJECT NAME

Burn Injuries in Underserved Communities

Two Key Population: First Nations communities and community members living in unstable British Columbia housing.

PROJECT DETAIL

Burns are preventable injuries, and despite considerable progress in lowering rates of burn fatalities in high-income countries such as Canada, burns remain prevalent in communities and populations with social and material disadvantages. The World Health Organization describes burn injuries as a global public health problem with a significant cause of morbidity and mortality. Globally, approximately eleven million burn injuries occur annually, with over 300,000 deaths 1,2. Severe burns involving injuries to deeper tissues, muscle, or bone are a leading cause of morbidity, including prolonged hospitalization, disfigurement, and disability, often with resulting stigma, rejection, and psychosocial concerns. Indigenous Peoples, individuals who experience homelessness, populations with lower socioeconomic status (SES), racialized people, and groups who experience adverse social determinants of health are at greater risk of burns, sustain more severe injuries, and carry the most significant burden of injuries. This study focuses on two key populations: First Nations communities and people who live in unstable housing.

Little knowledge exists about why and how burn injuries affect the Indigenous Peoples; moreover, the ongoing impacts of colonial violence are largely ignored. In Canada, Indigenous Peoples are over five times more likely to die in a fire, and the number increases to over ten times for First Nations People living on reserves. Numerous fire reports have highlighted that First Nations (FN) communities suffer higher rates of fire-related fatalities. These reports draw attention to the association between fire-related mortality and morbidity and the long history of under-resourcing in FN communities in Canada. Structural and systemic factors are associated with the disproportional fatality rate, including jurisdictional neglect, living conditions on reserve, and the lack of fire safety training and equipment. Yet, in the scientific literature, alcohol consumption and substance use are cited as the leading causes in explaining the higher rates of fire-related mortality and morbidity in Indigenous Peoples, reflecting a lack of structural analysis and the influence of racist stereotypes.

Individuals who live in unstable housing such as single-room occupancy (SRO), homeless encampments or on the streets are at high risk of suffering intentional (acts of violence) and

unintentional burn injuries resulting from portable stove incidents, bonfires, and flame-related substance use. Insufficient housing and shelters drive individuals to seek refuge in tents. In winter, accidental fires in homeless encampments are common. Individuals who experience homelessness are more susceptible to severe burn injuries and have worse health outcomes with greater healthcare utilization because of existing challenges such as substance use, mental health concerns, discrimination, and stigmatization. Canada is facing a growing homelessness crisis, with an estimated 235,000 people experiencing homelessness yearly. Within Vancouver, BC, there are about 3634 people who are currently homeless. However, it is unknown how burns affect individuals who experience homelessness in Canada or if they have differing outcomes from their injuries based on their social and material disadvantage.

Burn injuries are complex and often result in long-term health complications that continue years after hospital discharge. Burn survivors experience a multitude of physical, psychological, and social challenges. Efforts to improve patient outcomes include treatments to address the limited range of motion, loss of muscle strength, persistent psychological trauma, and chronic pain. Clinical research in burns care has dramatically reduced mortality and shifted knowledge development towards decreased morbidity.²⁰ Still, the concerns and challenges of populations most affected by burn injuries, described as underserved in this research, are not addressed in the scientific literature.

The lack of patient-reported data leaves a gap in information for creating equitable burns care programs. The structural, systemic, and broader social determinants of health are largely overlooked in the scientific burns literature. Often lower income and education levels are used to explain the incidence and prevalence of burn injuries without attention to the social determinants of these variables. For example, racialized groups with SES disadvantage are significantly impacted by burn injuries and suffer poorer health outcomes. ^{15, 16, 17} However, factors other than SES influencing health and healthcare experiences for ethnic minority groups (e.g., racism) are under-explored in the literature. Further, race as a substantial risk factor is habitually used to explain racial differences in burn injury rates. ¹⁸ Still, little attention is given to how systemic racism and structural violence can influence disease/injury onset, disease burden, and poorer health outcomes. Emphasizing the genetic causes of burn injuries and inappropriately using race as a biological concept can lead to biomedical solutions and perpetuate scientific racism. ¹⁹

The presence of inequities is overlooked in burns research and policies because data repositories lack contextual information to accurately capture the structural conditions that make some populations more susceptible to burns. Applying an equity lens in burns/fire prevention scholarship will inform a policy/practice-oriented approach to equity-oriented interventions and equity-driven systems transformation.²¹

RESEARCH PURPOSE

Research that seeks to include burn survivors' perspectives and solutions will be a critical step toward redressing inequities so that groups of people who carry the greatest burden of burn injuries can inform improvements in policy and practice. In Canada, burns research generally remains confined to incidence and prevalence studies without analyzing why underserved communities remain at risk. Policymakers and practitioners design approaches to burns care based on scientific knowledge from a positivist paradigm of a predominantly western biomedical framing. The predominant practice of generating knowledge in this way has obscured the broader issues of oppression, marginalization, structural violence, and determinants of health that create disparities in burns.

The overarching research question driving this study is, "What shapes inequities in burns care"? Explicitly situated within Canada, the equity-oriented research questions will focus on underserved populations who have suffered burn injuries at the intersection of racism, discrimination, stigmatization, poverty, and inequitable social determinants of health, including access to income, housing, health, and social care. The applicant will also garner the perspectives of community leaders/service providers responsible for fire/burns/social care service delivery in underserved communities. The following questions will guide the research aims and objectives:

- 1. How do contextual factors such as social, cultural, political, historical, and economic factors influence burns risks and care experiences?
- 2. How do underserved individuals/populations understand burns risks and experience burns care?
- 3. How do underserved individuals/populations access health and social support to manage their burn injuries?
- 4. What services or strategies could reduce burn risks and optimize care for underserved populations?

RESEARCH METHOD: CRITICAL ETHNOGRAPHY

In keeping with the ethnographic tradition, participant observations, qualitative interviews, and document analysis are this project's primary data sources. Critical Ethnography is a qualitative research method that arises from a need to highlight social structures contributing to inequities, especially when values related to social status are naturalized over time and accepted by society as reality.²⁵

Participant Observation/Interviews with	Interviews with burn	Document Analysis
community leaders and service providers Conduct participant observation in one (n=1) First Nations Community in the Fraser Valley—interview three (n=3) community leaders and service providers serving First Nations communities. Conduct participant observation with the VFRS during daily interactions, working in communities with high fire risk (unstable	Interviews with burn survivors (Recruit 4 participants from First Nations Community in the Fraser Valley, 4 participants who live in unstable housing (during participant observation), and 10 from other recruitment sources. (N=18)	Relevant documents will be identified and analyzed during participant observations and interviews
communities with high fire risk (unstable housing). Interview four (n=4) leaders working in VFRS.	sources. (N=18)	

The purpose of participant observation in this study is to gain a nuanced understanding of burns risk and injuries in underserved communities by focusing on the *why, how, when, and what*. Catherine's community partners have negotiated and granted access to the field. Observations will include shadowing community leaders/service providers as they perform their daily tasks and responsibilities from the identified sites. A total of 60-80 hours of observation in two communities will be conducted (this number could increase depending on accessibility and as relationships flourish). The observation sites will also serve as a source of participant recruitment. During these observations, Catherine will conduct an in-depth interview with the community leaders/service providers in a place of their choosing. The applicant will meticulously follow the established research protocol in this study in a respectful, unobtrusive, and culturally safe way.

Adult burn survivors in Canada who have experienced life-altering changes from their injuries but also had to endure additional challenges due to racism, discrimination, stigmatization, access to income, housing, health, and social care will be the population of focus. Participants would be eligible if they are: a) >18 years of age or over, b) able to communicate in English, c) sustained burn injury and received care within the last ten years. Additionally, community leaders and service providers who serve in communities impacted by significant fire incidents will be observed and interviewed because they can provide unique perspectives about what shapes inequities in burns care. Examples of community leaders and service providers include community heads from the Indigenous communities, by-law officers who patrol homeless encampments, and firefighters who have experience dealing with fires in neighbourhoods with social and material deprivation. The applicant will recruit burn survivors from these communities during participant observation. The recruitment poster will be shared on social

media with the Canadian burn survivors' group and distributed to health centers, community centers, homeless shelters, fire departments (rural and urban), and employment and assistance departments. The NIFSC and Indigenous Services Canada have offered to share the study information and recruitment poster in their monthly newsletter. Both purposeful and snowball sampling will be used to recruit participants.²⁶

Qualitative interviews will be conducted with burn survivors to elicit in-depth information about research questions 1-4, with the overarching question of what shapes inequities in burns care. Other forms of data collection (i.e., demographic data, burn injury timeline, types of burns, mechanism of injury, hospitalization, and burns treatment data) will be used along with interviews to provide a well-rounded collection of information for data analyses. A descriptive, structural, and contrast questions format supported by a topic guide will elicit information on burns risk, care, and experiences.²⁷ The participant will conduct document reviews on existing public records such as organizational or institutional reports, press releases, news reports, healthcare reports related to burn injury, and policies (health and fire-related). Any personal documents provided by the community members and participants (i.e., incident reports, reflections, journals, and newspapers) will be reviewed. The document review aims to add context, give meaning to the observational data, and illuminate any structural barriers pertaining to policy and practice. The applicant will mainly carry out data collection.

Data analysis will be an iterative process. Field notes, qualitative interview transcripts, and relevant document text will be organized and sorted using NVIVO^{QSR}. The applicant's theoretical perspectives will inform the data analysis and clarify the findings, paying attention to how power structures and systems of oppression at the institutional, social, and interpersonal levels operate in shaping the everyday experiences of burn survivors in underserved communities. Thorne's interpretive description analytic process will be used in this project. The analysis will explore possibilities of meaning through an inductive reasoning process rather than examining the data for "fit" .²⁸ Coding will be used to organize the data and stimulate constant comparison among data from field notes, document analysis, and interviews. The logic used for this analysis will be recorded robustly, allowing the creation of an audit trail.²⁸ Coding will be an active process wherein different angles of vision are explored through experimenting with the data; coding will be used as a technique and not an endpoint in this process.²⁸

Critical self-reflexivity, researchers' and participants' positionality, significant contribution, meaningful coherence, and ethics will be markers of "good" qualitative research. ^{29,30,31} In ethnographic tradition, critical self-reflexivity and positionality are essential elements influencing knowledge collection, representation, and production. Critical self-reflexivity creates space for perspectives to emerge from the bottom-up by disrupting power relations embedded in research and knowledge production processes. Critical reflexivity disrupts power relations

through interrogating taken-for-granted assumptions and allows space for research to be understood as a dynamic phenomenon that can transform researchers and participants.³¹

Catherine will acknowledge her researcher's positionality by constantly assessing the social position and subjectivities of the self. This consciousness offers a parallax of perspectives and ensures these different angles of visions are not misrepresented through a shallow and monocled perspective, thus ensuring participants' perspectives are not distorted. Attention to power and privilege²⁹ are critical to this project. If power structures remain unaddressed, harm to the research participants cannot be confronted unless the mechanism of privilege is unpacked and understood.³²

PROJECT OVERVIEW

This project is part of Catherine Liao's Ph.D. research. In 2020, Catherine connected with Len Garis, Director of Research NIFSC, 2020 about her Ph.D. research. Len Garis was instrumental in mobilizing Catherine's research ideas and finding ways to support her. This is how the collaboration started, and the NIFSC established a memorandum of understanding (MOU) with Catherine in 2021 as a student researcher.

From 2020-2022, Catherine was focused on completing the mandatory courses as part of the Ph.D. program at UBC. On October 12th, 2022, Catherine successfully defended her candidacy exam. This means that Catherine's Ph.D. committee members have approved her research proposal, and she can progress to the ethics application stage.

Since November 2022, with the help of Len Garis, Catherine has been connecting with various community partners such as the First Nations Emergency Services of BC (FNES), the Vancouver Fire Rescue Services (VFRS), the Surrey Fire Rescue Services (SFRS), and the Vancouver Police Department (VPD). The reason for these connections is to establish support when Catherine embarks on her data collection, mainly working with community members who live in unstable housing.

In February 2023, Catherine was fortunate to connect with Grand Chief Doug Kelly from the Sto:lo Tribal Council. Grand Chief Doug Kelly was instrumental in helping Catherine forge relationships with the First Nations leaders and organizations in the Fraser Valley, BC. The First Nations communities in the Fraser Valley will serve as a site for Catherine's project. The scope of this project is small because this is a Ph.D. project, but Catherine hopes to apply the findings from this research to inform a large-scale study that is Canada-wide after her Ph.D.

Catherine will submit her ethics application on March 31st, 2023,

STRENGTHS

Catherine is committed and dedicated to this work. She has more than a decade of experience working with communities in Sierra Leone, West Africa, in establishing a burns and fire prevention service through community peer health promotion and education initiatives. Recently, Catherine was instrumental in securing funding for Sierra Leone's first burns unit. She is now working on mobilizing burns service by collaborating with colleagues across West Africa and the United Kingdom.

Catherine is a mature student with diverse professional skills and attributes and extensive experience. She promotes cultural safety and humility in all her work, and these principles have helped Catherine establish a relationship with communities in a short time. Catherine has support from her mentors such as Len Garis, Grand Chief Doug Kelly, Lois Budd (BC Burns Fund), her supervisor, Dr. Colleen Varcoe (UBC Professor), and her committee members (Dr. Ian Pike and Dr. Helen Brown- UBC Professors).

Catherine has also garnered support from the community partners such as the NIFSC, the VFRS, the VPD, the Sto:lo Tribal Council, the First Nations Health Directors- Fraser Salish, and the First Nations Health Authority- Fraser Salish.

WEAKNESSES

Catherine works full-time as a professor in nursing at the University of the Fraser Valley (UFV). Juggling full-time work and full-time studies has been challenging. Nonetheless, Catherine has managed to meet her priorities and fulfil her commitments in both her professional and student life. However, Catherine is contemplating resigning from her position at UFV and focusing on her Ph.D. research full-time, especially when data collection begins.

OPPORTUNITIES

Catherine is resourceful and always looking for opportunities to enhance her research skills. Catherine has a lot of support from the First Nations communities in the Fraser Valley. She hopes to foster these relationships because Catherine is committed to promoting equity and social justice for First Nations Peoples and people who have been historically excluded and marginalized. Catherine is also grateful for the opportunities and support from the NIFSR, especially in mobilizing this work as a doctoral student.

THREATS

Catherine is aware that doing research with First Nations communities and community members who experience social and material deprivation can be sensitive. Catherine will evaluate ongoing threats and ensure her study does not perpetuate any harm to the participants and the communities at large.

ACKNOWLEDGEMENTS

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Catherine has received the following funding (in CDN \$) for this project as a doctoral student:

- UBC Public Scholars Award \$3000
- BC Burn Fund Graduate Award \$2000
- UBC Public Scholar Renewal Award \$3000
- UBC, School of Nursing, Internal Grant Award \$3000

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