Influences of Interactions with Health and Social Care Systems Following the Experience of Traumatic Brain Injury (TBI) on Residential Instability

Ramin Banimahdi

Thesis submitted to the University of Ottawa

in partial fulfillment of the requirements for the

Doctorate in Philosophy degree in Rehabilitation Sciences

School of Rehabilitation Sciences

Faculty of Health Sciences

University of Ottawa

Preface

The following research was approved by the University of Ottawa Research Ethics Board (H-11-23-9598, H-03-24-9814). Ramin Banimahdi (RB), the named doctoral candidate of this dissertation, participated in all aspects of the study's conceptualization and design and is responsible for the integrity of the data and its interpretation. RB was the lead for all aspects of the dissertation studies, including data collection and analysis, and drafting each manuscript.

ABSTRACT

Background: Traumatic brain injury (TBI) is a leading cause of death and disability around the world. Post-TBI, individuals might experience cognitive, emotional, behavioural, physical, and psychosocial problems. These neurologically driven changes can hinder an individual's ability to gain and sustain employment, lead to income loss, and might influence individuals' ability to maintain their stable housing, leading to residential instability and an increased risk of homelessness. To address their health and housing needs, individuals with TBI benefit from long-term interactions with health and social care systems. Despite these interactions, many individuals go on to experience housing instability and homelessness.

Purpose and Objectives: The overall purpose of this research was to better understand how the interactions of individuals with TBI with health and social care systems influence their housing stability. The specific objectives were: 1) to identify the challenges experienced by the homeless or unstably housed population related to TBI, along with the recommendations for addressing them; 2) to better understand the personal experiences of individuals with TBI regarding their interactions with health and social care systems and how these interactions influenced their residential stability; and 3) to describe how a non-profit organization providing community services to individuals with TBI addresses housing needs, prevents homelessness, and supports stable tenancy.

Methods: To meet my first objective, I conducted a scoping review in accordance with the Joanna Briggs Institute (JBI) methodology to understand how TBI influences the experiences of individuals who are homeless or unstably housed. For my second objective, I conducted a qualitative narrative inquiry through interviews with individuals with TBI who experienced residential instability following their trauma, to better understand how they navigated their

interactions with health and social care systems and their experiences of residential instability. Finally, for the third objective, I conducted a qualitative single case study of a non-profit organization providing community services to individuals with TBI to describe how they guide these individuals toward their services to prevent homelessness and support stable tenancy. The sources of data were semi-structured interviews and agency documentation.

Results: Study 1, the scoping review showed that TBI influences various aspects of life in the homeless population, including health, social lives, daily activities, and service utilization. To address these challenges, the included studies recommended routine TBI screenings in homeless care facilities and improved access to neuro-specific rehabilitation. Healthcare settings must also be aware of the housing conditions of their patients with TBI and make appropriate referrals in cases of homelessness or unstable housing to prevent future episodes of homelessness in this population. Additionally, increasing awareness of TBI and its impacts, providing clinicians with training on how to manage clients with aggressive behaviours, and developing policies, strategies, and interventions that address the combined effects of TBI and homelessness are recommended.

Study 2, the narrative inquiry, demonstrated the broad impacts of TBI on individuals' lives, including health outcomes, loss of jobs, and loss of social networks. Moreover, the important roles of individuals' socioeconomic status (SES) and the impact of pre- and post-TBI relationships and family dynamics on health and housing outcomes following the TBI were highlighted. Individuals' experiences reflected a lack of knowledge among the healthcare and social service providers about their unique needs and challenges. As well, it showed several gaps in the system related to serving these individuals, including inaccurate assessments, long waitlists for health and housing services, and a lack of providers in the healthcare system.

Finally, study 3, the qualitative single case study, showed that the case, an organization that provides community services to individuals living with TBI, inquires about the housing of their clients on initial contacts and then again annually. Apart from their limited supportive housing program with a long waitlist, it also provides some individualized support tailored to the client's needs. However, housing needs are not always successfully met, with limitations in the capacity to provide residential services, infrequent documentation of clients' housing status as an ongoing concern, treating housing as a secondary concern compared with other program areas, and systemic barriers contribute to this process. These systemic barriers limit service capacity and the access of individuals with TBI to this organization. Examples include limited awareness about TBI community services among health and social service providers, inadequate funding and resources, lengthy and complex application processes for housing supports, and excessive formalities and bureaucratic obstacles for implementation of community service plans targeting the housing of individuals with TBI.

Conclusion: There is a need to change system-level beliefs about housing for individuals with TBI and to reframe housing in the health and social care systems as a fundamental determinant of health and a basic human right for this population. Healthcare and social service providers should routinely assess and monitor the housing needs of this population, take action within their capacity when instability is identified, and connect clients to appropriate community resources. Sustained government investment in social housing and improvements to income assistance programs that reflect the actual cost of living are also essential. Governments and institutions must recognize and act upon their shared responsibility to prevent homelessness among individuals with TBI.

ACKNOWLEDGEMENTS

I would like to first express my gratitude to my supervisor, Dr. Katrine Sauvé-Schenk, for her continuous guidance and support throughout this research. Your encouragement to take a critical yet open-minded stance in evaluating the concepts and methods considerably strengthened this dissertation, as well as my overall approach as a researcher. You always went above and beyond your responsibilities as a supervisor to ensure my doctoral experience was highly enriching. Thank you for your patience. Thank you for believing in me to finish this project.

I am very grateful to my experienced thesis committee members, Dr. Mary Egan and Dr. John Sylvestre. Your invaluable knowledge, thoughtful feedback, and intellectual contributions to my work have been vital to shaping this project and ensuring its quality.

I also thank Mahsa Mohammadzadeh, PhD candidate, for her role as the second reviewer for my scoping review study.

A special thank you to the participants of my second study, who generously shared their stories and challenges with me. I am honoured by your trust and humbled by your generosity in the hope of improving the lives of others. I also extend my sincere thanks to the community organization that assisted with recruitment for my second study, as well as to the staff members who participated in my third study and shared their concerns regarding the ways in which services are provided to clients.

Finally, my deepest thanks go to my wife, Elham. Although she is herself a PhD candidate, she was always there for me, both intellectually and emotionally, listening to my concerns, reading my work, and standing by me throughout this journey from beginning to end. Thank you for your never-ending support and for bringing such happiness into my life.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

ABI	Acquired brain injury
CanMOP	Canadian Model of Occupational Participation
ED	Emergency department
ER	Emergency room
IPV	Intimate partner violence
JBI	Joanna Briggs Institute
LOC	Loss of consciousness
LTD	Long-term disability
MP	Member of Parliament
MPP	Members of Provincial Parliament
OSF	Open Science Framework
PRISMA-ScR	Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews
SES	Socioeconomic status
PSW	Personal support worker
PTSD	Post- traumatic stress disorder
TBI	Traumatic brain injury
WHO	World Health Organization
WSIB	Workplace Safety and Insurance Board

CHAPTER 1: INTRODUCTION

1.1 Background

Approximately 330 million people worldwide were estimated to be homeless in 2024, representing one of the most severe forms of housing and social exclusion (OECD 2020; UN-Habitat 2024). Canada is not exempt from this crisis, with more than 235,000 individuals experiencing homelessness each year and approximately 35,000 homeless on any given night (Gaetz et al., 2016). Individuals facing homelessness encounter a range of social challenges, including unemployment (Poremski et al., 2016), poverty (Shier et al., 2012), and food insecurity (Seale et al., 2016). Their physical and mental health is often compromised by multiple comorbidities, contributing to an age-adjusted mortality rate up to eight times higher than that of the general population (Jones et al., 2015). Mounting evidence demonstrates the direct impact of social determinants of health on the well-being of people experiencing homelessness, reinforcing a global consensus on the urgency of addressing this issue (Marmot et al., 2008).

Among the numerous health-related risks affecting this population, one particularly under-recognized yet pervasive health issue is traumatic brain injury (TBI), a public health problem with disproportionately high prevalence in the homeless populations (Hwang et al., 2008; Stubbs et al., 2020). For instance, a survey of 904 individuals experiencing homelessness in Toronto found that 53% had sustained at least one TBI in their lifetime, with 12% of those classified as moderate to severe (Hwang et al., 2008). Research suggests a significant relationship between the severity and timing of TBI and housing instability. Stubbs et al. (2022) reported that a person’s first moderate-to-severe TBI often coincides closely with the initial loss of stable

housing, suggesting that TBI-related impairments may contribute to difficulties in maintaining housing, such as through loss of employment and income. Consequently, a history of moderate-to-severe TBI may serve as a critical barrier to stable housing and is associated with ongoing residential instability (Stubbs et al., 2022).

TBI can lead to long-term physical, cognitive, and psychosocial impairments. Those affected are more likely to experience poor overall health and are at increased risk for conditions such as seizures, dementia, and Parkinsonism, which often necessitate frequent healthcare utilization (Ishibe et al., 2009; Konrad et al., 2011). Consequently, individuals who are homeless or precariously housed and have experienced TBI tend to use healthcare and social services at higher rates than those without such injuries (Callaway et al., 2015; Hwang & Henderson, 2010). Furthermore, TBI frequently co-occurs with mental health and/or substance use challenges, resulting in a heavy reliance on social support systems (Callaway et al., 2015).

Despite extensive research on the health and social consequences of TBI, less is known about how interactions with health and social care systems, an important part of individuals' lived experiences that shape both recovery and housing trajectories, influence their housing stability. This project aims to address this gap by exploring how interactions with health and social care services following TBI influence residential instability.

1.2 Thesis Overview

This is an article-based thesis of three studies. Study 1 was a scoping review titled "Exploring the Influences of Traumatic Brain Injury (TBI) on the Experiences of Individuals Who Are Homeless or Marginally Housed: A Scoping Review," and the objective was to identify the challenges experienced by the homeless or unstably housed population with TBI, as well as the recommendations for addressing them. The manuscript of this study has been accepted for publication in *Disability and Rehabilitation*.

Study 2 was a qualitative narrative inquiry titled "Experiencing residential instability following traumatic brain injury (TBI): stories of the interactions with the health and social systems," and the objective of this study was to better understand the personal experiences of individuals with TBI regarding their interactions with health and social care systems and how these interactions influenced their residential stability. The manuscript of this study has been submitted to *Disability and Society.*

Finally, Study 3 was a qualitative single-case study titled "Preventing Homelessness among Individuals with Traumatic Brain Injury: A Qualitative Case Study of a Community Service Provider." This study was conducted to describe how a non-profit organization providing community services to individuals with TBI addresses housing needs, prevents homelessness, and supports stable tenancy. The manuscript of this study has been submitted to the *Journal of Social Distress and Homelessness.*

Overview

In this dissertation, Chapter 1 is an introduction that presents a review of the literature, rationale, and objectives of the studies; **Chapters 2-4** consist of the three studies in manuscript format; and **Chapter 5** presents the theoretical framework and an integrated discussion of key findings, implications for clinical practice, policy, and future research, as well as the study's limitations and strengths.

1.3 Theoretical Paradigm

The term paradigm is defined as "a loose collection of logically related assumptions, concepts, or propositions that orient thinking and research" (Bogdan & Biklen, 1998, p.22). Among several theoretical paradigms, the interpretivist-constructivist paradigm is aligned with my main research question as it has the intention of understanding the world of human experiences, such as the experience of disability, chronic illness, health, healing, and rehabilitation. In this paradigm, the emphasis is placed on understanding the individual and their interpretation of the world around them. The key tenet of this paradigm is that reality is socially constructed (Mertens, 2019).

Interpretivism and constructivism share a common commitment to exploring how individuals make sense of their experiences and the world around them. Both paradigms emphasize the significance of socio-cultural influences and the collaborative nature of knowledge creation. These paradigms challenge the positivist perspective of a singular, objective reality, instead promoting a flexible, participant-centred approach to understanding complex human behaviours and social phenomena. Moreover, they advocate for qualitative, context-sensitive inquiry in natural settings (Pulla & Carter, 2018; Scauso, 2020).

Although interpretivism and constructivism are often discussed together, they represent related yet distinct orientations. Interpretivism prioritizes the understanding of the meanings individuals assign to their actions, experiences, and interactions from their own perspectives. This approach asserts that social phenomena are most effectively understood when examined within specific cultural, social, and historical contexts. In terms of knowledge generation, interpretivist researchers actively engage with participants to uncover how meaning is collaboratively formed (Pulla & Carter, 2018; William, 2024).

Constructivism, on the other hand, posits that knowledge and reality emerge through dialogic and social interactions between researchers and participants (Mohammed & Kinyo, 2020; Saleem et al., 2021; Sharma & Bansal, 2017). According to the constructivist paradigm, truth and knowledge are constructed by the mind, and reality exists in multiple forms, expressed through symbols and language and intentionally modified by the human mind to achieve specific goals (Guba, 1990; Schwandt, 1994; Williamson, 2006). Researchers who adopt a constructivist perspective emphasize the importance of understanding individual experiences as they are perceived and lived within specific social contexts. These experiences are understood as dynamic and culturally influenced, emerging through interactions with others. Constructivist inquiry in healthcare, therefore, seeks to explore how individuals interpret and find meaning in their health-related experiences (Appleton & King, 2002; Guba, 1990; Schwandt, 1994; Williamson, 2006).

Because of their shared philosophical assumptions, many qualitative researchers integrate these two paradigms into what is often termed an interpretivist–constructivist paradigm (Creswell & Creswell, 2017; Guba & Lincoln, 1994). This paradigm provides a coherent framework for exploring the subjective and socially constructed nature of human experience. Within this worldview, both researcher and participants play active roles in directing the research process, and qualitative data collection and analysis methods are typically employed (McKenna et al., 2001).

Based on the characteristics of my research project, it aligns well with this paradigm. Individuals with TBI experience a range of disabilities, and I aim to explore how their interactions with healthcare and social service organizations influence their housing conditions. This research question was addressed using a qualitative methodology, and during the research

process, I engaged with the research participants and captured their perspectives through in-depth interviews.

1.4 Positionality

The term positionality refers to an individual's worldview and the position they adopt about a research project and its social and political context (Foote & Gau Bartell, 2011; Rowe, 2014; Savin-Baden & Major, 2023). The individual's worldview or "where the researcher is coming from" discusses ontological beliefs about reality, epistemological views on knowledge, and assumptions about human nature and agency and the way we interact with our environment and relate to it (Bahari, 2010; Grix, 2018; Scotland, 2012).

Self-reflection and a reflexive approach are both a prerequisite and an ongoing process enabling the researcher to identify, construct, critique, and articulate their positionality. In simple terms, reflexivity refers to the idea that researchers should recognize and openly disclose their own presence in their research, aiming to comprehend their role in it and its potential impact (Cohen et al., 2011).

A good strong positionality statement typically discusses a description of the researcher's lenses (such as their philosophical, personal, and theoretical beliefs and perspective through which they view the research process), potential influences on the research (such as age, political beliefs, social class, race, ethnicity, gender, religious beliefs, previous career), and the researcher's chosen or pre-determined position about the participants in the project (e.g., as an insider or an outsider) (Creswell & Poth, 2016).

In line with the theoretical paradigm of this research, my ontological position to answer my research question is relativism, since I believe that the results of any investigation are determined by the interaction of the investigator and the investigated and that multiple realities exist in the

form of multiple mental constructions (Clark, 1993). Epistemologically, I adopt a subjectivist position, as I believe the investigator and the investigated form a single entity, and that the outcomes of research are created through their interaction (Clark, 1993).

In terms of my position about the participants and the research context, I considered myself an outsider. As an international student, from a different race and culture, I barely had commonalities with individuals with lived experience of TBI and residential instability in Canada. However, when it came to healthcare providers within a rehabilitation organization in Canada, I would be regarded as an insider because of my educational background in occupational therapy, and the interviews I had with individuals with lived experience of TBI and residential instability. My outsider position could have a detrimental impact on the research process, particularly during the recruitment and data collection phases. However, as an external researcher, I managed to establish trust with participants and the targeted organization, which were required to engage in interview sessions to share their thoughts and experiences.

1.5 Conceptual Framework: Introduction to CanMOP

The conceptual framework of a study influences the way knowledge is interpreted (Martens, 2005). Among multiple models applied in rehabilitation studies, the Canadian Model of Occupational Participation (CanMOP) was used as the framework for this research project. The primary purpose of this model is to assist occupational therapists, individuals, and collectives to collaboratively reflect on occupational participation (Egan & Restall, 2022). Occupational participation is defined as “having access to, initiating, and sustaining valued occupations within meaningful relationships and contexts” (Egan & Restall, 2022, p. 76)

The main considerations of this model are (1) the purpose and meaning of occupational participation and (2) the occupational possibilities to access, initiate, and sustain participation within the micro, meso, and macro contexts. The micro level includes individuals and concepts in direct contact with the person that influence occupational participation; the meso level encompasses system structures such as health and social service organizations; and the macro level refers to the larger socioeconomic and political context shaped by national, provincial, and local governance (Egan & Restall, 2022)

The purpose and meaning of participation are also related to individuals or groups' needs, history and relationships, which help to understand what would be considered satisfying occupational participation. The individuals and collectives strive to fulfil their four basic needs, including survival and safety, autonomy, relatedness, and competence, through occupational participation. Moreover, the past, present and hoped-for future relationships of the individual or collective and how they relate to their histories influence the purpose and meaning of their occupational participation (Egan & Restall, 2022).

The CanMOP served as the underlying theoretical framework for this research project, informing both the design of the studies and the interpretation of findings. While it was not explicitly named in the submitted journal articles, its core concepts guided the overall approach and analysis. Given the scope and structure of the articles, which prioritized detailed descriptions of study design, analytical approaches, and results, the model is more fully articulated in the final chapter (integrated discussion), where its relevance to the findings is explored in depth.

1.6 Review of the Literature

In this section, I will provide the definitions of the key concepts used in this project, explain how they are linked together, and present the rationale for conducting each of my studies. A summary of the literature on TBI is presented in Table 1.1 at the end of this section.

1.6.1 Definitions

1.6.1.1 Homelessness. Homelessness is defined by the Canadian Observatory on Homelessness as "the situation of an individual, family or community without stable, safe, permanent, appropriate housing, or the immediate prospect, means and ability to acquire it. It is the result of systemic or societal barriers, a lack of affordable and appropriate housing, the individual/household's financial, mental, cognitive, behavioural or physical challenges, and/or racism and discrimination" (Gaetz et al., 2012, p.1). In 2021, over one in ten (11.2%) Canadians or 1,690,000 people, reported that they had experienced homelessness or unstable housing conditions in their lives (Statistics Canada, 2023). In Ontario, rates of homelessness have been rising. Richard et al. (2019) estimated that 59,974 (95% CI: 55,231 to 65,208) Ontarians (0.53% of the adult population (18 years old or older)) experienced homelessness in 2016, a 67.3% increase from 2007 (Richard et al., 2019). In 2024, over 80,000 people were experiencing homelessness (Association of Municipalities of Ontario (AMO), 2025).

1.6.1.1.1 Types of Homelessness. The Canadian definition of homelessness identifies four types of homelessness to outline the range of housing for individuals who are homeless or at risk of homelessness. These categories are unsheltered homelessness, emergency sheltered homelessness, provisionally accommodated, and at risk of homelessness. The unsheltered

category includes individuals or families who are completely homeless, living on the streets, or in locations unsuitable for human habitation. The emergency sheltered group encompasses those who stay overnight in emergency shelters. Provisionally accommodated individuals or families reside in temporary arrangements, such as hospitals or with friends. Lastly, those at risk of homelessness are not currently homeless but face financial instability, putting them in a vulnerable position and at high risk of losing their housing (Gaetz et al., 2012, p. 1).

In addition to the above-mentioned categories, special attention should be paid to the episodic nature of homelessness, in which the episodes can be classified as chronic, cyclical, or temporary, depending on their duration. Chronic homelessness refers to prolonged or repeated periods of homelessness. To qualify as chronically homeless, an individual must have experienced at least six months (180 days) of homelessness within the past year or have faced recurring episodes over the past three years, totalling at least 18 months. These periods of homelessness may occur in unsheltered locations, emergency shelters, or temporary arrangements with friends or family (Gaetz et al., 2012).

Cyclical or episodic homelessness describes situations where individuals transition in and out of homelessness due to changing circumstances, such as release from an institution, shifts in employment, family disruptions like divorce or domestic violence, loss of income, or unexpected changes in housing (Echenberg & Munn-Rivard, 2020). Lastly, short and one-time instances of homelessness, often caused by natural disasters, sudden housing changes, or house fires, are categorized as temporary homelessness (Infrastructure Canada, 2019).

1.6.1.2 Residential Instability. Residential instability refers to a process in which the shifting relationship between individuals, housing conditions, and the presence of formal and

informal support systems results in varying degrees of stability over an extended duration (Sylvestre et al., 2009). Sustained patterns of residential instability result in poor outcomes at times comparable to homelessness; for instance, homeless and vulnerably housed adults have a similar likelihood of experiencing unmet healthcare needs (Argintaru et al., 2013). Moreover, there is a clear overlap between the concepts of residential instability and episodic homelessness in that both typically involve frequent moves situated within a broader context of insecure housing (Czechowski et al., 2022).

1.6.1.4 Homelessness, Health and Social Challenges. Individuals experiencing homelessness face a wide array of complex health challenges, including chronic and infectious diseases, mental health disorders, and injuries often related to violence (Fazel et al., 2014; Hwang et al., 2013; Lebrun-Harris et al., 2013). This population has a disproportionately high prevalence of psychotic disorders, major depressive disorder, and substance use disorders involving drugs and alcohol (Fazel et al., 2008). Additionally, rates of infectious diseases such as HIV, hepatitis C, and tuberculosis are significantly elevated among people experiencing homelessness (Beijer et al., 2012). Chronic conditions such as diabetes and hypertension are often poorly managed in this group, in part due to inconsistent access to care and difficulty adhering to treatment regimens (Axon et al., 2016).

These health disparities are further exacerbated by both personal and systemic barriers that impede timely access to primary health services (White & Newman, 2015). As a result, individuals experiencing homelessness are frequently categorized as high utilizers of emergency and acute care services (Hwang et al., 2013; Mitchell et al., 2017). The urgent need to secure basic necessities, such as food, shelter, and safety, often supersedes attention to non-emergent

health concerns, thereby contributing to deteriorating health and an overreliance on emergency services (Hwang et al., 2013; Lebrun-Harris et al., 2013).

Moreover, people experiencing homelessness are at increased risk of exposure to crime and discrimination. Many may resort to illegal or borderline legal activities to meet basic survival needs, placing them at heightened risk of contact with the criminal justice system (Nilsson et al., 2020). Other persistent challenges include poverty, social exclusion, marginalization, and unemployment (Friesinger et al., 2019; Poremski et al., 2016; Stergiopoulos et al., 2014).

The unpredictable and often hazardous nature of homelessness places individuals at an elevated risk for injury, illness, and victimization (Beydoun et al., 2025). While the literature has extensively documented health conditions and exposure to violence among this population (Heerde & Hemphill, 2019), relatively little attention has been devoted to the prevalence and impact of acquired brain injuries (ABIs), particularly TBI in people experiencing homelessness, a critical oversight given the potential implications for cognitive function, health service use, and long-term well-being (Stubbs et al., 2020).

1.6.1.5 Acquired Brain Injury (ABI). Acquired brain injury (ABI) refers to any damage to the brain that occurs after birth. ABI can occur in multiple forms, including traumatic brain injury (TBI), autoimmune processes, inflammation, infection, hemorrhage, cerebrovascular accident (CVA), and hypoxic injuries (Harvey, 2017). Regardless of the cause, the outcomes of ABI are influenced by factors such as the brain region affected, the brain's plasticity, and the severity of the injury (Williams, 2012).

ABI can result in complex long-term consequences, and it is categorized into mild, moderate, or severe, which often influences the level of rehabilitation services provided. As a result of ABI,

individuals might experience issues with cognition, memory, communication skills, fatigue, and a range of physical effects. However, each person's experience with brain injury is unique (Cottrell & Chapman, 2024). Among the most common causes of brain injury are TBI and stroke (Harvey, 2017).

1.6.1.6 Traumatic Brain Injury (TBI). Traumatic brain injury (TBI) refers to physical damage to brain tissue resulting from an external force, which may lead to temporary or permanent disruption of normal brain function. It can be caused by blunt trauma to the head or penetrating injuries and remains a significant global health concern. Estimates suggest that up to 50% of the world's population will experience at least one TBI in their lifetime (Maas et al., 2017). In 2016 alone, there were approximately 17.5 million new TBI cases among males and 9.6 million among females worldwide (James et al., 2019). That same year, the number of prevalent cases was 34.8 million for males and 20.7 million for females, collectively accounting for 8.1 million years lived with disability (YLD) (James et al., 2019). When stratified by sex, the annual incidence was 195 per 100,000 person-years for females (95% CI: 84–452) and 388 per 100,000 for males (95% CI: 138–1,092) (Nguyen et al., 2016).

In 2019, TBI had 27.16 (95% uncertainty interval (UI) 23.36 to 31.42) million new cases, 48.99 (46.84 to 51.32) million prevalent cases and 7.08 (5.00 to 9.59) million YLDs. There were 346 (95% CI 298 to 401) cases per 100,000 population, 599 (573 to 627) cases per 100,000 population and 87 (61 to 117) YLDs per 100,000 population for age-standardized incidence rates, age-standardized prevalence estimates and age-standardized YLD rates of TBI in 2019, respectively (Guan et al., 2023).

In Ontario, between 2011 and 2019, the incidence of TBI increased from 4.89 to 7.28 per 1000 people, and prevalence increased from 71.49 to 100.45 per 1000 people.

In total, the number of people with a TBI or concussion increased from 949,761 in 2011 to 1,475,726 people in 2019 (Ontario Brain Institute, 2023). Children, adolescents, and young adults accounted for almost 50% of all new cases of TBI in the Global Burden of Disease Study in 2016 (James et al., 2019). Illie et al. (2013) reported that the estimated lifetime prevalence of TBI among Ontarian adolescents is 20.2% (95% CI: 18.1%–22.4%). Of these, 5.6% (95% CI: 4.2%–7.5%) reported at least one TBI in the past year, 4.3% among females and 6.9% among males, while 14.6% (95% CI: 13.4%–15.9%) reported a TBI at some point in their life, excluding the previous year (12.8% among females and 16.2% among males) (Ilie et al., 2013). Approximately 80–90% of individuals with TBI are treated in emergency departments (EDs) (Faul et al., 2010).

Fu et al. (2016) analyzed trends in TBI-related ED visits in Ontario from 2002/03 to 2009/10, documenting 986,194 visits and 1,072 TBI-related deaths. During this eight-year period, the absolute number of ED visits for TBI increased by 4% (from 122,620 to 127,255), though the overall visit rate declined by 3% (from 1,013.9 to 979.1 per 100,000 population). Among non-admitted patients, the most frequent causes of TBI were falls (44%), being struck by or against an object (37%), and motor vehicle collisions (MVCs) (10%). Sports- and bicycle-related TBIs accounted for 9% and 3% of cases, respectively. Falls were most prevalent among young children (ages 0–4) and older adults (ages 85+), while MVC-related TBIs primarily affected children and adolescents (ages 5–14) as well as young adults (ages 15–24). A similar age distribution was observed for sports-related injuries, with peak incidence occurring in individuals aged 5–24 (Fu et al., 2016).

TBI is notably prevalent among homeless or unstably housed populations. Over half of the individuals in these groups have a history of TBI, with approximately 20% experiencing

moderate to severe injury (Stubbs et al., 2020). In this population, TBI is associated with poorer physical and mental health, increased suicidality, cognitive impairments (e.g., memory issues), elevated health service utilization, and higher rates of interaction with the criminal justice system (Adshead et al., 2021; Brenner et al., 2017; Cusimano et al., 2021; To et al., 2015). Despite these concerning outcomes, the role of TBI in contributing to or perpetuating homelessness remains insufficiently understood.

1.6.1.7 Community Integration. Community integration encompasses forming social connections, participating in communal activities, contributing to societal life, and utilizing local resources (Aubry et al., 2013; Ornelas et al., 2014). Core concepts of community integration include feeling a sense of belonging and meaningful connection to the community, engaging in personally valued activities, and maintaining autonomy and control over one's life (Shaikh et al., 2019). It has three key dimensions: physical integration, which refers to a person's involvement in activities and use of services outside the home; social integration, which relates to interactions with neighbours (Aubry & Myner, 2009; Wong & Solomon, 2002); and psychological integration, which captures an individual's sense of belonging and identification with their community (Ecker & Aubry, 2016).

For individuals recovering from TBI, achieving community integration and sustaining social relationships is often a complex and multifaceted challenge (Mahar & Fraser, 2011; Shaikh et al., 2019; Walsh et al., 2015). Active participation in community life alongside others is widely regarded as a key objective of post-ABI rehabilitation (Brookfield & Mead, 2016; J. Douglas, 2020; J. M. Douglas, 2018; Ylvisaker et al., 2008). This emphasis is reflected in international, multidisciplinary clinical practice guidelines, which consistently highlight community integration as a central component of effective care (Marshall et al., 2018; Togher et al., 2023).

Furthermore, successful integration into the community has been linked to greater life satisfaction, emotional well-being, and overall quality of life following TBI (J. Douglas, 2020; Nalder et al., 2023).

1.6.2 Rationales for Conducting the Studies

1.6.2.1 Influences of TBI on the Experience of Homelessness. TBI is a leading cause of death and disability around the world, accounting for approximately half of all trauma-related deaths (Dewan et al., 2018). The main cause of post-TBI disability is neuropsychiatric sequelae, including cognitive, emotional, behavioural, physical, and psychosocial problems (Silver et al., 2009). While affective sequelae of TBI have been less studied, there is an agreement among clinicians regarding the existence of disturbances in emotion, such as irritability, heightened anxiety and depression in patients with moderate to severe TBI (Riggio & Wong, 2009; Torregrossa et al., 2023). Roughly 65 percent of moderate to severe TBI patients experience long-term cognitive problems such as memory and information processing disorders and executive dysfunction, which may result in failure at work, social relationships, leisure, and activities of daily life (Peng et al., 2014; Rabinowitz & Levin, 2014). Physical sequelae frequently accompany cognitive problems and often include headache, dizziness, and fatigue (Biagianti et al., 2020)

Bigler et al. (2013) presented evidence that TBI, regardless of location and severity, might predispose affected individuals to develop neuropsychiatric disorders after the original brain injury. The most susceptible parts of the brain to damage are related to social-emotional processing and decision-making (frontal lobes and anterior tips of the temporal lobes). Thus,

even remote injuries may have adverse effects on patients long after the original brain injury (Bigler, 2013).

TBI and mental disorders are common co-occurring conditions and have been studied extensively (Kureshi et al., 2023). A structured clinical interview of TBI patients six months to five and a half years post-injury demonstrated that 65% of the sample met the criteria for a psychiatric diagnosis (Whelan-Goodinson et al., 2009). Moreover, the results of telephone interviews with patients hospitalized for TBI showed that 53% of the sample met the criterion of a major depressive disorder during the first-year post-injury, which is considered an independent predictor of lower quality of life (Bombardier et al., 2010). A review also found evidence for a higher frequency of mood disorders after TBI (Martinez et al., 2024). Critical reviews of evidence also showed a significant association between TBI and schizophrenia (Batty et al., 2013; Molloy et al., 2011).

Substance use is also closely linked with TBI. A literature review on persons with substance abuse and TBI established that substance use is common both pre- and post-injury. Frequently, substance use is a contributing factor to the occurrence of brain injury (McHugo et al., 2017). These overlapping risk factors, including mental illness, substance use, and prior brain injury, are widely recognized as contributing to an elevated risk of homelessness (To et al., 2016).

This relationship is further supported by high-quality synthesized evidence. Systematic reviews and meta-analyses have shown high rates of TBI among homeless and vulnerably housed individuals, with the majority of injuries occurring before the onset of homelessness. This suggests that TBI may be a contributing factor to becoming homeless or vulnerably housed (Rigney et al., 2022; Stubbs et al., 2020; Topolovec-Vranic et al., 2012).

Among homeless individuals, a history of TBI was associated with many adverse healthcare outcomes, such as poorer physical and mental health status, increased likelihood of seizures, mental health and substance use problems, higher risk for suicide, increased health service use and increased criminal justice system involvement (Bushnik et al., 2015; Hwang et al., 2008; Stubbs et al., 2020). Moreover, TBI-specific challenges, combined with factors such as financial constraints and lack of social support, lead to difficulties maintaining housing stability and increase the risk of homelessness (Svoboda & Ramsay, 2014).

People with TBI who live in precarious housing situations or experience homelessness often rely heavily on healthcare and community support. To et al. (2015) reported that, in a one-year follow-up of 968 homeless individuals, participants who reported a history of TBI at baseline were significantly more likely to visit an ED and to be frequent ED users than those without TBI. A history of TBI was independently associated with being a victim of physical assault, and affected individuals were also more likely to report a hospital admission at follow-up than those without TBI (To et al., 2015). Moreover, the negative consequences of TBI, such as reduced independence (Renne et al., 2023), poor vocational outcomes (Malhotra et al., 2024) and lowered participation in meaningful activities (Adshead et al., 2021), further contribute to their frequent use of community services.

Literature has shown that current health and social care systems are not well equipped to adequately support individuals with experience of TBI and homelessness and to address the unique support requirements of this population to integrate into the community and acquire and maintain stable housing (Estrella et al., 2021; Mejia-Lancheros et al., 2022; Topolovec-Vranic et al., 2017). For example, Estrella et al. (2021) discussed several structural barriers, including limited housing supply in the context of high demand and affordability issues, poor attitudes

toward understanding TBI among the social service providers, and the fragmented system of care for this population (Estrella et al., 2021).

Given these systemic challenges and the complex health and social needs associated with TBI and homelessness, further exploration is needed to understand how TBI specifically influences the lived experiences of affected individuals. The objective of the first study was to better understand how TBI influences the experiences of individuals who are homeless or unstably housed. **Study 1 was a scoping review that explicitly identified the challenges and needs experienced by the homeless population that may be related to TBI, along with the recommendations for managing them.**

1.6.2.2 The Interactions of Individuals with TBI with the System. TBI sequelae can be devastating and lifelong. Various physical, cognitive, behavioural and social outcomes typically require specialized and ongoing management. These outcomes, combined with financial constraints and a lack of social support, might lead to housing instability and increase the risk of homelessness (Adshead et al., 2021; Svoboda & Ramsay, 2014). The lifetime prevalence of TBI in homeless and vulnerably housed individuals is high, and more than 70% of them had sustained these injuries before becoming homeless (Rigney et al., 2022; Stubbs et al., 2020; Topolovec-Vranic et al., 2012). To address their health-related and basic needs, such as financial, food and to prevent their loss of stable housing, individuals with TBI need to interact with the health and social care systems.

Over 80% of TBIs are classified as mild, and the majority of individuals tend to recover within a few days or weeks. However, around 20–30% experience ongoing symptoms like headaches, fatigue, difficulty concentrating, and dizziness (Cooksley et al., 2018; Hiploylee et

al., 2017). These lingering symptoms can significantly disrupt daily life, impairing community involvement, work productivity, and social interactions (Konrad et al., 2011; Silverberg et al., 2018; Theadom et al., 2018). Recent clinical guidelines suggest that individuals with persistent symptoms lasting more than four weeks should receive specialized multidisciplinary rehabilitation services (Marshall et al., 2018, 2023). However, in Canada, long wait times and delays in accessing these services are commonly reported, often leading to prolonged post-concussion symptoms, increased anxiety, and reduced community integration (Laliberté et al. 2018; Passalent, Landry, and Cott 2010). These symptoms can elevate individuals' reliance on healthcare and social services and even put them at risk of losing their stable homes (Kerman et al., 2017; Topolovec-Vranic et al., 2017).

TBI and mental health and/or substance use challenges are often co-occurring conditions that are associated with housing instability and prolonged homelessness (Martijn & Sharpe, 2006). Individuals with co-occurring TBI and mental health and/or substance use have complex and often unmet care needs, primarily due to insufficient coordination and communication among healthcare providers and social services. During inpatient care, various professionals, including physicians, nurses, rehabilitation specialists, and mental health practitioners, are typically involved in treatment (Turner-Stokes, 2008). Following discharge, referrals may be made to additional providers, such as case managers, to facilitate the critical transition from hospital to community-based care (Curran et al., 2015). However, a significant limitation within the system is its dependence on patient self-advocacy. Individuals are often expected to independently locate services, schedule appointments, and manage transportation. This expectation can pose serious challenges for people with ABI-related impairments, such as

reduced self-awareness, limited self-efficacy, and difficulties with organization, all of which can hinder their ability to access and participate in necessary services (Hunt et al., 2013).

The majority of Canadians living with TBI receive care within community settings rather than in hospitals. National data show that while 64% of individuals with TBI seek assistance through emergency departments, only a small proportion (13%) are subsequently hospitalized (Rao et al., 2018). Because most individuals are discharged back to the community, ongoing care is expected to occur through follow-up with family physicians. However, a large proportion of those surveyed at 1-year post-injury (74%) reported not receiving follow-up care from a health professional (Rao et al., 2018). Therefore, many individuals affected by TBI must often rely on privately funded services in the community, either through self-pay or private insurance (Hou et al., 2024).

The quality and scope of services accessed by individuals with TBI are influenced by a range of interrelated factors. Health literacy, for both individuals with TBI and their family members, plays a crucial role in understanding the condition and navigating the healthcare system (Moore et al., 2017). The effectiveness of communication among healthcare providers involved in the individual's care also significantly affects the continuity and quality of services delivered (Kroll & Neri, 2003; Ljungholm et al., 2022). Access may further be shaped by factors such as insurance coverage, public healthcare funding, the availability of necessary services, and whether the person resides in an urban or rural setting (Solovieva & Walls, 2014). Additionally, a person's ability to manage their own care, particularly in cases of severe TBI, is a key determinant of service utilization (Jaffee et al., 2009). Given this complexity, well-coordinated care is essential and has been shown to improve recovery trajectories and health outcomes for individuals with severe TBI (Palusak et al., 2022; Pressman, 2007).

As a result, to better support a patient with TBI along the continuum of care, there should be continuous communication between various healthcare and social sectors. Bucceri et al. (2018) showed that healthcare and social sector agencies struggle to coordinate care in Canada. The three primary and inter-related challenges raised by survey participants in this study were a lack of communication between sectors, privacy concerns around the sharing of confidential information and systems pressures on hospitals, shelters and affordable housing stock (Buccieri et al., 2018).

Despite the long interactions between individuals with TBI and the health and social care systems following their trauma, they might experience housing instability and even homelessness. Despite systemic gaps, limited attention has been given to how these experiences are perceived and navigated by the individuals themselves. **Therefore, the second study aimed to better understand the personal experiences of individuals with TBI regarding their interactions with the health and social care systems and how these interactions influenced the onset or continuation of residential instability.**

1.6.2.3 Housing Considerations in a TBI Community Service Provider. Healthcare professionals across various settings, from inpatient care to outpatient and community services, play a crucial role in supporting individuals with TBI, not only during the acute phase but also throughout long-term recovery and the re-establishment of daily life (Nikolaisen et al., 2024).

TBI is frequently linked to a range of cognitive difficulties, including impairments in memory, processing speed, attention, and executive functioning (Jourdan et al., 2016; Stuss, 2011), as well as issues with behavioural regulation, such as impulsivity and irritability (Azouvi et al., 2017). These neurologically driven changes can hinder an individual's ability to gain and sustain

employment and secure stable housing, positioning TBI as both a contributing cause and a reinforcing factor in housing instability. This underscores the critical need for post-acute rehabilitation and community-based services for this population (Ibarra et al., 2020).

Despite this need, individuals with TBI frequently receive inadequate follow-up care, even in well-resourced healthcare systems (Andelic et al., 2010; Gagnon et al., 2016; Hodson et al., 2017). Evidence indicates that those with milder forms of TBI are especially vulnerable to insufficient professional support (Graff et al., 2018; Hall et al., 2012; Norman et al., 2023). This may stem from a tendency to discharge patients without comprehensive assessments, inpatient rehabilitation, or long-term care planning (Hodson et al., 2023). In cases where individuals do not exhibit obvious motor or speech deficits, underlying impairments may be overlooked (Kapoor et al., 2017). Subtle yet impactful difficulties, such as problems with concentration, persistent fatigue, depression, and social challenges, often become more evident once individuals resume daily life in the community (Arntzen & Hamran, 2016). It is during this transition that both individuals with TBI and their close network, such as partners, family, and friends, begin to fully grasp the ongoing consequences of the injury (Andelic et al., 2016; Gerber et al., 2016; Larsson-Lund et al., 2022). Unfortunately, this period frequently coincides with a significant reduction in support from health, community, and social care services, which can restrict the individuals' community integration (Arntzen & Hamran, 2016; Shipley et al., 2018).

Contributing to this gap in care is the strain on hospital resources. Literature has shown that hospitals in Canada have limited resources to meet increasing needs and are frequently overcrowded (Zhao et al., 2015). While the international standard for safe occupancy is 85 percent, in the summer of 2017, half of the hospitals in Ontario were at or above 100 percent occupancy, sometimes reaching as high as 140 percent (Ontario Hospital Association, 2018).

This lack of sufficient resources can result in failure to conduct a coordinated discharge plan, especially for patients with chronic conditions, including TBI, increasing the risk of fragmented post-acute care.

At the community level, several barriers further impede service delivery for individuals with TBI. Service providers often lack adequate training in brain-associated conditions and how best to apply neuro-informed practices in program design and delivery (Draper et al., 2024). Despite the integral role community and social service providers play in TBI program delivery, there has been no research so far on the type of training they receive about brain-associated conditions, or how they can effectively apply information about the brain to improve their program design and delivery. This gap is concerning, as inadequate training may contribute to poor service delivery. Service providers have reported that individuals with high care needs often face significant barriers to accessing appropriate services (Paat et al., 2021). In particular, limited understanding of conditions such as TBI makes it challenging to identify and implement effective support strategies (Estrella et al., 2021).

In addition, system-level challenges related to access are widely documented. Studies have identified issues with access of individuals with TBI to community services due to poor staffing and long waitlists, poor referral, a lack of knowledge of existing services and a lack of professional awareness of the needs of those with TBI and their families (Braaf et al., 2019; S. Moore et al., 2019; Odumuyiwa et al., 2019). Furthermore, among individuals with TBI, cognitive impairments may interfere with a person's capacity to meet the requirements of housing and social support programs (Backer & Howard, 2007; Draper et al., 2024). Unfortunately, when individuals struggle to comply with program expectations due to cognitive deficits, their behaviour is often misinterpreted by frontline workers as willful, resistant, or

manipulative, rather than as an involuntary result of brain injury (Backer & Howard, 2007; Draper et al., 2024).

These individual- and provider-level challenges are exacerbated by broader systemic fragmentation. Delivering comprehensive health and community services to individuals with chronic conditions requires a coordinated approach across systems. However, Canada's multi-level political structure, comprising federal, provincial/territorial, and municipal governments, makes coordination of mandates, budgets, and information sharing particularly challenging (Buccieri, 2016). For example, healthcare in most provinces, including Ontario, is administered at the provincial or territorial level through distinct ministries responsible for service planning and delivery based on geography. Housing, while also under provincial jurisdiction, is typically managed by different ministries and often delegated further to municipal governments. Municipalities, in turn, frequently collaborate with not-for-profit organizations on housing and homelessness issues. As a result, although each level of government has defined responsibilities, the lack of integration between them often leads to fragmented health and social care, an issue that disproportionately affects vulnerable populations (Buccieri et al., 2018).

These barriers impact community integration as one of the most persistent challenges faced by individuals with TBI. A successful community integration necessitates interaction with outpatient rehabilitation and community services (Shaikh et al., 2019). Despite the integral role that service providers in these settings play in program delivery, housing has been reported as an unmet need among individuals with TBI who received services from community service providers (Norman et al., 2023). **This underscores the need to investigate how an organization providing community-based services to individuals with TBI addresses**

housing, specifically, how they guide these individuals toward resources that prevent homelessness and support stable tenancy. This was the focus of my third study.

Table 1.1. Summary of Key Concepts Related to TBI

Category	Summary
Definition (ABI & TBI)	ABI refers to brain damage occurring after birth due to various causes (e.g., trauma, stroke, infection) (Harvey, 2017). TBI is a subtype caused by external force leading to temporary or permanent disruption in brain function (Maas et al., 2017).
Causes of TBI	Common causes of TBI include falls, being struck by/against objects, motor vehicle collisions, sports, and bicycle-related incidents. Falls are most common among young children and older adults (Fu et al., 2016).
Epidemiology	TBI is a major global health concern, with millions of new and prevalent cases annually. Incidence and prevalence have increased over time (e.g., in Ontario). Higher rates are

	observed among males and younger populations (Ontario Brain Institute, 2023).
Severity & Classification	TBI is classified as mild, moderate, or severe. While most cases are mild, a significant proportion of individuals experience persistent symptoms requiring ongoing care (Cooksley et al., 2018).
Common Symptoms & Sequelae	TBI is associated with impairments in cognitive (memory, attention, executive dysfunction), emotional (depression, anxiety, irritability), physical (fatigue, dizziness, headaches), and behavioural domains. Many individuals experience long-term or lifelong effects (Jourdan et al., 2016).
Neuropsychiatric & Co-occurring Conditions	TBI is associated with high rates of psychiatric disorders (e.g., depression, mood disorders, schizophrenia) and substance use. These conditions often co-occur and complicate recovery and daily functioning (Torregrossa et al., 2023).
Impact on Daily Life	TBI can create difficulties with employment, social relationships, independence, and activities of daily living. Reduced

	participation in meaningful activities and lower quality of life are common (Azouvi et al., 2017; Ibarra et al., 2020).
TBI & Homelessness	TBI is highly prevalent among homeless and vulnerably housed populations, often preceding homelessness. It is associated with increased risk of housing instability, poorer health outcomes, and higher service use.
Community Integration	Reintegration into community is a key rehabilitation goal that involves physical, social, and psychological participation in community life (Aubry et al., 2013). Reintegration is often challenging for individuals with TBI due to cognitive, social, and systemic barriers (Marshall et al., 2018; Togher et al., 2023).
Healthcare System Challenges	Healthcare system challenges include limited follow-up care, long wait times, and poor coordination between providers. Many individuals do not receive adequate post-injury support and must rely on self-advocacy (Hunt et al., 2013).

Social System & Access Barriers	Social system barriers include fragmented health and social care systems, limited housing availability, affordability issues, and lack of provider awareness about TBI. Access is influenced by funding, geography, and health literacy (Buccieri et al., 2018; Moore et al., 2017).
Service Delivery Gaps	Service delivery gaps include inadequate training among service providers, long waitlists, poor referrals, and lack of integrated care. Cognitive impairments may hinder individuals' ability to navigate services (Estrella et al., 2021).
System Fragmentation	System fragmentation is characterized by lack of coordination across healthcare, housing, and social services (across federal, provincial, and municipal levels), leading to gaps in care and support (Buccieri et al., 2018).
Housing Challenges	Cognitive, behavioural, and financial barriers make obtaining and maintaining stable housing difficult (Adshead et al., 2021). Housing is a major unmet need among individuals with TBI (Norman et al., 2023).

Importance of Coordinated Care	Integrated, multidisciplinary, and continuous care across sectors is essential for improving outcomes, community integration, and housing stability (Buccieri et al., 2018; Estrella et al., 2021).

1.7 References

Adshead, C. D., Norman, A., & Holloway, M. (2021). The inter-relationship between acquired brain injury, substance use and homelessness; the impact of adverse childhood experiences: an interpretative phenomenological analysis study. *Disability and Rehabilitation*, *43*(17), 2411–2423.

Andelic, N., Arango-Lasprilla, J. C., Perrin, P. B., Sigurdardottir, S., Lu, J., Landa, L. O., Forslund, M. V, & Roe, C. (2016). Modeling of community integration trajectories in the first five years after traumatic brain injury. *Journal of Neurotrauma*, *33*(1), 95–100.

Andelic, N., Sigurdardottir, S., Schanke, A.-K., Sandvik, L., Sveen, U., & Roe, C. (2010). Disability, physical health and mental health 1 year after traumatic brain injury. *Disability and Rehabilitation*, *32*(13), 1122–1131.

Appleton, J. V, & King, L. (2002). Journeying from the philosophical contemplation of constructivism to the methodological pragmatics of health services research. *Journal of Advanced Nursing*, *40*(6), 641–648.

Argintaru, N., Chambers, C., Gogosis, E., Farrell, S., Palepu, A., Klodawsky, F., & Hwang, S. W. (2013). A cross-sectional observational study of unmet health needs among homeless and vulnerably housed adults in three Canadian cities. *BMC Public Health*, *13*(1), 1–9.

Arntzen, C., & Hamran, T. (2016). Stroke survivors' and relatives' negotiation of relational and activity changes: A qualitative study. *Scandinavian Journal of Occupational Therapy*, *23*(1), 39–49.

Association of Municipalities of Ontario (AMO). (2025). *AMO launches groundbreaking homelessness study: Ontario at a tipping point with 80,000 homeless*. https://www.amo.on.ca/policy/health-emergency-and-social-services/amo-launches-groundbreaking-homelessness-study-ontario

Aubry, T., Flynn, R. J., Virley, B., & Neri, J. (2013). Social role valorization in community mental health housing: Does it contribute to the community integration and life satisfaction of people with psychiatric disabilities? *Journal of Community Psychology*, *41*(2), 218–235.

Aubry, T., & Myner, J. (2009). Community integration and quality of life: A comparison of persons with psychiatric disabilities in housing programs and community residents who are neighbours. *Canadian Journal of Community Mental Health*, *15*(1), 5–20.

Axon, R. N., Gebregziabher, M., Dismuke, C. E., Hunt, K. J., Yeager, D., Ana, E. J. S., & Egede, L. E. (2016). Differential impact of homelessness on glycemic control in veterans with type 2 diabetes mellitus. *Journal of General Internal Medicine*, *31*, 1331–1337.

Backer, T. E., & Howard, E. A. (2007). Cognitive impairments and the prevention of homelessness: Research and practice review. *The Journal of Primary Prevention*, *28*, 375–388.

Bahari, S. F. (2010). Qualitative versus quantitative research strategies: contrasting epistemological and ontological assumptions. *Sains Humanika*, *52*(1).

Batty, R. A., Rossell, S. L., Francis, A. J. P., & Ponsford, J. (2013). Psychosis following traumatic brain injury. *Brain Impairment*, *14*(1), 21–41.

Beijer, U., Wolf, A., & Fazel, S. (2012). Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, *12*(11), 859–870.

Beydoun, H. A., Szymkowiak, D., Ng, T. K. S., & Tsai, J. (2025). Characteristics of injury deaths among homeless and non-homeless US veterans (2017–2021). *Injury Prevention*.

Biagianti, B., Stocchetti, N., Brambilla, P., & Van Vleet, T. (2020). Brain dysfunction underlying prolonged post-concussive syndrome: A systematic review. *Journal of Affective Disorders*, *262*, 71–76.

Bigler, E. D. (2013). Traumatic brain injury, neuroimaging, and neurodegeneration. *Frontiers in Human Neuroscience*, *7*, 395.

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research in education: An introduction to theory and methods* (3rd ed.). Allyn & Bacon.

Bombardier, C. H., Fann, J. R., Temkin, N. R., Esselman, P. C., Barber, J., & Dikmen, S. S. (2010). Rates of major depressive disorder and clinical outcomes following traumatic brain injury. *Jama*, *303*(19), 1938–1945.

Braaf, S., Ameratunga, S., Christie, N., Teague, W., Ponsford, J., Cameron, P. A., & Gabbe, B. J. (2019). Care coordination experiences of people with traumatic brain injury and their family members in the 4-years after injury: a qualitative analysis. *Brain Injury*, *33*(5), 574–583.

Brenner, L. A., Hostetter, T. A., Barnes, S. M., Stearns-Yoder, K. A., Soberay, K. A., & Forster, J. E. (2017). Traumatic brain injury, psychiatric diagnoses, and suicide risk among Veterans seeking services related to homelessness. *Brain Injury*, *31*(13–14), 1731–1735.

Brookfield, K., & Mead, G. (2016). Physical environments and community reintegration post stroke: Qualitative insights from stroke clubs. *Disability & Society*, *31*(8), 1013–1029.

Buccieri, K. (2016). Integrated Social Housing and Health Care for Homeless and Marginally-Housed Individuals: A Study of the Housing and Homelessness Steering Committee in Ontario, Canada. *Social Sciences*, *5*(2), 15.

Buccieri, K., Oudshoorn, A., Frederick, T., Schiff, R., Abramovich, A., Gaetz, S., & Forchuk, C. (2018). Hospital discharge planning for Canadians experiencing homelessness. *Housing, Care and Support*.

Bushnik, T., Caplan, B., Bogner, J., Brenner, L., To, M. J., O'Brien, K., Palepu, A., Hubley, A. M., Farrell, S., & Aubry, T. (2015). Healthcare utilization, legal incidents, and victimization following traumatic brain injury in homeless and vulnerably housed individuals: a prospective cohort study. *Journal of Head Trauma Rehabilitation*, *30*(4), 270–276.

Callaway, L., Miller, R., & Migliorini, C. (2015). *Transition to supported community living: An environmental scan and qualitative experiences of TAC clients*. Institute for Safety, Compensation and Recovery Research.

Clark, G. A. (1993). Paradigms in science and archaeology. *Journal of Archaeological Research*, *1*(3), 203–234.

Cohen, L., Manion, L., & Morrison, K. (2011). *Planning educational research. Research methods in education*. New York: Routledge Editors.

Cooksley, R., Maguire, E., Lannin, N. A., Unsworth, C. A., Farquhar, M., Galea, C., Mitra, B., & Schmidt, J. (2018). Persistent symptoms and activity changes three months after mild traumatic brain injury. *Australian Occupational Therapy Journal*, *65*(3), 168–175.

Cottrell, K., & Chapman, H. M. (2024). Acquired brain injury (ABI) survivors' experience of occupation and activity during their inpatient stay: a scoping review. *Disability and Rehabilitation*, *46*(20), 4630–4654.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.

Curran, C., Dorstyn, D., Polychronis, C., & Denson, L. (2015). Functional outcomes of community-based brain injury rehabilitation clients. *Brain Injury*, *29*(1), 25–32.

Cusimano, M. D., Saha, A., Zhang, D., Zhang, S., Casey, J., Rabski, J., Carpino, M., & Hwang, S. W. (2021). Cognitive dysfunction, brain volumes, and traumatic brain injury in homeless persons. *Neurotrauma Reports*, *2*(1), 136–148.

Czechowski, K., Sylvestre, J., Gogosis, E., Agha, A., Kerman, N., Polillo, A., Palepu, A., & Hwang, S. W. (2022). Cycles of instability: Proximal and distal influences on residential instability among people with histories of homelessness in three Canadian cities. *Journal of Community Psychology*.

Dewan, M. C., Rattani, A., Gupta, S., Baticulon, R. E., Hung, Y.-C., Punchak, M., Agrawal, A., Adeleye, A. O., Shrime, M. G., & Rubiano, A. M. (2018). Estimating the global incidence of traumatic brain injury. *Journal of Neurosurgery*, *130*(4), 1080–1097.

Douglas, J. (2020). Loss of friendship following traumatic brain injury: A model grounded in the experience of adults with severe injury. *Neuropsychological Rehabilitation*.

Douglas, J. M. (2018). The things that help, the things that get in the way: working together to improve outcome following acquired brain injury. *Brain Impairment*, *19*(3), 258–269.

Draper, E. C., Burgess, H. J., Chisholm, C., Barker, C., & Mazerolle, E. L. (2024). Sharing the neuroscience of living with housing instability: Collaborating with front-line workers to co-create a knowledge translation activity. *Journal of Community & Applied Social Psychology*, *34*(2), e2781.

Echenberg, H., & Munn-Rivard, L. (2020). *Defining and enumerating homelessness in Canada. Library of Parliament*.

Ecker, J., & Aubry, T. (2016). Individual, housing, and neighborhood predictors of psychological integration among vulnerably housed and homeless individuals. *American Journal of Community Psychology*, *58*(1–2), 111–122.

Egan, M., & Restall, G. (2022). The Canadian Model of Occupational Participation (CanMOP). In: Egan M, Restall G, editors. Promoting Occupational Participation: Collaborative Relationship-Focused Occupational Therapy. Canadian Association of Occupational Therapy.

Estrella, M. J., Kirsh, B., Kontos, P., Grigorovich, A., Colantonio, A., Chan, V., & Nalder, E. J. (2021). Critical characteristics of housing and housing supports for individuals with concurrent traumatic brain injury and mental health and/or substance use challenges: a qualitative study. *International Journal of Environmental Research and Public Health*, *18*(22), 12211.

Faul, M., Wald, M. M., Xu, L., & Coronado, V. G. (2010). *Traumatic brain injury in the United States: emergency department visits, hospitalizations, and deaths, 2002-2006*.

Fazel, S., Geddes, J. R., & Kushel, M. (2014). The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, *384*(9953), 1529–1540.

Fazel, S., Khosla, V., Doll, H., & Geddes, J. (2008). The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS Medicine*, *5*(12), e225.

Foote, M. Q., & Gau Bartell, T. (2011). Pathways to equity in mathematics education: How life experiences impact researcher positionality. *Educational Studies in Mathematics*, *78*, 45–68.

Friesinger, J. G., Topor, A., Bøe, T. D., & Larsen, I. B. (2019). Studies regarding supported housing and the built environment for people with mental health problems: A mixed-methods literature review. *Health & Place*, *57*, 44–53.

Fu, T. S., Jing, R., Fu, W. W., & Cusimano, M. D. (2016). Epidemiological trends of traumatic brain injury identified in the emergency department in a publicly-insured population, 2002-2010. *PloS One*, *11*(1), e0145469.

Gaetz, S., Barr, C., Friesen, A., Harris, B., Hill, C., Kovacs-Burns, K., Pauly, B., Pearce, B., Turner, A., & Marsolais, A. (2012). Canadian definition of homelessness. *Toronto: Canadian Observatory on Homelessness Press.*, 1–5.

Gaetz, S., Dej, E., Richter, T. R., & Redman, M. (2016). M. The State of homelessness in Canada 2016. Canadian Observatory on Homelessness. *Canadian Alliance to End Homelessness*.

Gagnon, A., Lin, J., & Stergiou-Kita, M. (2016). Family members facilitating community re-integration and return to productivity following traumatic brain injury–motivations, roles and challenges. *Disability and Rehabilitation*, *38*(5), 433–441.

Gerber, G. J., Gargaro, J., & McMackin, S. (2016). Community integration and health-related quality-of-life following acquired brain injury for persons living at home. *Brain Injury*, *30*(13–14), 1552–1560.

Graff, H. J., Christensen, U., Poulsen, I., & Egerod, I. (2018). Patient perspectives on navigating the field of traumatic brain injury rehabilitation: a qualitative thematic analysis. *Disability and Rehabilitation*, *40*(8), 926–934.

Grix, J. (2018). *The foundations of research*. Bloomsbury Publishing.

Guan, B., Anderson, D. B., Chen, L., Feng, S., & Zhou, H. (2023). Global, regional and national burden of traumatic brain injury and spinal cord injury, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019. *BMJ Open*, *13*(10), e075049.

Guba, E. (1990). The alternative paradigm dialog. In Guba E. (ed.). *The Paradigm Dialog, Sage, Newbury Park, CA,* 17–30.

Hall, A., Grohn, B., Nalder, E., Worrall, L., & Fleming, J. (2012). A mixed methods study of the experience of transition to the community of working-aged people with non-traumatic brain injury. *Brain Impairment*, *13*(1), 85–98.

Harvey, J. (2017). *A sociological approach to acquired brain injury and identity*. Routledge.

Heerde, J. A., & Hemphill, S. A. (2019). Exploration of associations between family and peer risk and protective factors and exposure to physically violent behavior among homeless youth: A meta-analysis. *Psychology of Violence*, *9*(5), 491.

Hiploylee, C., Dufort, P. A., Davis, H. S., Wennberg, R. A., Tartaglia, M. C., Mikulis, D., Hazrati, L.-N., & Tator, C. H. (2017). Longitudinal study of postconcussion syndrome: not everyone recovers. *Journal of Neurotrauma*, *34*(8), 1511–1523.

Hodson, T., Gustafsson, L., & Cornwell, P. (2023). The healthcare experiences of people with mild stroke in Australia. *International Journal of Health Promotion and Education*, *61*(5), 255–265.

Hodson, T., Gustafsson, L., Cornwell, P., & Love, A. (2017). Post-acute hospital healthcare services for people with mild stroke: a scoping review. *Topics in STroke RehabiliTaTion*, *24*(4), 288–298.

Hou, Y., Zhou, A., Brooks, L., Reid, D., Turkstra, L., & MacDonald, S. (2024). Rehabilitation access for individuals with cognitive-communication challenges after traumatic brain injury: A co-design study with persons with lived experience. *International Journal of Language & Communication Disorders*, *59*(2), 648–664.

Hunt, A. W., Turner, G. R., Polatajko, H., Bottari, C., & Dawson, D. R. (2013). Executive function, self-regulation and attribution in acquired brain injury: A scoping review. *Neuropsychological Rehabilitation*, *23*(6), 914–932.

Hwang, S. W., Chambers, C., Chiu, S., Katic, M., Kiss, A., Redelmeier, D. A., & Levinson, W. (2013). A comprehensive assessment of health care utilization among homeless adults under a system of universal health insurance. *American Journal of Public Health*, *103*(S2), S294–S301.

Hwang, S. W., Colantonio, A., Chiu, S., Tolomiczenko, G., Kiss, A., Cowan, L., Redelmeier, D. A., & Levinson, W. (2008). The effect of traumatic brain injury on the health of homeless people. *Cmaj*, *179*(8), 779–784.

Hwang, S. W., & Henderson, M. J. (2010). Health care utilization in homeless people: translating research into policy and practice. *Agency for Healthcare Research and Quality Working Paper*, *10002*.

Ibarra, S., Parrott, D., Waldman, W., Hammond, F. M., Dillahunt-Aspillaga, C., & Trexler, L. (2020). Provision of resource facilitation services for individuals with acquired brain injury across the United States: results of a 2018 resource facilitator provider survey. *Brain Injury*, *34*(6), 732–740.

Ilie, G., Boak, A., Adlaf, E. M., Asbridge, M., & Cusimano, M. D. (2013). Prevalence and correlates of traumatic brain injuries among adolescents. *Jama*, *309*(24), 2550–2552.

Infrastructure Canada. (2019). *Reaching Home: Canada's Homelessness Strategy Directives* . https://housing-infrastructure.canada.ca/homelessness-sans-abri/directives-eng.html

Ishibe, N., Wlordarczyk, R. C., & Fulco, C. (2009). Overview of the institute of medicine's committee search strategy and review process for gulf war and health: long-term consequences of traumatic brain injury. *The Journal of Head Trauma Rehabilitation*, *24*(6), 424–429.

Jaffee, M. S., Girard, P. D., & George, K. (2009). Acute clinical care and care coordination for traumatic brain injury within Department of Defense. *Journal of Rehabilitation Research and Development*, *46*(6), 655.

James, S. L., Theadom, A., Ellenbogen, R. G., Bannick, M. S., Montjoy-Venning, W., Lucchesi, L. R., Abbasi, N., Abdulkader, R., Abraha, H. N., & Adsuar, J. C. (2019). Global, regional, and national burden of traumatic brain injury and spinal cord injury, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Neurology*, *18*(1), 56–87.

Jones, A. A., Vila-Rodriguez, F., Leonova, O., Langheimer, V., Lang, D. J., Barr, A. M., Procyshyn, R. M., Smith, G. N., Schultz, K., & Buchanan, T. (2015). Mortality from treatable illnesses in marginally housed adults: a prospective cohort study. *BMJ Open*, *5*(8), e008876.

Kapoor, A., Lanctôt, K. L., Bayley, M., Kiss, A., Herrmann, N., Murray, B. J., & Swartz, R. H. (2017). "Good outcome" isn't good enough: cognitive impairment, depressive symptoms, and social restrictions in physically recovered stroke patients. *Stroke*, *48*(6), 1688–1690.

Kerman, N., Sirohi, R., Curwood, S. E., & Trainor, J. (2017). Canadian service providers' perceptions of barriers and support gaps in housing and mental health. *Canadian Journal of Community Mental Health*, *36*(Special Issue), 61–75.

Konrad, C., Geburek, A. J., Rist, F., Blumenroth, H., Fischer, B., Husstedt, I., Arolt, V., Schiffbauer, H., & Lohmann, H. (2011). Long-term cognitive and emotional consequences of mild traumatic brain injury. *Psychological Medicine*, *41*(6), 1197–1211.

Kroll, T., & Neri, M. (2003). Experiences with care co-ordination among people with cerebral palsy, multiple sclerosis, or spinal cord injury. *Disability and Rehabilitation*, *25*(19), 1106–1114.

Kureshi, N., Clarke, D. B., & Feng, C. (2023). Association between traumatic brain injury and mental health care utilization: evidence from the Canadian Community Health Survey. *Injury Epidemiology*, *10*(1), 16.

Laliberté, M., E. Feldman, D., Williams-Jones, B., & Hunt, M. (2018). Operationalizing wait lists: strategies and experiences in three hospital outpatient physiotherapy departments in Montreal. *Physiotherapy Theory and Practice*, *34*(11), 872–881.

Larsson-Lund, M., Pettersson, A., & Strandberg, T. (2022). Team-based rehabilitation after traumatic brain injury: a qualitative synthesis of evidence of experiences of the rehabilitation process. *Journal of Rehabilitation Medicine*, *54*, 1409.

Lebrun-Harris, L. A., Baggett, T. P., Jenkins, D. M., Sripipatana, A., Sharma, R., Hayashi, A. S., Daly, C. A., & Ngo-Metzger, Q. (2013). Health status and health care experiences among homeless patients in federally supported health centers: findings from the 2009 patient survey. *Health Services Research*, *48*(3), 992–1017.

Ljungholm, L., Edin-Liljegren, A., Ekstedt, M., & Klinga, C. (2022). What is needed for continuity of care and how can we achieve it?–Perceptions among multiprofessionals on the chronic care trajectory. *BMC Health Services Research*, *22*(1), 686.

Maas, A. I. R., Menon, D. K., Adelson, P. D., Andelic, N., Bell, M. J., Belli, A., Bragge, P., Brazinova, A., Büki, A., & Chesnut, R. M. (2017). Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research. *The Lancet Neurology*, *16*(12), 987–1048.

Mahar, C., & Fraser, K. (2011). Barriers to successful community reintegration following acquired brain injury (ABI). *International Journal of Disability Management*, *6*(1), 49–67.

Malhotra, A. K., Jaffe, R. H., Shakil, H., Mathieu, F., Nathens, A. B., Kulkarni, A. V, Diep, C., Yuan, E. Y., Ladha, K. S., & Coyte, P. C. (2024). Unemployment and personal income loss after traumatic brain injury. *JAMA Surgery*, *159*(12), 1415–1422.

Marmot, M., Friel, S., Bell, R., Houweling, T. A. J., Taylor, S., & Health, C. on S. D. of. (2008). Closing the gap in a generation: health equity through action on the social determinants of health. *The Lancet*, *372*(9650), 1661–1669.

Marshall, S., Bayley, M., McCullagh, S., Berrigan, L., Fischer, L., Ouchterlony, D., Rockwell, C., & Velikonja, D. (2018). Guideline for concussion/mild traumatic brain injury and prolonged symptoms: (for adults 18+ years of age). *Ontario Neurotrauma Foundation*.

Marshall, S., Lithopoulos, A., Curran, D., Fischer, L., Velikonja, D., & Bayley, M. (2023). *Living concussion guidelines: guideline for Concussion & Prolonged Symptoms for adults 18 years of age or older*.

Martijn, C., & Sharpe, L. (2006). Pathways to youth homelessness. *Social Science & Medicine*, *62*(1), 1–12.

Martinez, Y. P., Agbor, D. B. A., Panday, P., Ejaz, S., Gurugubelli, S., Prathi, S. K., Nath, T. S., & Prathi, S. (2024). Mood disorders in the wake of traumatic brain injury: a systematic review. *Cureus*, *16*(6).

McHugo, G. J., Krassenbaum, S., Donley, S., Corrigan, J. D., Bogner, J., & Drake, R. E. (2017). The prevalence of traumatic brain injury among people with co-occurring mental health and substance use disorders. *The Journal of Head Trauma Rehabilitation*, *32*(3), E65–E74.

McKenna, K., Scholtes, A., Fleming, J., & Gilbert, J. (2001). The journey through an undergraduate occupational therapy course: Does it change students' attitudes, perceptions and career plans? *Australian Occupational Therapy Journal*, *48*(4), 157–169.

Mejia-Lancheros, C., Lachaud, J., Aubry, T., Wiens, K., O'Campo, P., Stergiopoulos, V., & Hwang, S. W. (2022). Multi-trajectory group profiles of well-being and associated predictors among adults experiencing homelessness and mental illness: Findings from the At Home/Chez Soi study, Toronto site. *Social Psychiatry and Psychiatric Epidemiology*, *57*(1), 67–81.

Mertens, D. M. (2019). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage publications.

Mitchell, M. S., León, C. L. K., Byrne, T. H., Lin, W.-C., & Bharel, M. (2017). Cost of health care utilization among homeless frequent emergency department users. *Psychological Services*, *14*(2), 193.

Mohammed, S. H., & Kinyo, L. (2020). The role of constructivism in the enhancement of social studies education. *Journal of Critical Reviews*, *7*(7), 249–256.

Molloy, C., Conroy, R. M., Cotter, D. R., & Cannon, M. (2011). Is traumatic brain injury a risk factor for schizophrenia? A meta-analysis of case-controlled population-based studies. *Schizophrenia Bulletin*, *37*(6), 1104–1110.

Moore, M., Kiatchai, T., Ayyagari, R. C., & Vavilala, M. S. (2017). Targeted areas for improving health literacy after traumatic brain injury. *Brain Injury*, *31*(13–14), 1876–1881.

Moore, S., Wotus, R., Norman, A., Holloway, M., & Dean, J. (2019). Behind the cloak of competence: brain injury and mental capacity legislation. *The Journal of Adult Protection*, *21*(4), 201–218.

Nalder, E., King, G., Hunt, A. W., Hartman, L. R., Szigeti, Z., Drake, E., Shah, R., Shahzad, M., Resnick, M., & Pereira, G. (2023). Indicators of life success from the perspective of individuals with traumatic brain injury: a scoping review. *Disability and Rehabilitation*, *45*(2), 330–343.

Nguyen, R., Fiest, K. M., McChesney, J., Kwon, C.-S., Jette, N., Frolkis, A. D., Atta, C., Mah, S., Dhaliwal, H., & Reid, A. (2016). The international incidence of traumatic brain injury: a systematic review and meta-analysis. *Canadian Journal of Neurological Sciences*, *43*(6), 774–785.

Nikolaisen, M., Arntzen, C., Eliassen, M., & Gramstad, A. (2024). Rehabilitation models for community integration of adults with acquired brain injury in rural areas: a scoping review. *Rural and Remote Health*, *24*(1), 1–16.

Nilsson, S. F., Nordentoft, M., Fazel, S., & Laursen, T. M. (2020). Homelessness and police-recorded crime victimisation: a nationwide, register-based cohort study. *The Lancet Public Health*, *5*(6), e333–e341.

Norman, A., Curro, V., Holloway, M., Percuklievska, N., & Ferrario, H. (2023). Experiences of individuals with acquired brain injury and their families interacting with community services: a systematic scoping review. *Disability and Rehabilitation*, *45*(4), 739–751.

Odumuyiwa, T., Kennedy, M., Norman, A., Holloway, M., Suffield, F., Forrest, H., & Dicks, H. (2019). Improving access to social care services following acquired brain injury: a needs analysis. *Journal of Long-Term Care*, *2019*, 164–175.

OECD. (2020). Better data and policies to fight homelessness in the OECD. *Policy Brief on Affordable Housing*, 3–11.

Ontario Brain Institute. (2023). *Brain Health in Ontario.* http://www.braininsitute.ca/BrainHealth

Ontario Hospital Association. (2018, July 18). *"A sector on the brink: the case for a significant investment in Ontario's hospitals."* Available at: Www.Oha.Com/Bulletins/2558_OHA_A%20Sector%20on%20the%20Brink_rev.Pdf.

Ornelas, J., Martins, P., Zilhão, M. T., & Duarte, T. (2014). Housing First: An ecological approach to promoting community integration. *European Journal of Homelessness _ Volume*, *8*(1).

Paat, Y.-F., Morales, J., Escajeda, A. I., & Tullius, R. (2021). Insights from the shelter: Homeless shelter workers' perceptions of homelessness and working with the homeless. *Journal of Progressive Human Services*, *32*(3), 263–283.

Palusak, C., Shook, B., Davies, S. C., & Lundine, J. P. (2022). A scoping review to inform care coordination strategies for youth with traumatic brain injuries: Care coordination personnel. *International Journal of Care Coordination*, *25*(1), 21–38.

Passalent, L. A., Landry, M. D., & Cott, C. A. (2010). Exploring wait list prioritization and management strategies for publicly funded ambulatory rehabilitation services in Ontario, Canada: further evidence of barriers to access for people with chronic disease. *Healthcare Policy*, *5*(4), e139.

Peng, W., Yang, J., Yang, B., Wang, L., Xiong, X., & Liang, Q. (2014). Impact of statins on cognitive deficits in adult male rodents after traumatic brain injury: a systematic review. *BioMed Research International*, *2014*.

Poremski, D., Harris, D. W., Kahan, D., Pauly, D., Leszcz, M., O'Campo, P., Wasylenki, D., & Stergiopoulos, V. (2016). Improving continuity of care for frequent users of emergency departments: service user and provider perspectives. *General Hospital Psychiatry*, *40*, 55–59.

Pressman, H. T. (2007). Traumatic brain injury rehabilitation: case management and insurance-related issues. *Physical Medicine and Rehabilitation Clinics of North America*, *18*(1), 165–174.

Pulla, V., & Carter, E. (2018). Employing interpretivism in social work research. *International Journal of Social Work and Human Services Practice*, *6*(1), 9–14.

Rabinowitz, A. R., & Levin, H. S. (2014). Cognitive sequelae of traumatic brain injury. *Psychiatric Clinics*, *37*(1), 1–11.

Rao, D. P., McFaull, S., Thompson, W., & Jayaraman, G. C. (2018). At-a-glance-Traumatic brain injury management in Canada: changing patterns of care. *Health Promotion and Chronic Disease Prevention Canada*, *38*(3), 147–150.

Renne, A., Proaño-Zamudio, J. A., Pinkes, N., Sanchez, S. E., Velmahos, G. C., Salim, A., Herrera-Escobar, J. P., & Hwabejire, J. O. (2023). Loss of independence after traumatic injury: a patient-centered study. *Surgery*, *174*(4), 1021–1025.

Richard, L., Hwang, S. W., Forchuk, C., Nisenbaum, R., Clemens, K., Wiens, K., Booth, R., Azimaee, M., & Shariff, S. Z. (2019). Validation study of health administrative data algorithms to identify individuals experiencing homelessness and estimate population prevalence of homelessness in Ontario, Canada. *BMJ Open*, *9*(10), e030221.

Riggio, S., & Wong, M. (2009). Neurobehavioral sequelae of traumatic brain injury. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine: A Journal of Translational and Personalized Medicine*, *76*(2), 163–172.

Rigney, G., Leith, J., Lennon, M., Reeves, A., & Chrisinger, B. (2022). The association of traumatic brain injury with neurologic and psychiatric illnesses among individuals experiencing homelessness: a systematic review and meta-analysis. *Journal of Health Care for the Poor and Underserved*, *33*(2), 685–701.

Rowe, W. E. (2014). Positionality. *The SAGE Encyclopedia of Action Research*, *628*, 627–628.

Saleem, A., Kausar, H., & Deeba, F. (2021). Social constructivism: A new paradigm in teaching and learning environment. *Perennial Journal of History*, *2*(2), 403–421.

Savin-Baden, M., & Major, C. H. (2023). *Qualitative research: The essential guide to theory and practice*. Taylor & Francis.

Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. *Handbook of Qualitative Research*, *1*(1994), 118–137.

Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, *5*(9), 9–16.

Seale, J. V, Fallaize, R., & Lovegrove, J. A. (2016). Nutrition and the homeless: the underestimated challenge. *Nutrition Research Reviews*, *29*(2), 143–151.

Shaikh, N. M., Kersten, P., Siegert, R. J., & Theadom, A. (2019). Developing a comprehensive framework of community integration for people with acquired brain injury: a conceptual analysis. *Disability and Rehabilitation*, *41*(14), 1615–1631.

Sharma, U., & Bansal, D. (2017). Constructivism as a paradigm for teaching and learning. *International Journal of Physical Education, Sports and Health*, *4*(5), 209–212.

Shier, M. L., Jones, M. E., & Graham, J. R. (2012). Employment difficulties experienced by employed homeless people: labor market factors that contribute to and maintain homelessness. *Journal of Poverty*, *16*(1), 27–47.

Shipley, J., Luker, J., Thijs, V., & Bernhardt, J. (2018). The personal and social experiences of community-dwelling younger adults after stroke in Australia: a qualitative interview study. *BMJ Open*, *8*(12), e023525.

Silverberg, N. D., Panenka, W. J., & Iverson, G. L. (2018). Work productivity loss after mild traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*, *99*(2), 250–256.

Solovieva, T. I., & Walls, R. T. (2014). Barriers to Traumatic Brain Injury Services and Supports in Rural Setting. *Journal of Rehabilitation*, *80*(4).

Statistics Canada. (2023). *Homelessness: How does it happen?* https://www.statcan.gc.ca/o1/en/plus/5170-homelessness-how-does-it-happen

Stergiopoulos, V., Gozdzik, A., O'Campo, P., Holtby, A. R., Jeyaratnam, J., & Tsemberis, S. (2014). Housing First: exploring participants' early support needs. *BMC Health Services Research*, *14*(1), 1–15.

Stubbs, J. L., Thornton, A. E., Gicas, K. M., O'Connor, T. A., Livingston, E. M., Lu, H. Y., Mehta, A. K., Lang, D. J., Vertinsky, A. T., & Field, T. S. (2022). Characterizing traumatic brain injury and its association with losing stable housing in a community-based sample. *The Canadian Journal of Psychiatry*, *67*(3), 207–215.

Stubbs, J. L., Thornton, A. E., Sevick, J. M., Silverberg, N. D., Barr, A. M., Honer, W. G., & Panenka, W. J. (2020). Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. *The Lancet Public Health*, *5*(1), e19–e32.

Svoboda, T., & Ramsay, J. T. (2014). High rates of head injury among homeless and low-income housed men: a retrospective cohort study. *Emergency Medicine Journal*, *31*(7), 571–575.

Sylvestre, J., Ollenberg, M., & Trainor, J. (2009). A model of housing stability for people with serious mental illness. *Canadian Journal of Community Mental Health*, *28*(1), 195–207.

Theadom, A., Starkey, N., Barker-Collo, S., Jones, K., Ameratunga, S., Feigin, V., & Group, B. R. (2018). Population-based cohort study of the impacts of mild traumatic brain injury in adults four years post-injury. *PloS One*, *13*(1), e0191655.

To, M. J., O'Brien, K., Palepu, A., Hubley, A. M., Farrell, S., Aubry, T., Gogosis, E., Muckle, W., & Hwang, S. W. (2015). Healthcare utilization, legal incidents, and victimization following traumatic brain injury in homeless and vulnerably housed individuals: a prospective cohort study. *The Journal of Head Trauma Rehabilitation*, *30*(4), 270–276.

To, M. J., Palepu, A., Aubry, T., Nisenbaum, R., Gogosis, E., Gadermann, A., Cherner, R., Farrell, S., Misir, V., & Hwang, S. W. (2016). Predictors of homelessness among vulnerably housed adults in 3 Canadian cities: a prospective cohort study. *BMC Public Health*, *16*(1), 1–12.

Togher, L., Douglas, J., Turkstra, L. S., Welch-West, P., Janzen, S., Harnett, A., Kennedy, M., Kua, A., Patsakos, E., & Ponsford, J. (2023). INCOG 2.0 guidelines for cognitive rehabilitation following

traumatic brain injury, part IV: cognitive-communication and social cognition disorders. *The Journal of Head Trauma Rehabilitation*, *38*(1), 65–82.

Topolovec-Vranic, J., Ennis, N., Colantonio, A., Cusimano, M. D., Hwang, S. W., Kontos, P., Ouchterlony, D., & Stergiopoulos, V. (2012). Traumatic brain injury among people who are homeless: a systematic review. *BMC Public Health*, *12*(1), 1–8.

Topolovec-Vranic, J., Schuler, A., Gozdzik, A., Somers, J., Bourque, P.-É., Frankish, C. J., Jbilou, J., Pakzad, S., Lazgare, L. I. P., & Hwang, S. W. (2017). The high burden of traumatic brain injury and comorbidities amongst homeless adults with mental illness. *Journal of Psychiatric Research*, *87*, 53–60.

Torregrossa, W., Raciti, L., Rifici, C., Rizzo, G., Raciti, G., Casella, C., Naro, A., & Calabrò, R. S. (2023). Behavioral and psychiatric symptoms in patients with severe traumatic brain injury: a comprehensive overview. *Biomedicines*, *11*(5), 1449.

Turner-Stokes, L. (2008). Evidence for the effectiveness of multi-disciplinary rehabilitation following acquired brain injury: a synthesis of two systematic approaches. *Journal of Rehabilitation Medicine*, *40*(9), 691–701.

UN- Habitat. (2024). State of efforts to progressively realize adequate housing for all. *United Nations Publication*.

Walsh, M. E., Galvin, R., Loughnane, C., Macey, C., & Horgan, N. F. (2015). Factors associated with community reintegration in the first year after stroke: a qualitative meta-synthesis. *Disability and Rehabilitation*, *37*(18), 1599–1608.

Whelan-Goodinson, R., Ponsford, J., Johnston, L., & Grant, F. (2009). Psychiatric disorders following traumatic brain injury: their nature and frequency. *The Journal of Head Trauma Rehabilitation*, *24*(5), 324–332.

White, B. M., & Newman, S. D. (2015). Access to primary care services among the homeless: a synthesis of the literature using the equity of access to medical care framework. *Journal of Primary Care & Community Health*, *6*(2), 77–87.

William, F. K. A. (2024). Interpretivism or constructivism: Navigating research paradigms in social science research. *International Journal of Research Publications*, *143*(1), 134–138.

Williams, W. (2012). *Repairing shattered lives: brain injury and its implications for criminal justice.* Centre for Clinical Neuropsychology Research, University of Exeter.

Williamson, K. (2006). Research in constructivist frameworks using ethnographic techniques. *Library Trends*, *55*(1), 83–101.

Wong, Y.-L. I., & Solomon, P. L. (2002). Community integration of persons with psychiatric disabilities in supportive independent housing: A conceptual model and methodological considerations. *Mental Health Services Research*, *4*, 13–28.

Ylvisaker, M., Mcpherson, K., Kayes, N., & Pellett, E. (2008). Metaphoric identity mapping: Facilitating goal setting and engagement in rehabilitation after traumatic brain injury. *Neuropsychological Rehabilitation*, *18*(5–6), 713–741.

Zhao, Y., Peng, Q., Strome, T., Weldon, E., Zhang, M., & Chochinov, A. (2015). Bottleneck detection for improvement of emergency department efficiency. *Business Process Management Journal*, *21*(3), 564–585.

CHAPTER 2: Exploring the Influences of Traumatic Brain Injury (TBI) on the Experiences of Individuals Who Are Homeless or Unstably Housed: A Scoping Review

This chapter is the accepted version of the manuscript to be published in *Disability and Rehabilitation*. The manuscript has been prepared in accordance with the journal's requirements, but the numbering of the tables and figures has been modified for the thesis.

I acknowledge the following people who made contributions to this study:

Ramin Banimahdi designed the study, with Katrine Sauvé-Schenk providing support. Ramin Banimahdi, Mahsa Mohammadzadeh, and Katrine Sauvé-Schenk assessed articles for eligibility. Ramin Banimahdi extracted and analyzed the data and drafted the manuscript with input from all authors (Ramin Banimahdi, Katrine Sauvé-Schenk, Mary Egan, John Sylvestre, and Mahsa Mohammadzadeh). All authors contributed to the interpretation of the findings, revised the manuscript for critically important intellectual content, and approved the final version for publication.

Exploring the Influences of Traumatic Brain Injury (TBI) on the Experiences of Individuals Who Are Homeless or Unstably Housed: A Scoping Review

Ramin Banimahdi[1*], Mahsa Mohammadzadeh[1], Mary Egan[1], John Sylvestre[2,3], Katrine Sauvé-Schenk[1,3]

1. School of Rehabilitation Sciences, University of Ottawa, Ottawa, ON, Canada
2. School of Psychology, University of Ottawa, Ottawa, ON, Canada
3. Centre for Research on Educational and Community Services, University of Ottawa, Ottawa, ON, Canada

2.1 Abstract

Purpose: To identify the challenges and needs experienced by the homeless or unstably housed population related to traumatic brain injury (TBI), along with the recommendations for addressing them.

Methods: A scoping review was conducted through a systematic search of five electronic databases to identify peer-reviewed articles that met eligibility criteria. Two independent reviewers conducted a two-step process, assessing titles/abstracts and full articles respectively, using predefined inclusion and exclusion criteria.

Results: Of the 25 articles included in the review, 21 used quantitative approaches, two used mixed methods, and two employed qualitative methodology. TBI influences various aspects of life in the homeless population, including health, social lives, and service utilization. To address these challenges, routine TBI screenings in homeless care facilities and improved access to neuro-specific rehabilitation are recommended. These measures, along with considering homelessness risk factors in TBI treatment, could enhance social functioning and prevent future homelessness.

Conclusion: Findings from this scoping review showed that TBI negatively impacts different aspects of the lives of homeless or unstably housed individuals and imposes an additional burden on them to acquire or maintain stable housing. Future qualitative studies are required to better understand the real-world challenges they face and to develop more practical solutions.

Keywords:

Traumatic Brain Injury (TBI); Homelessness; Housing Instability; Housing; Sequelae

2.2 Introduction

Approximately 330 million people worldwide are estimated to be homeless, representing one of the most severe forms of housing and social exclusion (1,2). People with lived experience of homelessness might encounter numerous social challenges, including unemployment (3), poverty (4), food insecurity (5), social exclusion (6), and stigma (7). They are also much more likely to experience mental and physical disorders than the general population, including psychotic disorders, major depression, drug and alcohol dependence (8), and infectious diseases, including HIV, hepatitis C, and tuberculosis (9). In addition, the mortality rate of homeless and unstably housed individuals is higher than the general population (10).

Traumatic brain injury (TBI) is an under-recognized public health problem in the health trajectories of the homeless population (11). TBI is defined as physical damage to the brain tissues due to an external force, leading to temporary or constant disruption in the brain's normal function (12). It is estimated that approximately 69 million people worldwide experience TBI from all causes each year, resulting in an economic burden of about $400 billion globally (11,13).

Literature has shown that the lifetime prevalence of TBI in homeless and unstably housed individuals is between 2.5 times and 4.0 times higher than estimates in the general population.

Moreover, the lifetime prevalence of moderate or severe TBI in this population is nearly ten times higher than in the general population (14,15). More than half of homeless individuals have a history of TBI, and nearly one quarter have a history of moderate or severe TBI (16,17). Studies from both Canada and the UK further indicate that more than 70% of homeless individuals experienced TBI prior to the onset of homelessness (18,19).

People living in precarious housing situations or experiencing homelessness who have had a TBI have high utilization of healthcare services. Studies have shown that roughly 77 percent of homeless individuals reported at least one hospital visit, including emergency care or hospitalization, in the preceding year (20). Additionally, a substantial number of homeless and vulnerably housed individuals rely on emergency visits and hospital admissions to meet their primary care needs, sometimes several times within a given year (21).

Individuals with TBI who experience homelessness or are unstably housed also rely on social services, such as income support programs, food banks and soup kitchens, and housing services to address their basic needs (22,23). These support needs extend beyond immediate services, as shown in prior research evaluating the transition expectations and experiences of individuals with TBI from a hospital to a housing setting. This research demonstrated the importance of access to stable housing and the need for coordinated transition planning. These considerations apply both to individuals who have recently sustained a TBI and are moving from hospital or rehabilitation into the community, and to those living with long-standing injuries who may transition across various healthcare and social service settings over time (24).

Housing First is considered the preferred method for addressing homelessness and housing instability in numerous regions globally. It is a recovery-focused strategy for addressing homelessness that prioritizes rapidly transitioning individuals experiencing homelessness into

permanent, independent housing, without any prerequisites, and the provision of necessary services and support. Research on homeless and vulnerably housed individuals has shown that Housing First programs, which provide housing subsidies and support for independent living, enable the vast majority of people with serious mental illness and chronic homelessness histories to obtain and maintain stable housing (25,26).

While this model has been associated with positive outcomes, such as housing stability, enhanced quality of life, community integration, and reduced service use among participants, a history of TBI was significantly associated with a higher likelihood of experiencing poorer housing stability, lower quality of life, reduced community functioning, and higher substance use severity compared to those without TBI (27–29). Additionally, those with coexisting TBI exhibited unique patterns of service utilization; they depended more heavily on emergency department services, family doctors and criminal justice services (30).

These findings highlight that current health and social care systems are not well-equipped to adequately support the complex needs of individuals who experience both TBI and homelessness. There is a pressing need for healthcare and social service organizations to better understand TBI and address the unique situations and support requirements of homeless individuals with concurrent TBI (30,31).

The objective of this scoping review was, therefore, to better understand how TBI influences the experiences of individuals who are homeless or unstably housed. It explicitly identified the challenges and needs experienced by the homeless population that may be related to TBI, along with the recommendations for addressing them. The review question was: How does TBI influence the experience of individuals who are homeless or unstably housed?

2.3 Methods

This scoping review was conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews (32). The data were reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (33). The protocol for this scoping review is registered in the Open Science Framework (OSF) (https://osf.io/8qva4/).

2.3.1 Inclusion/Exclusion Criteria

This review included studies that 1) had a sample that was exclusively comprised of adult individuals who were homeless, unstably housed, or seeking services for homeless people at the time of assessment (or included a clearly identifiable subgroup of individuals who were homeless, unstably housed, or seeking services for homeless people at the time of assessment and data was presented separately for this subgroup), and 2) reported any types of traumatic brain injury, at all levels of severity (e.g., mild, moderate, or severe) in their sample. Finally, the studies must have discussed specific challenges or needs that could result from TBI among the homeless or unstably housed individuals. However, providing specific recommendations at the practice or system level was not an inclusion criterion. This scoping review considered peer-reviewed literature, encompassing quantitative, qualitative, and mixed-methods study designs.

In this review, the term homelessness was used under the definition of "the situation of an individual or family without stable, permanent, and acceptable housing, or lacking the immediate prospect, means, and ability to acquire it" (34). Unstably housed was also understood as individuals and families who are not technically homeless, but their current housing situations are dangerously lacking security or stability, and so are considered to be at risk of homelessness (34).

This review excluded studies that were not published in English, were not peer-reviewed, or were not original research studies providing distinct data. We limited inclusion to peer-reviewed publications to ensure that the included articles met minimum standards of methodological quality and scientific rigor. Non–peer-reviewed literature (e.g., reports, dissertations, or conference proceedings) may lack adequate quality assurance and therefore were excluded. We restricted the review to English-language studies due to feasibility constraints (translation resources were unavailable) and to minimize the risk of errors in data interpretation.

2.3.2 Search Strategy

The main keywords used in this review were traumatic brain injury AND homeless persons, along with their synonyms and related terms. Keywords from the titles and abstracts of relevant articles, along with their index terms, were utilized to create a comprehensive search strategy. The search strategy, including all identified keywords and index terms related to the research question, was adapted for each included database. The search was performed in MEDLINE (Ovid platform), CINAHL (EBSCOhost platform), Embase (Ovid platform), PsycINFO (Ovid platform), and Web of Science databases (Clarivate platform). The search strategies were developed in collaboration with an academic health sciences librarian experienced in scoping review methods. No date restrictions were applied across the databases to ensure a comprehensive mapping of the available literature. Additionally, reference lists of the pertinent systematic and scoping reviews were reviewed to locate any further relevant studies. The initial search was completed on May 30, 2023, and updated on December 3, 2025. An example of the search strategy is provided in Appendix A.

2.3.3 Study Selection

Following the search of the databases, all identified studies were exported into Covidence Systematic Review Software (35), and duplicates were removed. Two independent reviewers (R.B. and M.M.) screened the titles and abstracts to identify the studies that met the eligibility criteria for full-text screening. Before starting the screening process, the second reviewer (M.M.) received training in the inclusion/exclusion criteria (as specified above). Subsequently, a sample of studies was screened by both reviewers, followed by a discussion to ensure consistency. The reviewers then proceeded to independently screen the retrieved titles and abstracts. When reviewers disagreed on inclusion, a third reviewer (K.S.S) was consulted, and consensus was sought. The reviewers screened the full text of all studies identified as possibly meeting inclusion criteria at the title and abstract screening, using the same approach. Inter-reviewer agreement (proportionate agreement reported by Covidence) was 0.93 for title/abstract screening and 0.83 for full-text review. A comprehensive report of the review process, including the search results, is presented in the PRISMA flow diagram (Figure 2.1).

2.3.4 Data Extraction

Data extraction was guided by the JBI methodology (32). The authors (R.B. and K.S.S.) developed and tested a data extraction form. They piloted the form by independently extracting data from selected studies and comparing information to ensure consistency in the data extracted and how it was documented in the form. Following this pilot phase, data extraction was conducted for all included articles. The key information that was extracted was the author(s), year of publication, origin/country of origin (where the source was published or conducted), aims/purpose, population and sample size (if applicable), methodology/methods, outcomes and

details of the TBI-related challenges/needs, and the recommendations made for responding to them.

2.4 Results

2.4.1 Study Characteristics

Of the 25 articles included in the review, 21 studies were quantitative, two used mixed methods, and two were qualitative. Individual study details can be seen in Table 2.1. The studies ranged in sample size from 8 to 2088 participants. The main categories of information obtained from the studies were overall health sequelae, social sequelae, service utilization, and recommendations for addressing these challenges in individuals with TBI. The following are the summaries of the findings of the articles included under the respective categories or subcategories.

Figure 2.1. PRISMA Flow Diagram

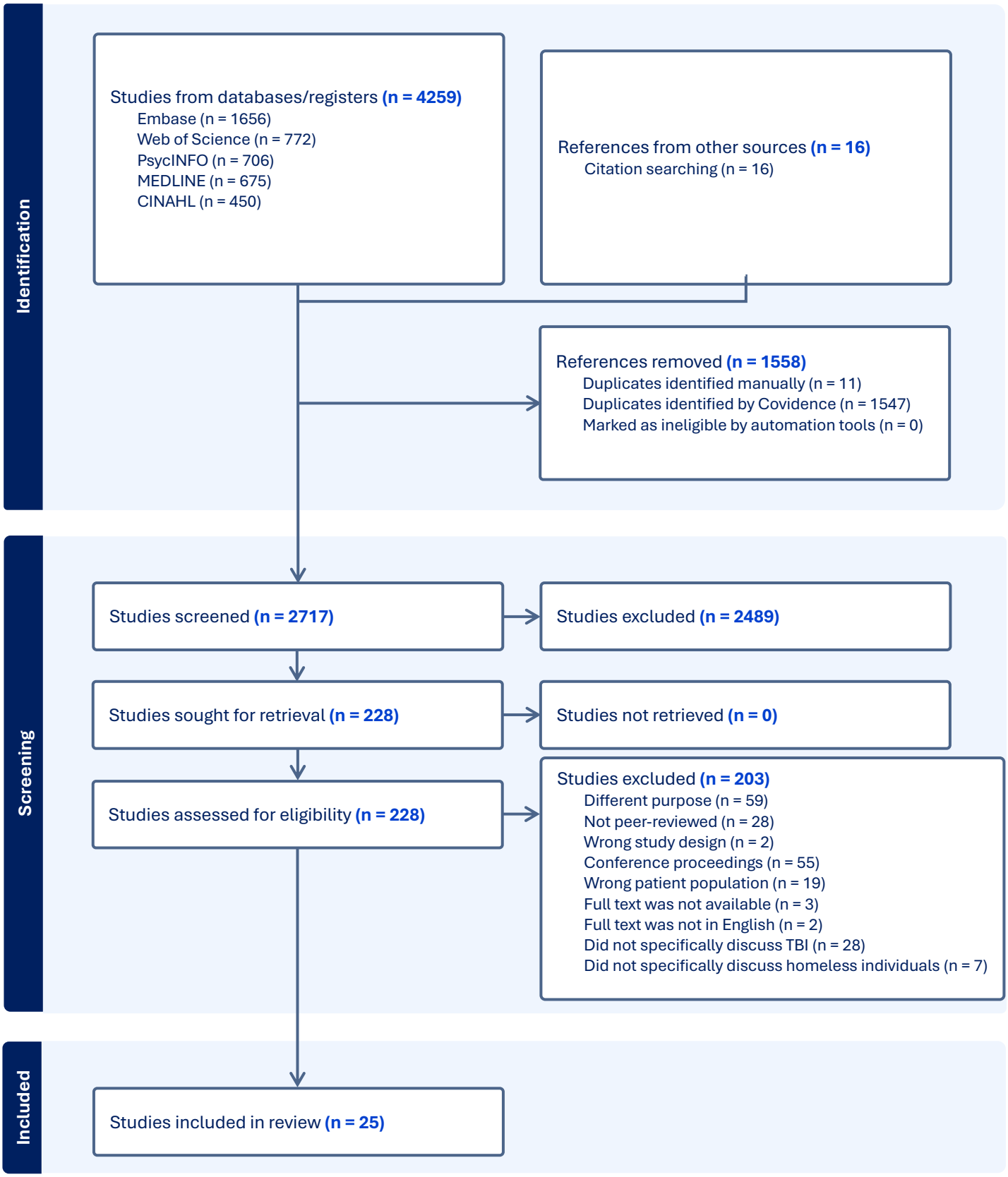


Table 2.1. General study characteristics and design for the final included studies

Author, year, and country of the study	**Research question/ Research objective(s)**	**Study design**	**Population and sample size**	**Specific challenges related to TBI**	**How these needs or challenges are assessed**	**Recommendations made at the level of the frontline workers or professionals**	**System-related recommendations for responding to the needs or challenges**
Valera and Berenbaum, 2003, USA (36)	To determine A) Whether battered women in a sample of both shelter and non-shelter women are sustaining brain injuries from their partners and (B) if so, whether such brain injuries are associated with partner abuse severity, cognitive functioning, or psychopathology	Cross-sectional	99 (Ninety-nine) battered women	Low scores on Trail Making Test Part B, and CVLT, Poor mental health conditions	Trail B test, CVLT test, Structured Clinical Interview for DSM–IV Disorders	No recommendations were made for the TBI population	No recommendations were made for the TBI population
Hwang et al., 2008, Canada (22)	To determine the lifetime prevalence of traumatic brain	A cross-sectional survey design	904 homeless people	Drug problems, poor physical	Addiction Severity Index, SF-12 health survey	Clinicians to routinely ask patients who are homeless about a	Referral to rehabilitation and other appropriate

	injury and its association with current health conditions in a representative sample of homeless people in Toronto, Ontario.			health status, and poor mental health status		history of TBI and its severity. Referral to rehabilitation and other appropriate community services. Providing appropriate living environments.	community services
Andersen et al., 2014, Canada (37)	To examine cognitive performance among a sample of men in a residential unit of an urban homeless shelter and to compare cognitive performance between those with and without a history of TBI.	An exploratory, quantitative study	34 homeless men	Poor results in the attention tasks of RBANS	RBANS	Regular TBI screening in shelters and providing TBI education for shelter staff	An increased awareness of TBI, and its impact on attention is necessary.
Topolovec-Vranic et al., 2014, Canada (38)	To determine the rate, mechanisms and associated outcomes of traumatic brain	Observational study	111 individuals from men's shelter	More likely to have been arrested, to have a lifetime history of	Brain Injury Screening Questionnaire, a semi structured interview	Health care providers may wish to consider patients' risk factors for homelessness	

	injury among men in an urban homeless shelter.			mental illness and to have parental history of substance abuse	screening tool, Self-reported information	and how interventions and treatments for TBI could target social functioning.	
To et al. 2015, Canada (23)	To characterize the associations between a history of TBI and subsequent healthcare utilization, legal incidents, and victimization over a 1-year follow-up period in homeless and vulnerably housed individuals.	Prospective cohort study	1181 homeless and vulnerably housed adults	More likely to be a frequent Emergency Department user, to have reported a hospital admission, to have reported being arrested or incarcerated, to have been victims of physical assault, more likely to have a history of a mental health diagnosis,	Structured, in-person interviews, 12-item Short Form Health Survey, AUDIT, DAST-10	Screen for TBI and manage associated neuropsychological sequelae. Longitudinal assessment of neurocognitive function and rehabilitation is important.	

				be currently smoking and have positive DAST and AUDIT screens.			
Gargaro et al., 2016, Canada (39)	To identify whether clients seeking support from an Assertive Community Treatment Team (ACTT) serving homeless persons with a serious mental illness and/or substance use problems also had a significant history of brain injury, and if awareness could be raised among the team members, about the clinical utility of conducting brain injury	Cross-sectional	48 homeless persons	Greater use of drug and alcohol, more likely to have mental health and cognitive disorders, more suicide attempts, problems in controlling their violent behaviour	The Addictions Severity Index		Specific training needed for clinicians regarding strategies to use to de-escalate aggressive clients and to identify escalation triggers and signs.

	screening in this context.						
Schmitt et al., 2017, Canada (19)	To assess TBI and its consequences using detailed historical and neuroimaging assessments in a community-based cohort of homeless and vulnerably housed participants.	Mixed method study	283 participants from SRO housing	More likely to have been criminally charged, to have lifetime history of alcohol dependence, poorer current mental and physical health, poorer scores on neurocogniti ve test, had lower cortical gray matter, and white matter fractional anisotropy (FA) values	Short-Form 36item Health Survey, Mini-International Neuropsychiat ric Interview, WTAR, Stroop Color-Word Test, HVLT-Revised, rapid Visual Information Processing, Intra Dimensional Extra-Dimensional test, MRI	No recommendations were made for the TBI population	No recommendatio ns were made for the TBI population
Brenner et al., 2017, USA (40)	To explore the differences in negative psychiatric outcomes among Veterans	Longitudin al study	309 veterans seeking homeless services	More mental health diagnoses, more odds of suicide risk	MINI international neuropsychiat ric interview, version 6.0.0		The move towards housing first programs is needed. Implementatio

	with and without a history of traumatic brain injury (TBI) seeking homeless services.						n of measures to evaluate the history of TBI within facilities providing care to the homeless
Topolovec-Vranic et al., 2017, Canada (30)	To characterize the prevalence of self-reported head injury with loss of consciousness (LOC) and associated demographic, clinical and service use factors in a sample of homeless adults with mental illness.	NR	2088 homeless adults with mental illness	Higher odds of mental health disorders, suicidality, higher prevalence of physical health concerns, greater number of ER visits, more likely to had unmet healthcare needs, and had contact with the criminal justice system.	Questionnaires administered by interviewers, MINI 6.0.	No recommendations were made for the TBI population	No recommendations were made for the TBI population

Palladino et al., 2017, USA (41)	To understand the associations between suicide risk and physical, psychological, social and military characteristics among veterans with TBI who are experiencing homelessness.	Binary logistic regression analysis	103 veterans who presented for homeless outreach services	High risk of suicide, higher prevalence of mental health conditions	MINI	No recommendations were made for the TBI population	No recommendations were made for the TBI population
Smirl et al. 2019, Canada (42)	To examine the extent symptoms associated with potential TBI in intimate partner violence (IPV) survivors overlap with sport-related concussions (SRC).		18 women who had experienced intimate partner violence (IPV)	Significant correlations between the BISA score, and cognitive and mental health disorders	BISA, BRIEF-A, CAPS, BECK depression and anxiety inventories	Develop TBI-informed screening tools in woman's shelters	
Adshead, et al. 2021, UK (43)	To seek and gain a more definitive understanding of the inter-relationship of Acquired Brain Injury,	Mixed method study	8 homeless individuals	Cognitive decline, executive dysfunction, mental health problems, and their	BISI, Semi-structured interviews	Routinely screen for the presence of ABI within client groups.	Improved access to neuro-specific rehabilitation services for homeless individuals.

	substance abuse and homelessness by identifying key themes associated with the inter-relationship between these variables.			impacts on everyday life			
Luong et al., 2021, Canada (44)	To examine the effect of a Housing First (HF) intervention and health-related risk factors on incarceration among adults with experiences of homelessness and mental illness.	Longitudinal	508 homeless adults	Frequent ED use, Higher rates of incarceration	Administrative data, Self-reports		Link individuals while in custody with healthcare services in the community
Cusimano et al., 2021, Canada (45)	To examine the relationship between neuroanatomical subsegmentation volumes obtained from T1-weighted MRI images, NP	Cross-sectional	25 homeless persons (9 with TBI) and 26 controls	Poor results on cognitive tests	Demographic form (GIQ), in-depth semi-structured interviews, FTT and GPT tests, Brain MRI	Policies, strategies, and interventions that address the combined effects of TBI and homelessness must be taken into account.	Policies, strategies, and interventions that address the combined effects of TBI and homelessness

	test performance (using the FTT and GPT), and alcohol or drug abuse history (using AUDIT and DAST scores) among homeless individuals with or without TBI.						must be taken into account.
Estrella et al., 2021, Canada (31)	To describe critical characteristics of housing and housing supports for individuals with concurrent TBI and MHSU from the perspectives of service users with TBI and MHSU and housing service providers.	Qualitative description approach	16 homeless service users and 15 housing service providers	Feeling uncertain among service providers regarding their knowledge and expertise on TBI	In-depth semi-structured interviews.		Education and awareness raising for addressing knowledge gaps and attitudes regarding TBI. Partnerships and collaboration were viewed as essential for bridging fragmented systems.
Mejia-Lancheros et al., 2021, Canada (29)	To conduct a multi-dimensional and time-patterned	Secondary data analysis of a	543 participants from the Toronto	Lower likelihood of following a	Well-being trajectory profiles were estimated	No recommendations were made for	No recommendations were made

	analysis to identify distinct well-being trajectory profiles over a 6-year follow-up period among adults experiencing homelessness and mental illness.	randomized controlled trial	site of the At Home Chez Soi study	high well-being profile	using housing stability (assessed using RTLFB questionnaire), QOL (assessed using Lehman's 20-item QOL interview), Community functioning (assessed using the 17-item MCAS), and Substance use severity symptoms (assessed using five-item Global Appraisal of Individual Needs–Short Screener.	the TBI population	for the TBI population
Oakley et al., 2021, USA (46)	To explore the potential effectiveness of TBI screening as a health promotion strategy for	Cross-sectional	18 women shelter residents	Physical, cognitive, and mental health problems, increased service use,	An extended version of the HELPS TBI screening tool and survey of daily	TBI screening for IPV survivors	

	shelter-seeking women with IPV head injuries.			and limited access to services	symptoms and health needs		
Rangu et al., 2022, USA (47)	To investigate the relationship between concussions and medication adherence among homeless adults who have been prescribed medication for a psychiatric disorder.	Secondary data analysis of a survey	247 adults experiencing homelessness	Being non-adherent to their prescribed psychiatric medication	Self-reports	Healthcare providers should consider assessing TBI history in this population when prescribing psychiatric medications. They can provide resources and teach practical strategies for adherence when prescribing medications.	
Stubbs et al., 2022, Canada (48)	To describe the history of TBI in a precariously housed sample and its association with the onset and life-time duration of homelessness and unstable housing.	Secondary data analysis of a prospective observational study	285 homeless or precariously housed participants	TBI closer in time to the first experience of homelessness was significantly associated with a longer lifetime duration of	Structured interviews, BISQ	Identification of persistent sequelae attributable to TBI in homeless and precariously housed individuals may help guide targeted care.	No recommendations were made for the TBI population

				homelessness.			
Keller et al., 2023, USA (49)	To examine the associations between neuropsychological performance, neurobehavioral symptoms, and community reintegration in Veterans.	Secondary data analysis of a randomized controlled trial	89 Veterans at risk for homelessness	Better cognitive performance was associated with better self-reported community reintegration.	CRIS-CAT, NSI, WRAT-IV, MATRICS Consensus Cognitive battery	Veterans may benefit from hybrid interventions aimed at reducing neurobehavioral symptoms and assisting them in reaching relevant community reintegration goals.	
Chevreau et al., 2025, France (50)	To assess the methodological feasibility of conducting a larger scale study, and to increase understanding of the specificities of the homeless population in Paris in terms of cognition and associated factors.	exploratory pilot study	14 individuals experiencing homelessness	Poor performance in measures of working memory, executive functions, and episodic memory, however, cognitive scores did not differ between participants with and without a history of	Semi-structured interviews, BICoQ, MoCA, Digit span, RLRI-16, Rey complex figure, MSCT, 6 Elements test, Verbal fluency, Stroop	Adaptation of cognitive tests for homeless population, and to apprehend cognition with other methods than psychometry, for example, daily life abilities and difficulties, or subjective complaints.	

				TBI, depressive, or anxious syndrome.			
Atkin et.al., 2025, USA (51)	To assess TBI prevalence and cognitive symptoms among homeless individuals across different housing settings.	Cross-sectional	102 patients from three housing strata (sheltered, low-barrier sheltered, and unsheltered)	Cognitive symptoms (difficulties with memory, concentration, speech, etc.),	Open-ended five-question survey adapted from the Ohio State University TBI Identification Method, cognitive symptoms were inquired through self-reports	No recommendations were made for the TBI population	No recommendations were made for the TBI population
Warren et al., 2025, Canada (52)	To identify barriers and facilitators to housing and healthcare services for individuals experiencing homelessness with ABI and concurrent	A participatory action research (PAR) approach	163 stakeholders, of whom 74 had lived experience of ABI and/or homelessness	Pervasive negative attitudes and discrimination toward individuals with ABI, MHSU, and homelessness	Semi-structured focus groups in a one-day workshop	Systematic screening for lifetime ABIs should be implemented during intake for MHSU and homelessness-specific services, improving	

	MHSU disorders.					communication and collaboration between service providers, adopting long-term integrated approaches to care	
Holliday et al., 2025, USA (53)	To examine the frequency of VA service use among homeless NHPI Veterans with histories of TBI across several VA settings, including homeless, justice, emergency, primary care, rehabilitative, and mental health services.	Retrospective analysis of extracted data from the VA Corporate Data Warehouse	12,205 NHPI Veterans experiencing homelessness	Greater use of VA services across all settings among individuals with TBI compared to those without.	VA service use was identified as a Veteran attending a clinical encounter in specified VA service settings	Further consideration of TBI-related education, resources, and augmentations to care for NHPI Veterans experiencing homelessness may be an important consideration.	
Luong et al., 2025, Canada (54)	To identify long-term trajectories of incarceration,	Secondary data analysis of a	549 homeless adults with severe	A history of lifetime TBI was significantly	Used data on incarceration in Ontario provincial		In the provision of housing and mental health services for

	impact of Housing First intervention, and associated predictor factors among people with mental illness and experiences of homelessness who participated in a randomized trial of Housing First in Toronto, Canada.	randomized controlled trial	mental illness	associated with the high incarceratio n trajectory.	correctional facilities provided by the Ontario Ministry of the Solicitor General to ascertain incarceration episodes over the six-year follow-up period.		people who are homeless with mental illness, approaches that directly address criminogenic factors are needed to reduce criminal justice involvement in this population.

ABI, acquired brain injury; AUDIT, alcohol use disorders identification test; BICoQ, brain injury complaint questionnaire; BISA, brain injury severity assessment; BISI, brain injury screening index; Brief- A, behavior rating of executive function– adult version; CAPS, clinician-administered PTSD scale; CRIS-CAT, community reintegration for service members–computer adaptive test; CVLT, the California verbal learning test; DAST, drug abuse screening test; DSM, diagnostic and statistical manual of mental disorders; FTT, finger tapping test; GIQ, general information questionnaire; GPT, grooved pegboard test; IPV, intimate partner violence; MINI, mini international neuropsychiatric interview; MHSU, mental health and/or substance use; MoCa, Montreal Cognitive Assessment; MRI, magnetic resonance imaging; MSCT, modified Wisconsin card sorting test; NSI, neurobehavioral symptom inventory; NR, not reported; RBANS, repeatable battery for the assessment of neuropsychological status; RLRI-16, Rappel libre/Rappel indicé à 16 items (a French adaptation of the Free and Cued Selective Reminding Test); SF, short form; WTAR, Wechsler test of adult reading; WRAT-IV, wide range achievement test

2.4.2 Overall Health Sequelae

The health status of individuals who experienced homelessness and screened positive for TBI is discussed in four separate subcategories: physical health sequela, mental health sequela, cognitive sequela, and impact on everyday activities.

2.4.2.1 Physical Health Sequela. The influence of TBI on the physical health of individuals experiencing homelessness or unstable housing was discussed in seven studies. Seizures, epilepsy, migraine, headache, fatigue, drowsiness, and blurred vision were among the reported physical sequelae resulting from TBI in this population (22,30,41,42,46). Two studies also reported that homeless or unstably housed individuals with TBI experienced poorer general physical health compared with their counterparts without TBI (19,22).

2.4.2.2 Mental Health Sequela. The mental health impacts associated with TBI discussed in the included studies are categorized into four subcategories: mental health disorders, drug and alcohol abuse, risk of suicide, and violent behavior.

2.4.2.2.1 Mental Health Disorders. Mental health disorders among homeless and marginally housed individuals with TBI were discussed in 11 studies. Depression and anxiety were the most commonly reported mental health conditions in this population. Other reported conditions included manic or hypomanic episodes, post-traumatic stress disorder (PTSD), panic disorder, mood disorders with or without psychotic features, general distress, anhedonic depression, and anxious arousal (19,30,36,39–42,46). Moreover, three studies suggested that, in general, homeless and vulnerably housed individuals with TBI experienced poorer mental health than those without TBI, according to the SF-12 health survey and self-report data (22,23,43).

2.4.2.2.2 Drug and Alcohol Abuse. The second category of mental health issues is drug and alcohol abuse, which was discussed in five studies. Hwang et al. reported that a history of moderate or severe TBI was associated with a significantly increased likelihood of alcohol problems (42% vs. 28%) and drug problems (57% vs. 40%) compared to those without a history of TBI (22). Similarly, another study showed that homeless and precariously housed individuals who reported a history of TBI with loss of consciousness (LOC) had higher odds of alcohol (53.1% vs. 35.2%) and drug (54.9% vs. 45.8%) misuse disorders than those with no history of TBI or TBI without LOC (30). Moreover, over a 6-year follow-up period, a history of TBI was significantly associated with a lower likelihood of reduced substance use severity (29).

To et al. also reported that individuals with a history of TBI and homelessness were significantly more likely to be currently smoking and have positive DAST (Drug Abuse Screening Test) and AUDIT (Alcohol Use Disorders Identification Test) screens (23). Finally, Gargaro et al. showed that homeless individuals with TBI in an ACTT program had higher rates of alcohol (46% vs. 14%), intoxication (19% vs. 7%), and drug use, including cocaine (21% vs. 14%) and cannabis (31% vs. 21%), compared to those without TBI. They also reported increased likelihood of using multiple substances and spending money on alcohol and drugs (39).

2.4.2.2.3 Risk of Suicide. Another category within the mental health variables is the risk of suicide among individuals experiencing both homelessness and TBI. This was discussed in three studies, two of which focused on veterans. Topolovec-Vranic et al. found that a history of TBI with LOC among homeless or marginally housed individuals was associated with a history of suicide attempts or recent suicidality (30).

Palladino et al. recruited veterans who presented for homeless outreach services and screened positive for TBI. They concluded that veterans reporting a high risk of suicide also more

frequently experienced TBI-related symptoms such as blurred vision, seizures, and difficulty with memory, problem-solving, and managing stress (41). Finally, Brenner et al. used the MINI International Neuropsychiatric Interview (MINI) among veterans seeking homeless services and reported that those with a history of TBI had 3.6 times the odds of endorsing any suicide risk on the MINI compared to homeless veterans without a history of TBI (40).

2.4.2.2.4 Violent Behavior. Violent behavior, including episodes of rage or violence, was discussed in only one study. Gargaro et al. explained that among individuals experiencing homelessness, those with TBI were more likely to demonstrate violent behavior compared to those without TBI (39).

2.4.2.3 Cognitive Sequela. Another commonly reported symptom among individuals experiencing both homelessness and TBI was cognitive sequelae. Palladino et al. reported that 41.34% of veterans with TBI seeking housing services had memory and problem-solving issues (41). Similarly, Atkin et al. reported that among their homeless participants, out of 73.5 % of the participants who reported an experience of TBI, 62.6% endorsed at least one cognitive symptom (e.g., difficulties with memory, concentration, speech, etc.) (51). Gargaro et al. demonstrated that among homeless individuals looking for a community treatment program (ACTT), 72% of those with TBI had trouble understanding, concentrating, and remembering in the last 30 days compared to those without TBI (39).

Five studies reported on the performance of individuals in standardized cognitive tests. They showed that homeless individuals with TBI had lower scores on the Trail Making Test Part B (Trails B) and The California Verbal Learning Test (CVLT), poorer performance on the Grooved Pegboard Test (GPT) and the Finger Tapping Test (FTT), performed significantly worse on the attention tasks of the Repeatable Battery for the Assessment of Neuropsychological Status

(RBANS) and had significantly poorer scores on the immediate memory test (measured by the Hopkins Verbal Learning Test (HVLT) Revised) compare with the non-TBI group or matched controls (36,37,45). They also showed that cognitive performance scores on other tests, such as response inhibition, sustained attention, and mental flexibility, were generally higher in the group without TBI than in individuals with MRI-confirmed TBI (19). Finally, Chevreau et al. reported that a group of 14 individuals experiencing homelessness, among whom a high proportion had a history of TBI (5 out of 14), demonstrated poor performance on measures of global cognitive efficiency, working and episodic memory, and executive functions. However, the scores did not differ between participants with and without a history of TBI. They interpreted this finding as potentially resulting from their small sample size (50).

2.4.2.4 Impact on Everyday Activities. One specific issue among adults experiencing homelessness who had had TBI was adherence to prescribed psychiatric medications. Rangu et al. reported that homeless adults with a history of TBI had more than twice the odds of being non-adherent to their prescribed psychiatric medication (i.e., failing to take psychiatric medication on the previous day) compared to adults without a TBI history. Furthermore, they found that homeless adults with TBI had six times the odds of non-adherence to prescribed medication for schizophrenia or schizoaffective disorder, four times the odds for PTSD medication, and three times the odds for anxiety disorder medication, compared to those without TBI (47).

Adshead et al. also conducted semi-structured interviews with individuals experiencing both homelessness and TBI to understand the relationship between TBI and homelessness. An important theme from their interviews was cognitive decline and executive dysfunction, which

applied to all participants. They revealed how impairments in memory, planning and organization skills, and emotion regulation impacted participants' everyday lives (43).

2.4.3 Social Sequela

Social challenges among individuals experiencing homelessness or marginal housing who sustained TBI were discussed in various aspects in the included studies. The identified categories from these studies were housing stability and duration of homelessness, contact with the criminal justice system, community reintegration, and attitudes toward and understanding of TBI.

2.4.3.1 Housing Stability and Duration of Homelessness. One study investigated the relationship between the severity and timing of TBI and the total duration of homelessness or precarious housing. The authors found that the first moderate-to-severe TBI occurred significantly closer to the year of first homelessness. Moreover, a shorter interval between the first TBI and the initial episode of homelessness was significantly associated with a longer total duration of homelessness. Similar results were reported for the relationship between the first TBI and the first experience of precarious housing (48). Another study showed that, during a six-year follow-up, a history of TBI was associated with a lower likelihood of an immediate increase in housing stability among homeless or precariously housed individuals (29).

2.4.3.2 Contact with the Criminal Justice System. Contact with criminal justice systems was discussed in five studies, which generally showed that homeless individuals with TBI had significantly more contact with these systems compared to those without TBI. Luong et al. found that among the 508 homeless participants in their study, 220 (43.3%) were incarcerated at least once during the study period (five years), and 66.4% of those incarcerated had a history of TBI

(44). In a later study, Luong et al. reported that a lifetime history of TBI was significantly associated with a high incarceration trajectory (54). Similarly, Topolovec-Vranic et al. found that, among individuals experiencing homelessness, a history of TBI with LOC was associated with increased contact with the criminal justice system (30). The remaining studies also demonstrated that homeless and vulnerably housed adults with TBI were more likely to have been criminally charged than their counterparts without TBI (19,23,38). To et al. highlighted that over a one-year follow-up, participants with a history of TBI were significantly more likely than those without TBI to have been victims of physical assault in the past year. They concluded that a history of TBI was independently associated with being arrested or incarcerated and with being a victim of physical assault (23).

2.4.3.3 Community Reintegration. Among the included studies, only two discussed the concept of community reintegration and functioning. Community reintegration, defined as successfully participating in and adjusting to life at home and in one's community to achieve desired social roles (55,56), was not directly discussed in relation to the experience of TBI among homeless and unstably housed individuals in the included studies. Keller et al. used the CRIS-CAT (Community Reintegration for Service Members-Computer Adaptive Test) to measure three domains of self-reported community reintegration—Extent of Participation, Perceived Limitations, and Satisfaction—among veterans who were unstably housed. Their study, where 89.9% of participants had a history of TBI, revealed a significant association between better attention, executive functioning performance ($r= 0.25$), less severe neurobehavioral symptoms ($r= -0.56$), and improved self-reported community reintegration (49). Mejia-Lancheros et al. similarly found that, over a 6-year follow-up, a history of TBI was

significantly associated with a lower likelihood of early improvements in community functioning and quality of life among homeless or precariously housed individuals (29).

2.4.3.4 Attitudes Towards and Understanding of TBI. This concept was explored in two qualitative studies that used in-depth interviews with individuals experiencing both TBI and homelessness, as well as with health and social service providers. Warren et al. reported that individuals with lived experience perceived pervasive negative attitudes and discrimination toward people with TBI and homelessness within healthcare and housing services (52). Estrella et al. similarly found that service providers often felt uncertain about their knowledge and competence regarding TBI (31). These attitudes and gaps in understanding significantly influenced individuals' access to housing and support services and were described as contributing to re-traumatization within these systems, which could discourage help-seeking and erode trust in services (31,52). Housing service providers also expressed feeling inadequately prepared in terms of their knowledge and attitudes, which posed challenges in delivering effective services. The examples raised by the providers, which made service delivery complicated, were anger outbursts, hoarding behaviors, or dropping in and out of the services (31).

2.4.4 Service Utilization

Service utilization among individuals experiencing both homelessness and TBI was investigated in three studies, focusing on increased service use and unmet health needs. Two studies showed that homeless individuals with TBI were significantly more likely to visit an Emergency Department (ED) and be frequent ED users. Participants with TBI also reported

higher rates of hospital admissions and were more likely to have regular medical doctor appointments compared to those without TBI (23,30). Holliday et al. reported that Veterans experiencing homelessness with a TBI had greater use of Veteran Affairs (VA) services across all VA service settings (e.g., homeless, justice, emergency, primary care, rehabilitative, and mental health services), compared with those without a history of TBI (53). Additionally, Oakley et al. reported that shelter-seeking women who experienced TBI from intimate partner violence (IPV) commonly required support group participation (72.2%), psychiatric treatment (66.7%), counseling services (66.7%), and pain management interventions (61.1%) (46).

The aspect of unmet healthcare needs was discussed in two studies. Topolovec-Vranic et al. found that 56.7% of homeless individuals with TBI and loss of consciousness reported times when they needed healthcare but did not receive it in the past six months (30). Similarly, Oakley et al. demonstrated that two-thirds of individuals who experienced TBI from IPV reported at least one unmet health need, ranging from primary care and brain injury diagnosis to pain management and psychiatric treatment (46).

2.4.5 Recommendations Made for Addressing These Challenges

Out of 25 included studies, 11 recommended routine screenings for TBI within facilities that provide care to individuals experiencing homelessness. They suggested adapting cognitive tests for this population, and emphasized the need for improved access to neuro-specific rehabilitation services for homeless individuals, after they have been housed (23,37,40,42–44,46–48,50,52). Additionally, two studies suggested that healthcare providers should consider patients' risk factors for homelessness among TBI survivors and explore how TBI interventions and treatments could target social functioning (38,49). The remaining recommendations focused on increasing awareness about TBI and its impacts, providing training for clinicians on managing clients with

aggressive behaviors, and developing policies, strategies, and interventions that address the combined effects of TBI and homelessness (31,37,39,45,53,54).

2.5 Discussion

Individuals with TBI who are experiencing homelessness represent a vulnerable group requiring urgent attention, as TBI-related impairments can significantly impact daily life. The combined effects of TBI and the health inequities faced by this population increase their risk of long-term homelessness, repeated TBIs (45,48), and major socio-economic consequences (23).

This scoping review was conducted to better understand the possible influence of the TBI on the experience of individuals who are homeless or unstably housed. 21 of 25 included studies in this review were published after 2015, highlighting the recent interest and increased attention to the lives of individuals with the lived experience of TBI and homelessness. The studies included in this review discussed various challenges resulting from TBI in this population, categorized into three main areas: health-related sequelae, social sequelae, and service utilization.

The included studies showed that homeless individuals with TBI, in general, experience poorer health status compared with their counterparts without TBI. These outcomes were discussed in relation to physical (19,22,30,41,42,45,46) and mental health conditions (19,22,23,29,30,36,39–43,46), cognitive sequelae (36,37,39,41,45,51), and impacts on everyday activities (43,47). Among the included studies, only one reported that, in a sample of individuals experiencing homelessness with a high rate of subjective neurocognitive symptoms and poor performance on cognitive measures, there was no significant difference between individuals with and without a history of TBI. This finding may have been influenced by the small sample size,

and psychiatric comorbidities (such as depression, anxiety, or alcohol abuse) may also have affected participants' perceptions of their own neurocognitive functioning (50).

Several aspects of the included studies addressed the social experiences of individuals with concurrent homelessness and TBI. These studies examined the impact of TBI on housing stability (29), the influence of injury severity on the onset and lifetime duration of homelessness (48), and the effects of TBI on community reintegration and functioning (29,49). Multiple studies also highlighted a higher risk of incarceration among individuals with TBI compared with those without TBI (19,23,30,38,44,54), and noted the negative attitudes and insufficient knowledge of service providers regarding how to address the unique needs of this population (31,52). Finally, the included studies discussed the impact of TBI on service utilization in the homeless population and showed that homeless individuals with TBI have higher rates of hospital admissions, primary care use, and rehabilitative service use, are more likely to be frequent ED users, and are more likely to report unmet healthcare needs compared with those without TBI (23,30,46,53).

Challenges resulting from TBI, such as executive dysfunction (37,45), poor mental and physical health conditions (22,41,45,46), alongside its social sequelae (19,44) increase the risk for homelessness. This occurs because individuals may struggle to access the support needed to stay housed and manage financial responsibilities. For instance, cognitive impairments can hinder their ability to navigate tasks like paying rent and covering utility bills (43). Moreover, behavioral problems resulting from TBI can be misunderstood by landlords and neighbors as non-compliance, which may interfere with an individual’s ability to get the help they need to manage their budget, pay rent, and keep their home (31,39,57).

In addition to personal factors, individuals with TBI who experience homelessness may face structural barriers due to their unique challenges and needs, which hinder their ability to find and maintain housing. General housing crisis-related issues, such as the lack of affordable and social housing and increasing housing demands in society, have made accessing or maintaining housing challenging for homeless or vulnerably housed individuals in general (58). Challenges that individuals with TBI might experience, such as poorer health status, including insufficiently treated seizures, epilepsy, headache, cognitive impairments and loss of social support, can further intensify these difficulties for this population, as they might not be able to hold a job, leading to further financial constraints (16,18,59).

Individuals with TBI may experience delays or limited access to essential services due to the lack of coordination between TBI services (e.g., hospitals), the community, and housing services. This lack of coordination makes it difficult for them to understand who is responsible for what and may also confuse providers, hindering their ability to deliver optimal services that meet individuals' needs (31,43). Fragmentation between services, compounded by insufficient hospital resources (60), significantly impacts individuals with TBI. These issues hinder their ability to secure or maintain housing. It can lead to discharge before health-related or housing needs have been adequately addressed. The fragmentation between health and housing services has been widely discussed in previous literature as well, concerning the general homeless population (43,61,62).

In spite of the positive outcomes of housing models, such as Housing First, in addressing the homelessness issue, individuals with TBI who experience homelessness or vulnerably housed conditions might need extra support other than housing, intensive case management (ICM), and services from an assertive community skills (ACT) team to maintain their stable housing. The

first and foremost step is to increase the awareness and knowledge of providers across sectors offering housing and community services through formal education and partnerships with health-related organizations to better understand the needs of those living with TBI and available services with opportunities for referrals and collaboration (31,39).

Revisions of current policies and mandated procedures to access health and social services for individuals with TBI and experiences of homelessness are also required, as they require extensive expert support to navigate the system to access services. The assistance of a regional system navigator may be helpful in supporting these individuals during their early transition from inpatient care to the community, connecting them to appropriate resources and assisting with housing applications (63,64). However, many individuals with TBI might not become aware of and have access to a system navigator if they are not admitted to inpatient care following their injury. For this reason, multiple points of entry to access system navigator services should be considered. Additionally, health and social service providers should prioritize housing across the continuum of care, meaning they ask about housing status and housing service needs from admission to inpatient care to participation in outpatient and community care services. These providers can then support housing stability within their capacity and make appropriate referrals in cases of housing instability (38). There is also a need for a change at the system level to improve the ability of service providers to help their clients with TBI navigate through the system while providing more holistic services to them. Literature has supported the integrated care models, which piece together different aspects of a fragmented system to improve service delivery (65,66). As an example, studies have shown the positive impacts of integrated care models on functional outcomes among individuals with TBI, where acute, rehabilitation, and community services are provided by one management team (67,68).

Finally, due to their unique needs and symptoms, individuals with TBI may require specific housing features and tailored support, including secure housing situated in safe, quiet neighborhoods close to community resources and natural environments, as highlighted in Housing First research (31,69,70). As well, it is crucial for service providers to take into account the cognitive impairments of clients with TBI, as it has been shown that current mental health treatment practices may be a barrier to service engagement for persons with TBI (71). Mental health service providers might not be aware of clients' histories of TBI; therefore, summarizing conversations, establishing routines, and being mindful of clients' attention spans, learning preferences, and signs of fatigue are important. Requesting too much from clients when they are overwhelmed could lead to disengagement and withdrawal from services (39).

Strengths and Limitations

The strengths of this review lie in the consistent application of thorough and transparent methods throughout the process, as well as the inclusion of highly experienced researchers from diverse backgrounds on our team.

The potential limitations of our scoping review are worth mentioning. We only included studies published in English peer-reviewed journals, which may limit our interpretation of the findings.

2.6 Conclusion

This scoping review highlighted the potential influences of TBI on individuals who are homeless or unstably housed, demonstrating that TBI can negatively impact their overall health and social life, as well as increase their utilization needs for health and social services. These TBI-specific challenges impose an additional burden on individuals experiencing homelessness or precarious housing, making it more difficult for them to acquire or maintain stable housing. A

significant gap identified in the literature was the lack of qualitative studies focused on this population, which are crucial for better understanding the real-world challenges they face and for developing more practical solutions to address their issues.

Funding

The author(s) received no funding for the research, authorship, or publication of this article.

Disclosure statement

No potential conflict of interest was reported by the author(s).

2.7 References

1. UN- Habitat. State of efforts to progressively realize adequate housing for all. United Nations Publication. 2024;
2. OECD. Better data and policies to fight homelessness in the OECD. Policy Brief on Affordable Housing. 2020;3–11.
3. Poremski D, Harris DW, Kahan D, Pauly D, Leszcz M, O'Campo P, et al. Improving continuity of care for frequent users of emergency departments: service user and provider perspectives. Gen Hosp Psychiatry. 2016;40:55–9.
4. Shier ML, Jones ME, Graham JR. Employment difficulties experienced by employed homeless people: labor market factors that contribute to and maintain homelessness. J Poverty. 2012;16(1):27–47.
5. Seale J V, Fallaize R, Lovegrove JA. Nutrition and the homeless: the underestimated challenge. Nutr Res Rev. 2016;29(2):143–51.
6. Stergiopoulos V, Gozdzik A, O'Campo P, Holtby AR, Jeyaratnam J, Tsemberis S. Housing First: exploring participants' early support needs. BMC Health Serv Res. 2014;14(1):1–15.
7. Friesinger JG, Topor A, Bøe TD, Larsen IB. Studies regarding supported housing and the built environment for people with mental health problems: A mixed-methods literature review. Health Place. 2019;57:44–53.
8. Fazel S, Khosla V, Doll H, Geddes J. The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. PLoS Med. 2008;5(12):e225.
9. Beijer U, Wolf A, Fazel S. Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. Lancet Infect Dis. 2012;12(11):859–70.
10. Aldridge RW, Story A, Hwang SW, Nordentoft M, Luchenski SA, Hartwell G, et al. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. The Lancet. 2018;391(10117):241–50.
11. Maas AIR, Menon DK, Adelson PD, Andelic N, Bell MJ, Belli A, et al. Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research. Lancet Neurol. 2017;16(12):987–1048.
12. Menon DK, Schwab K, Wright DW, Maas AI. Position statement: definition of traumatic brain injury. Arch Phys Med Rehabil. 2010;91(11):1637–40.
13. Dewan MC, Rattani A, Gupta S, Baticulon RE, Hung YC, Punchak M, et al. Estimating the global incidence of traumatic brain injury. J Neurosurg. 2018;130(4):1080–97.
14. Corrigan JD, Yang J, Singichetti B, Manchester K, Bogner J. Lifetime prevalence of traumatic brain injury with loss of consciousness. Injury prevention. 2018;24(6):396–404.
15. Frost RB, Farrer TJ, Primosch M, Hedges DW. Prevalence of traumatic brain injury in the general adult population: a meta-analysis. Vol. 40, Neuroepidemiology. S. Karger AG Basel, Switzerland; 2013. p. 154–9.
16. Topolovec-Vranic J, Ennis N, Colantonio A, Cusimano MD, Hwang SW, Kontos P, et al. Traumatic brain injury among people who are homeless: a systematic review. BMC Public Health. 2012;12(1):1–8.
17. Stubbs JL, Thornton AE, Sevick JM, Silverberg ND, Barr AM, Honer WG, et al. Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. Lancet Public Health. 2020;5(1):e19–32.

18. Oddy M, Moir JF, Fortescue D, Chadwick S. The prevalence of traumatic brain injury in the homeless community in a UK city. Brain Inj. 2012;26(9):1058–64.
19. Schmitt T, Thornton AE, Rawtaer I, Barr AM, Gicas KM, Lang DJ, et al. Traumatic brain injury in a community-based cohort of homeless and vulnerably housed individuals. J Neurotrauma. 2017;34(23):3301–10.
20. Hwang SW, Henderson MJ. Health care utilization in homeless people: translating research into policy and practice. Agency for Healthcare Research and Quality Working Paper. 2010;(10002).
21. Miyawaki A, Hasegawa K, Figueroa JF, Tsugawa Y. Hospital readmission and emergency department revisits of homeless patients treated at homeless-serving hospitals in the USA: observational study. J Gen Intern Med. 2020;35:2560–8.
22. Hwang SW, Colantonio A, Chiu S, Tolomiczenko G, Kiss A, Cowan L, et al. The effect of traumatic brain injury on the health of homeless people. Cmaj. 2008;179(8):779–84.
23. To MJ, O'Brien K, Palepu A, Hubley AM, Farrell S, Aubry T, et al. Healthcare utilization, legal incidents, and victimization following traumatic brain injury in homeless and vulnerably housed individuals: a prospective cohort study. J Head Trauma Rehabil. 2015;30(4):270–6.
24. Callaway L, Miller R, Migliorini C. Transition to supported community living: An environmental scan and qualitative experiences of TAC clients. Institute for Safety, Compensation and Recovery Research; 2015.
25. Aubry T, Goering P, Veldhuizen S, Adair CE, Bourque J, Distasio J, et al. A multiple-city RCT of housing first with assertive community treatment for homeless Canadians with serious mental illness. Psychiatric services. 2016;67(3):275–81.
26. Stefancic A, Tsemberis S. Housing First for long-term shelter dwellers with psychiatric disabilities in a suburban county: A four-year study of housing access and retention. J Prim Prev. 2007;28(3):265–79.
27. Gaetz S, Scott F, Gulliver T. Housing First in Canada: Supporting communities to end homelessness. Canada Homelessness Research Network; 2013.
28. Macnaughton E, Nelson G, Goering P, Piat M. Moving evidence into policy: The story of the At Home/Chez Soi initiative's impact on federal homelessness policy in Canada and its implications for the spread of Housing First in Europe and internationally. Eur J Homelessness. 2017;11.
29. Mejia-Lancheros C, Lachaud J, Aubry T, Wiens K, O'Campo P, Stergiopoulos V, et al. Multi-trajectory group profiles of well-being and associated predictors among adults experiencing homelessness and mental illness: Findings from the At Home/Chez Soi study, Toronto site. Soc Psychiatry Psychiatr Epidemiol. 2022;57(1):67–81.
30. Topolovec-Vranic J, Schuler A, Gozdzik A, Somers J, Bourque PÉ, Frankish CJ, et al. The high burden of traumatic brain injury and comorbidities amongst homeless adults with mental illness. J Psychiatr Res. 2017;87:53–60.
31. Estrella MJ, Kirsh B, Kontos P, Grigorovich A, Colantonio A, Chan V, et al. Critical characteristics of housing and housing supports for individuals with concurrent traumatic brain injury and mental health and/or substance use challenges: a qualitative study. Int J Environ Res Public Health. 2021;18(22):12211.
32. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Scoping reviews. Joanna Briggs Institute reviewer's manual. 2017;2015:1–24.
33. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467–73.

34. Gaetz S, Barr C, Friesen A, Harris B, Hill C, Kovacs-Burns K, et al. Canadian definition of homelessness. Toronto: Canadian Observatory on Homelessness Press. 2012;1–5.
35. Veritas Health Innovation MAustralia. Covidence systematic review software [Internet]. 2025 [cited 2025 Mar 8]. Available from: https://www.covidence.org
36. Valera EM, Berenbaum H. Brain injury in battered women. J Consult Clin Psychol. 2003;71(4):797.
37. Andersen J, Kot N, Ennis N, Colantonio A, Ouchterlony D, Cusimano MD, et al. Traumatic brain injury and cognitive impairment in men who are homeless. Disabil Rehabil. 2014;36(26):2210–5.
38. Topolovec-Vranic J, Ennis N, Howatt M, Ouchterlony D, Michalak A, Masanic C, et al. Traumatic brain injury among men in an urban homeless shelter: observational study of rates and mechanisms of injury. Canadian Medical Association Open Access Journal. 2014;2(2):E69–76.
39. Gargaro J, Gerber GJ, Nir P. Brain injury in persons with serious mental illness who have a history of chronic homelessness: could this impact how services are delivered? Canadian Journal of Community Mental Health. 2016;35(2):69–77.
40. Brenner LA, Hostetter TA, Barnes SM, Stearns-Yoder KA, Soberay KA, Forster JE. Traumatic brain injury, psychiatric diagnoses, and suicide risk among Veterans seeking services related to homelessness. Brain Inj. 2017;31(13–14):1731–5.
41. Palladino B, Montgomery AE, Sommers M, Fargo JD. Risk of suicide among veterans with traumatic brain injury experiencing homelessness. J Mil Veterans Health. 2017;25(1):34–8.
42. Smirl JD, Jones KE, Copeland P, Khatra O, Taylor EH, Van Donkelaar P. Characterizing symptoms of traumatic brain injury in survivors of intimate partner violence. Brain Inj. 2019;33(12):1529–38.
43. Adshead CD, Norman A, Holloway M. The inter-relationship between acquired brain injury, substance use and homelessness; the impact of adverse childhood experiences: an interpretative phenomenological analysis study. Disabil Rehabil. 2021;43(17):2411–23.
44. Luong L, Lachaud J, Kouyoumdjian FG, Hwang SW, Mejia-Lancheros C. The impact of a Housing First intervention and health-related risk factors on incarceration among people with experiences of homelessness and mental illness in Canada. Canadian journal of public health. 2021;112:270–9.
45. Cusimano MD, Saha A, Zhang D, Zhang S, Casey J, Rabski J, et al. Cognitive dysfunction, brain volumes, and traumatic brain injury in homeless persons. Neurotrauma Rep. 2021;2(1):136–48.
46. Oakley LD, Luebke J, Dosch NC, Snedden TR, Hernadez H, Lemke M, et al. Traumatic brain injury screening and the unmet health needs of shelter-seeking women with head injuries related to intimate partner violence. Women's Health Reports. 2021;2(1):586–93.
47. Rangu N, Frank-Pearce SG, Alexander AC, Hébert ET, Ra C, Kendzor DE, et al. Non-adherence to psychiatric medication in adults experiencing homelessness is associated with incurred concussions. Front Hum Neurosci. 2022;16:958169.
48. Stubbs JL, Thornton AE, Gicas KM, O'Connor TA, Livingston EM, Lu HY, et al. Characterizing traumatic brain injury and its association with losing stable housing in a community-based sample. The Canadian Journal of Psychiatry. 2022;67(3):207–15.
49. Keller A V, Muller-Cohn CM, Austin TA, Jak AJ, Twamley EW. Neuropsychological functioning, neurobehavioral symptoms, and community reintegration in unstably housed veterans with mental health conditions. Clin Neuropsychol. 2023;37(8):1728–44.
50. Chevreau G, Coll M, Barbot F, Castillo MC, Vallat-Azouvi C. Neuropsychological functioning of homeless people in Paris: an exploratory study. Appl Neuropsychol Adult. 2025;32(2):419–30.

51. Atkin G, Reece J, Moran I. Characterizing traumatic brain injury in unsheltered homelessness: prevalence of TBI and cognitive sequelae in individuals utilizing street medicine. Journal of Osteopathic Medicine. 2025;(0).
52. Warren GC, Kennedy CJ, Gavas N, Schmidt J, Woodin E, Breese Biagioni J, et al. Barriers and Facilitators to Housing and Healthcare Services for People Experiencing Homelessness with Concurrent Brain Injury, Mental Health and Substance Use Disorders: A Qualitative Study. Front Public Health. 2025;13:1643689.
53. Holliday R, Monteith L, Liu S, Lum S, Sia M, Iwamasa G, et al. Traumatic brain injury and VA service use among Native Hawaiian and Pacific Islander Veterans experiencing homelessness. Front Public Health. 2025;13:1639888.
54. Luong LD, Mejia-Lancheros C, Kouyoumdjian F, Lachaud J, Hwang SW. Trajectories of Incarceration Over Six Years Among People with Mental Illness and Experiences of Homelessness: Predictive Factors Among Participants in a Randomized Trial of Housing First: Trajectoires d'incarcération sur six ans chez les personnes atteintes de maladie mentale et ayant connu l'itinérance–Facteurs prédictifs chez les participants à un essai à répartition aléatoire en marge du programme «Logement d'abord». The Canadian Journal of Psychiatry. 2025;07067437251372188.
55. McColl MA, Davies D, Carlson P, Johnston J, Minnes P. The community integration measure: development and preliminary validation. Arch Phys Med Rehabil. 2001;82(4):429–34.
56. Resnik L, Plow M, Jette A. Development of CRIS: measure of community reintegration of injured service members. J Rehabil Res Dev. 2009;46(4):469.
57. Chassman S, Calhoun K, Bacon B, Chaparro Rucobo S, Goodwin E, Gorgens K, et al. Correlates of acquiring a traumatic brain injury before experiencing homelessness: An exploratory study. Soc Sci. 2022;11(8):376.
58. Canadian Mortgage and Housing Corporation. Canada's Housing Supply Shortages: Estimating what is needed to solve Canada's housing affordability crisis by 2030. 2022 [cited 2024 Nov 18]; Available from: https://assets.cmhc-schl.gc.ca/sites/cmhc/professional/housing-markets-data-and-research/housing-research/research-reports/2022/housing-shortages-canada-solving-affordability-crisis-en.pdf?rev=88308aef-f14a-4dbb-b692-6ebbddcd79a0&_gl=1*wlanlt*_gcl_au*NzQ5MjQ5NTQuMTczMjA1NjE4MQ..*_ga*MTU3NTk2MTg2My4xNzMyMDU2MTgx*_ga_CY7T7RT5C4*MTczMjA1NjE4MS4xLjEuMTczMjA1NjIyOC4xMy4wLjA
59. Mesraoua B, Deleu D, Hassan AH, Gayane M, Lubna A, Ali MA, et al. Dramatic outcomes in epilepsy: depression, suicide, injuries, and mortality. Curr Med Res Opin. 2020;36(9):1473–80.
60. Ontario Hospital Association. available at: www.oha.com/Bulletins/2558_OHA_A%20Sector%20on%20the%20Brink_rev.pdf. 2018. "A sector on the brink: the case for a significant investment in Ontario's hospitals."
61. Kerman N, Sirohi R, Curwood SE, Trainor J. Canadian service providers' perceptions of barriers and support gaps in housing and mental health. Canadian Journal of Community Mental Health. 2017;36(Special Issue):61–75.
62. Piat M, Polvere L, Kirst M, Voronka J, Zabkiewicz D, Plante MC, et al. Pathways into homelessness: Understanding how both individual and structural factors contribute to and sustain homelessness in Canada. Urban Studies. 2015;52(13):2366–82.

63. Moore M, Kempthorne L, Fann JR, Shulein O, Dams-O'Connor K, Kajankova M, et al. Patient and Caregiver Satisfaction With the Brain Injury Rehabilitation: Improving the Transition Experience (BRITE) Intervention. J Head Trauma Rehabil. 2024;10–1097.
64. Tsow R, Pollock C, Mehta S, Turcott A, Kang R, Schmidt J. A Look at Traumatic Brain Injury Community Programs in British Columbia: Barriers and facilitators of implementation. Brain Inj. 2024;38(7):539–49.
65. Goodwin N. Understanding integrated care. Int J Integr Care. 2016;16(4).
66. Marchand DK, Ford C. Care for Acquired Brain Injury and Concurrent Mental Health Conditions and/or Substance Use Disorders: An Environmental Scan. CADTH: Ottawa, ON, Canada. 2020;
67. Lannin NA, Laver K. Models of care for people with severe acquired brain injury: A systematic review. Monash University: Melbourne, Australia. 2013;
68. Laver K, Lannin NA, Bragge P, Hunter P, Holland AE, Tavender E, et al. Organising health care services for people with an acquired brain injury: an overview of systematic reviews and randomised controlled trials. BMC Health Serv Res. 2014;14:1–17.
69. Macnaughton E, Townley G, Nelson G, Caplan R, Macleod T, Polvere L, et al. How does Housing First catalyze recovery?: Qualitative findings from a Canadian multi-site randomized controlled trial. Am J Psychiatr Rehabil. 2016;19(2):136–59.
70. Patterson ML, Currie L, Rezansoff S, Somers JM. Exiting homelessness: perceived changes, barriers, and facilitators among formerly homeless adults with mental disorders. Psychiatr Rehabil J. 2015;38(1):81.
71. Corrigan JD, Bogner J, Hungerford DW, Schomer K. Screening and brief intervention for substance misuse among patients with traumatic brain injury. Journal of Trauma and Acute Care Surgery. 2010;69(3):722–6.

CHAPTER 3: Experiencing Residential Instability Following Traumatic Brain Injury (TBI): Stories of The Interactions with the Health and Social Care Systems

This chapter has been submitted to *Disability and Society*, and the manuscript has been prepared in accordance with the journal's requirements, but the numbering of the tables and figures has been modified for the thesis.

I acknowledge the following people who made contributions to this study:

Ramin Banimahdi designed the study, with Katrine Sauvé-Schenk providing support. Ramin Banimahdi collected and analyzed the data and drafted the manuscript with input from all authors (Ramin Banimahdi, Katrine Sauvé-Schenk, Mary Egan, and John Sylvestre). All authors contributed to the interpretation of the findings, revised the manuscript for critically important intellectual content, and approved the final version for publication.

Experiencing Residential Instability Following Traumatic Brain Injury (TBI): Stories of the Interactions with the Health and Social Care Systems

Ramin Banimahdi[1*], John Sylvestre[2,3], Mary Egan[1], Katrine Sauvé-Schenk[1,3]

1. School of Rehabilitation Sciences, University of Ottawa, Ottawa, ON, Canada

2. School of Psychology, University of Ottawa, Ottawa, ON, Canada

3. Centre for Research on Educational and Community Services, University of Ottawa, Ottawa, ON, Canada

3.1 Abstract

Individuals with traumatic brain injury (TBI) often have substantial interactions with the health and social care systems. A qualitative narrative inquiry study was conducted to better understand the personal experiences of individuals with TBI regarding their interactions with these systems and how these interactions influenced their residential instability. Interviews were conducted with six individuals with TBI who had the experience of residential instability following their trauma. Interpretive stories were crafted from each narrative using McCormack's Lenses. A paradigmatic mode of analysis approach was then employed to identify recurring elements of experiences in the narratives and interpretive stories. The individuals' narratives revealed the broad impacts of TBI on their lives, including health outcomes, loss of jobs, and loss of social networks. Moreover, they highlighted the important roles of individuals' socioeconomic status (SES) and the impact of pre- and post-TBI relationships and family dynamics on their health and housing outcomes following their TBI. Individuals' experiences reflected a lack of knowledge among the healthcare and social service providers about their unique needs and challenges. As well, it showed several gaps in the system related to serving these individuals, including inaccurate assessments, long waitlists for health and housing services, and a lack of providers in

the healthcare system. There is an urgent need for formalized education for healthcare providers and employees in the social sectors. Moreover, policy adjustments are needed to better tailor and expand the services to support this population effectively.

Keywords: traumatic brain injury (TBI), residential instability, healthcare, social services, narrative, qualitative

3.2 Introduction

Traumatic brain injury (TBI) is a leading cause of death and disability around the world, with an estimated 69 million people affected each year (Dewan et al., 2018). Despite often substantial involvement with health and social care systems, many individuals go on to experience housing instability and homelessness (Stubbs et al., 2020). In Canada, homelessness remains a critical issue, and the prevalence of TBI among homeless and vulnerably housed individuals is disproportionately high. Notably, the majority of TBIs in this population occur prior to the onset of homelessness (Rigney et al., 2022; Stubbs et al., 2020; Topolovec-Vranic et al., 2012). While considerable research has explored the health and social care needs of individuals with TBI (Albrecht & Wickwire, 2021; Norman et al., 2023), little is known about the ways in which interactions with health and social care providers influence housing outcomes.

The utilization of healthcare and social services by individuals with TBI remains high for several years post-discharge from inpatient care, which results in substantial costs for this population (Chen et al., 2012; Totman et al., 2023). A significant number of individuals who experience TBI are young, and even mild injuries can lead to long-term disability (Fu et al., 2016; O'connor et al., 2005). Due to the enormous consequences for families and caregivers in terms of caregiving responsibilities and quality of life, these individuals need long-term support

from health and social care systems. However, most professional interventions are provided during the acute period (Abrahamson et al., 2017; DeMatteo et al., 2008; Oyesanya et al., 2021).

Patients with TBI and their caregivers usually report a lack of knowledge about the injury, its long-term outcomes, rehabilitation process, planning, and follow-up (Oyesanya et al., 2021; Rotondi et al., 2007). A literature review on the transition of individuals with TBI from hospital to home showed that most patients report dissatisfaction with the amount of outpatient and community services and information received before discharge (Turner et al., 2008). Moreover, relatives and caregivers report advocating to the authorities to make sure that patients are provided with outpatient rehabilitation after discharge (Engström & Söderberg, 2011; Turner et al., 2011).

Studies have shown that individuals with TBI might experience several barriers to accessing rehabilitation services. These include long wait times, delays or lack of referral to services, lack of knowledge and failure to detect or address cognitive, communication, or emotional disorders on the part of first-line referring providers, system complexities and fragmentation, funding limitations, and insufficient frequency or duration of services (Andelic et al., 2021; Chan, Marcus, et al., 2022; Estrella et al., 2021; Knollman-Porter et al., 2021; Laliberté et al., 2018; Shiner et al., 2022).

Another commonly reported challenge that individuals with TBI and their caregivers experience is difficulty with system navigation, particularly in community settings. Most individuals with mild TBI neither seek nor receive hospital care. A substantial number of hospitalized patients with moderate or severe TBI do not receive inpatient rehabilitation (Rao et al., 2018). As a result, the majority of individuals with TBI look for rehabilitation and support in the community, where the fragmentation of services makes system navigation more challenging

(Estrella et al., 2021; Grauwmeijer et al., 2012; Kohler et al., 2020; Spitz et al., 2012; Watanabe, 2013).

The challenges people with TBI and their caregivers experience are not limited to identifying the services, navigating the system, and waiting times. For many people, the biggest challenge can be obtaining funding for their required services. Regardless of whether funding comes from government healthcare budgets, private insurers, motor vehicle insurers or workers' compensation programs, resource allocation depends on a thorough assessment, the patient's and family's ability to demonstrate need, and the gatekeepers' knowledge of TBI to identify suitable services and supports (Andelic et al., 2021; Knollman-Porter et al., 2021). However, individuals with TBI have identified several barriers in this process, such as delays in accessing benefits, mandatory duplicative assessments, invasion of privacy, request denials, etc. (Hou et al., 2024).

The outcomes resulting from TBI, such as cognitive and physical limitations, as well as challenges related to trauma, might influence individuals' ability to maintain their stable housing, leading to residential instability and an increased risk of homelessness (Adshead et al., 2021; Svoboda & Ramsay, 2014). Residential instability refers to a process in which the shifting relationship between individuals, housing conditions, and the presence of formal and informal support systems results in varying adequacy of housing over an extended duration (Sylvestre et al., 2009). Sustained patterns of residential instability result in poor outcomes, at times comparable to those of homeless and vulnerably housed adults who have a similar likelihood of experiencing unmet healthcare needs (Argintaru et al., 2013). Moreover, there is a clear overlap between the concepts of residential instability and episodic homelessness in that both typically involve frequent moves situated within a broader context of insecure housing (Czechowski et al., 2022).

Prior studies suggest that individuals with TBI often experience a lack of support during the chronic or post-acute phase, facing challenges resulting from their TBI-associated communication challenges, recognition of their deficits by the system, and access to service referrals (Hoepner & Keegan, 2023). However, little is known about how individuals with TBI navigate their interactions with health and social care systems and their experiences of residential instability. This study aimed to better understand the personal experiences of individuals with TBI regarding their interactions with these systems and how these interactions influenced the onset or continuation of residential instability.

3.3 Methods

3.3.1 Design

A qualitative narrative inquiry approach was employed to better understand the experiences of individuals with TBI, their interactions with health and social care systems, and the residential instability they experienced. Rooted in the belief that humans make sense of their lives through stories, narrative inquiry focuses on studying and analyzing life stories to uncover meaning and share findings (Creswell & Poth, 2016). This methodology was selected because it effectively addresses the intricate and often contradictory nature of life experiences through the stories we tell ourselves (Clandinin & Connelly, 2000; Creswell & Poth, 2016).

3.3.2 Participants

Recruitment was conducted with the assistance of an organization that provides community services for individuals with TBI. Inclusion criteria were diagnosis of TBI and experience of residential instability following the trauma. Moreover, potential participants needed to be 18

years of age or older, medically stable, have completed post-injury rehabilitation, and able to consent to participation independently. Convenience sampling was used, and eligible participants were recruited on a first-come, first-served basis. Among eight individuals who expressed interest in participating, six people met the inclusion criteria. Ethics approval was granted by the University of Ottawa Research Ethics Board (H-11-23-9598) (Appendix B), and all participants provided informed written consent.

3.3.3 Data Collection

Face-to-face virtual interviews were conducted by the first author. Interview questions were framed in the context that there were no right or wrong responses, and all viewpoints were valid (Appendix C). The participants were asked to tell the story of what happened after their TBI, focusing on their interactions with health and social care services and on the housing transitions they experienced. Participants were encouraged to speak openly, with the interviewer intervening only to summarize as their stories unfolded and, when appropriate, to ask follow-up questions relevant to the narrative being shared.

3.3.4 Data Analysis

Narrative smoothing was used to transform raw data into a coherent story for each participant (Kim, 2015). This process involved the first author replaying the audio-recorded interviews, producing verbatim transcriptions, and taking detailed notes, facilitating a deeper understanding of the narratives.

Interpretive stories were then crafted from each narrative using McCormack's Lenses as a framework for narrative analysis. McCormack's Lenses offer a flexible approach, guiding researchers to explore both individual elements and the entire narrative from multiple perspectives, including language (the use of words), narrative processes (the way in which words

were used), context (the context in which the experience took place), and moments (when storyteller comes to a previously unrecognized understanding of a fundamental issue in the related experience) (McCormack, 2000). These interpretive stories are considered the researchers' (etic) perspective of the participants' narratives.

Finally, the paradigmatic mode of analysis or analysis of narratives approach, described by Polkinghorne (1995), was employed to identify recurring elements of experiences in the narratives and interpretive stories (Polkinghorne, 1995). Due to the extensive data generated by these narratives and stories, thematic analysis was utilized to manage the large dataset effectively and in a more systematic approach (Braun & Clarke, 2006). Following this stage, the key events in each participant's narrative were highlighted using visual aids to support the participants in reflecting on their own stories (Jovchelovitch & Bauer, 2000). Then, member reflection sessions were conducted with each participant to obtain their feedback on the key events and interpretive stories.

The outcomes of the thematic analysis and verified key events, and interpretive stories were used to highlight the key aspects of the narratives that illustrate similarities and differences in how participants experienced interactions with health and social care systems (Esin, 2011).

To increase the trustworthiness of the results, the first author engaged in regular supervision with the research team to address challenges and obtain feedback on the study design, data collection, and analysis. During the data collection and analysis process, the first author wrote reflexive memos and observed the emotional responses of participants to ensure the data analysis remained grounded in their lived experiences (Johnson et al., 2020; Lincoln & Guba, 1985). The Data were managed using NVivo 14 (Lumivero, version 14, 2025).

3.4 Results

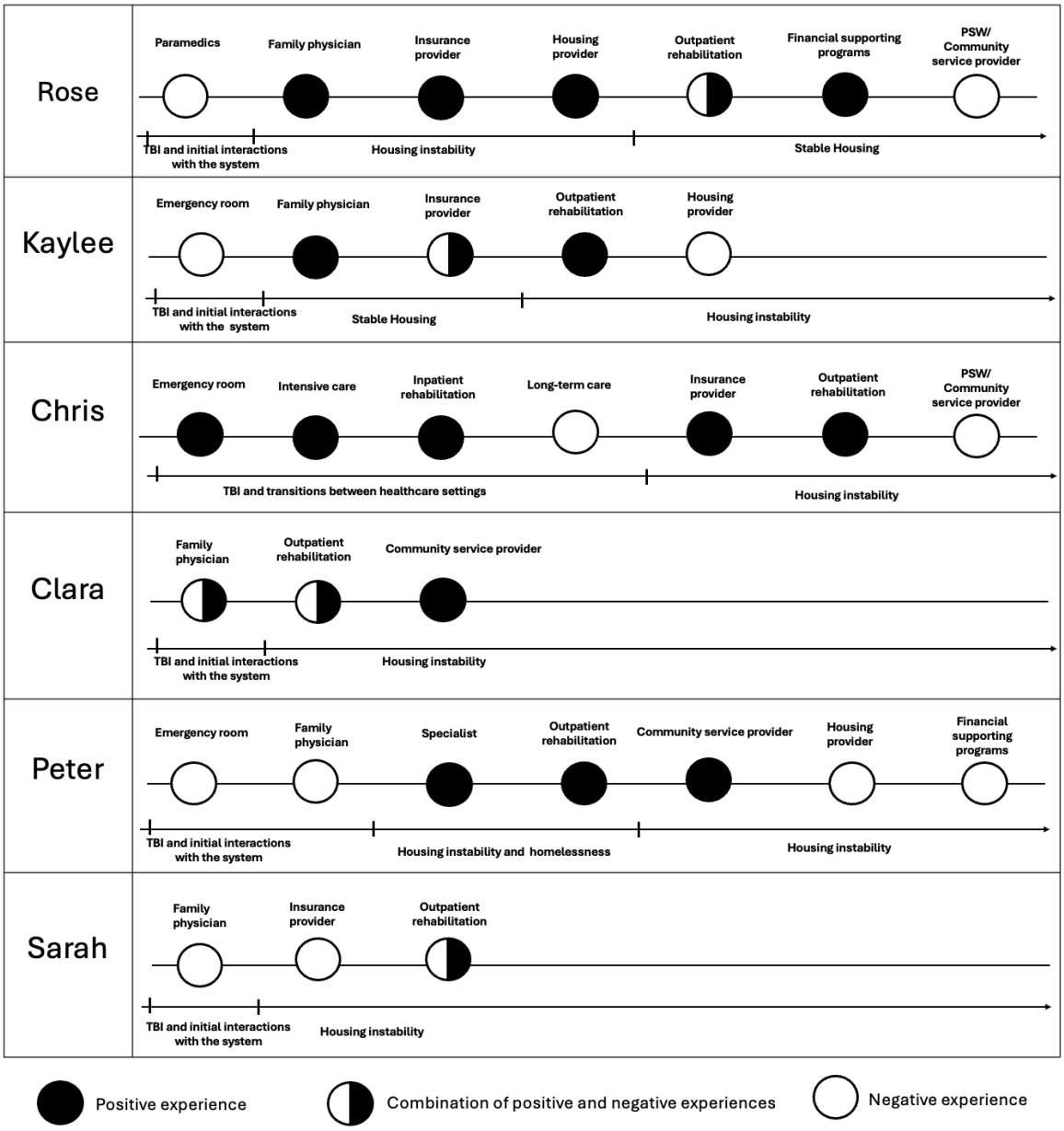
In total, six individuals were interviewed. Each interview lasted between 70 to 90 minutes. Table 3.1 displays the characteristics of the participants. To maintain confidentiality and anonymity, pseudonyms were assigned. All participants reported having mild to moderate TBI. Each participant had experienced at least one period of residential instability or homelessness following their TBI. Figure 3.1 represents the health and social care systems that played a significant role in each individual's experiences following their TBI.

Table 3.1. Characteristics of the participants

Participants	Age ranges	Gender	Marital status at the time of interview	Years since the last TBI at the time of interview	Mechanism of TBI
Rose	50-60	Female	Single	6	MVA*
Kaylee	30-40	Female	Married	4	MVA
Chris	60-70	Male	Single (Divorced)	8	MVA
Clara	30-40	Female	Single (Divorced)	5	Fall
Peter	60-70	Male	Single (Divorced)	20	Sport-related injury
Sarah	40-50	Female	Married	10	Work injury

*MVA: motor vehicle accident

Figure 3.1. The participants' interactions with health and social care systems following TBI



3.4.1 Introducing the Participants (Interpretive Stories)

Rose, an instructor in the field of mental health, sustained a TBI in a car accident. The paramedics assured her that she had not suffered any serious injuries, and she was not taken to the emergency department. A few days later, she visited her family physician. Once she described symptoms such as balance issues, poor concentration, and hypersensitivity to visual and auditory stimuli, he confirmed that she had experienced a TBI and advised that she should not be living alone.

A particularly difficult moment for her after the injury was that, due to her condition and personality changes, her family and friends distanced themselves. Some explicitly told her they no longer wanted to be her friend, while others simply disappeared. Around two weeks after the accident, she attended a fundraising event where a couple, upon learning that she needed care, invited her to stay with them so they could support her. She referred to this arrangement as "private respite care." After moving in with them, she stopped working and, drawing on her background in health and social care services, coordinated her care team and applied for various support services. Meanwhile, since her apartment was managed by a non-profit housing organization, she became eligible for subsidized housing, which enabled her to afford rent and remain in the same building.

After several moves back and forth between her apartment and friends' homes, she was eventually able to obtain a personal support worker (PSW) and manage in her own apartment. She faced numerous challenges in navigating health and social care systems. However, she believes that her knowledge of the system, her personal savings, and the rent subsidy helped prevent her from experiencing homelessness.

Kaylee suffered two TBIs from car accidents. After her first TBI, she was taken to the emergency room (ER), where she was diagnosed with a brain injury. Once her condition stabilized, she was discharged without receiving any in-hospital rehabilitation services. Following the first accident, she stopped working due to symptoms such as concentration issues, migraines, balance problems, and dizziness. These symptoms also made using public transportation difficult, which complicated her ability to access healthcare services. Additionally, she was having difficulty caring for her preschool daughter, but the family could not afford a caregiver. As a result, her husband had to drive her to appointments and care for their daughter, which significantly affected his work performance. Kaylee later experienced her second car accident and was taken to the ER. A particularly sad moment, she recalled, was when her husband raised concerns with the ER physician about the possibility of another TBI, and they responded that even if she did have one, there was nothing they could do about it.

The following day, Kaylee visited her family physician, who conducted a more thorough examination and diagnosed her with a second TBI. She encountered several challenges while interacting with the healthcare system and believes these experiences contributed to her growing mistrust of it.

After the second accident, she was still unable to return to work, which became a major source of frustration and disappointment for her. Her husband's career was also impacted, as his caregiving responsibilities led to him being released from his job. This job loss resulted in the loss of their stable housing, as housing was provided by the employer during the employment period. Reflecting on this period, Kaylee noted that they came very close to experiencing homelessness. Fortunately, her husband was able to use his pension to mortgage another home.

However, the new mortgage is double what they previously paid, and they are now struggling to afford it.

Chris sustained a near-fatal TBI in a motorcycle accident and believes it was a miracle that he survived. He suffered multiple injuries, including damage to his vertebrae and shoulder, and he lost the ability to walk. His recovery was long and involved multiple transitions across different healthcare services. Following intensive care, he was transferred to a spinal rehabilitation program. Initially told he would never walk again, Chris experienced a breakthrough there. With the support of his healthcare team, he eventually regained the ability to stand and walk independently.

He was later discharged from inpatient rehabilitation to a long-term care facility, where he received poor-quality care. Fortunately, a high-performance gym operated by an acquaintance was located nearby. Once he was able to walk short distances without a walker, he began exercising at the gym with his friend. His insurance provider agreed to hire this friend as a subcontractor to support his rehabilitation. This opportunity proved to be highly beneficial, as he made rapid progress there.

Before his injury, Chris had gone through a divorce and moved into another friend's home. After his discharge from long-term care, he experienced multiple housing transitions. He stayed with friends and in commercial properties, owned by his family, which lacked basic amenities. Initially, he did not apply for housing or other social services. Thinking back, Christ thinks the reason was his personality; he had a strong desire to remain self-sufficient.

Eventually, he settled in a rental property that also served a business purpose. However, he has not felt at home there. He was living in one room of this property at the time of the interview,

and complained about the lack of privacy, as the space was partly used for business. He felt that since his divorce, he has not had a place he can truly call home. Chris expressed sadness and disappointment over the loss of his previous capabilities, the way he managed his family business, and the fact that he could no longer remember the names of those involved. Financially, he and his family have been struggling, and they have had to declare bankruptcy.

Clara sustained a TBI from a fall, but at the time, she chose not to visit the ER. The following day, she consulted her family doctor, who referred her to a sports physiotherapy clinic. At that appointment, the specialist performed a quick assessment and told her she had a "mild concussion," assuring her she was fine. Clara, however, felt something was seriously wrong and was deeply disappointed by the assessment; she cried, knowing her condition was more serious than suggested. She returned to her family doctor, who then referred her to an occupational therapist (OT), from whom she continues to receive services. Clara reports several ongoing symptoms related to her TBI, including brain fog, sensitivity, and what she believes to be worsening of her preexisting attention deficit/hyperactivity disorder (ADHD) symptoms.

Ultimately, due to executive dysfunction, she lost the job she had held for 12 years. Before her TBI, Clara had left an abusive marriage and moved back into her childhood home. She believes that one way her TBI has affected her ability to maintain stable housing is that she has not been able to work since the injury, and as a result, she has not been able to pay rent to her father. Moreover, following her TBI and job loss, she has not felt stably housed because of her family dynamics; her parents may decide to sell the place at any time.

Another reason for not being able to work and participating in community rehabilitation sessions is that she is still in legal proceedings with her ex-husband, and is responsible for taking

her child to school and back home everyday, leaving her with limited time during the day. She believes that her symptoms have impacted her ability to cope in various situations.

One of her main barriers to benefiting from their services is transportation. She finds that driving is extremely draining and requires periods of rest to recover. She has experienced other barriers during her interaction with the health and social care systems as well. She has tried to apply for affordable housing options, but has experienced challenges in this process, and she is not eager to explore housing options as she is afraid of living alone.

Peter was a professional martial artist who experienced multiple TBIs. He believes that, in the world of professional sports, coaches and sponsors place little importance on concussions. In his experience, their concern was not for the athlete's health but rather whether they would miss a match.

As a result of his TBIs, Peter has suffered from a range of symptoms, including cognitive impairments, as well as nausea, headaches, and vision problems. He emphasized that these symptoms significantly impacted his life and ultimately forced him to end his career as both an athlete and a trainer.

With disappointment, Peter recounted how his general practitioner did not take his condition seriously and failed to provide appropriate care. Eventually, he was referred to a neurologist who conducted comprehensive assessments. Following this, Peter was referred to a hospital-affiliated rehabilitation center, where he participated in group therapy for three years and received individual occupational therapy sessions.

During his treatment, Peter went through a divorce and faced serious housing challenges. He believes his TBI played a significant role in the breakdown of his marriage, as his symptoms

limited his ability to perform daily tasks and contributed to growing tension at home. After the divorce, their home was sold. Without strong social support, Peter made a poor financial decision by purchasing a new house with a mortgage far beyond his financial means. He was eventually forced to sell this home as well and experienced homelessness for two to three months. He has since managed to secure a rental property where he currently lives.

Sarah is a teacher who sustained a TBI from a trauma at work and received her diagnosis at a walk-in clinic on the day of the injury. She was advised to take a few days off and apply for insurance until she could return to work. However, a few days later, her condition worsened, prompting a visit to her family doctor. One particularly upsetting moment for Sarah, recounted with anger, was being cut off from insurance benefits because her family doctor did not support her claim. She was later referred to a physiatrist, as well as to physiotherapy and occupational therapy services.

Due to her injuries, she was unable to return to work. She experienced several symptoms, including fatigue, light and sound sensitivity, balance issues, and cognitive difficulties, all of which significantly affected various aspects of her life. Recognizing that she could not resume her teaching duties, she applied for and received long-term disability (LTD) insurance for two years. During this time, she was placed under surveillance.

Another sad moment for her was when her benefits were terminated, reporting that she was fit to work, leaving her with no income for more than two years. This financial loss created a serious crisis for her family. They struggled to pay their mortgage, medical bills, and other expenses, eventually using up all their savings and experiencing a period of residential instability. On top of these challenges, Sarah was still managing her TBI symptoms, which

further strained her relationships with her husband and daughter, leading to depression and even suicidal thoughts.

After losing her LTD benefits, Sarah began fighting for her primary insurance replacement. She received support from her union and reached out to Members of Provincial Parliament (MPPs), advocating for her case. Eventually, after two years, her insurance claim was approved. Once she began receiving benefits again, she made the decision to return to work. However, she encountered delays because of difficulties with her employer, which led to inconsistent income, and another period of housing instability. Despite these setbacks, Sarah ultimately managed to return to work, although only with reduced hours.

3.4.2 Interactions with Health and Social Care Systems

The experience of TBI impacted several aspects of the participants' lives. To manage their symptoms and address basic needs, such as housing and finances, they engaged in long-term interactions with health and social care systems. Participants' experiences with these systems are presented under two themes: (1) Feeling abandoned by providers who do not understand TBI, and (2) Feeling abandoned by systems that are not designed to meet their needs.

3.4.2.1 Feeling Abandoned by Providers Who Do Not Understand TBI

When participants experienced TBI, they initiated their interactions with the healthcare system to address their symptoms. While they generally recognized the value of the provided care, they faced significant barriers that affected their recovery and ability to regain previous roles, ultimately impacting their housing stability.

Following their injuries, participants embarked on markedly different paths to diagnosis and care. Some, like Chris and Kaylee, were taken to the ER immediately after their injury, while others received a TBI diagnosis weeks later from their family physician or in rehabilitation clinics.

Some of them experienced challenges/barriers during their first interaction with the healthcare system. Rose explained that when she experienced her accident, the paramedics assessed her; however, she was not taken to the ER, although she had sustained a TBI because of the accident: "He checked, put his hand on my head, on my neck and my spine, and he literally lifted his hand off my neck and went. You'll be fine. Go home and take an aspirin and then add a Tylenol."

Clara also stated that the day following her fall, she contacted her family doctor, and was referred to a sports physiotherapy clinic; however, they did not provide a comprehensive assessment of her condition: "[The physiotherapist] basically flashed the light in my eyes and told me I was fine. (…). Then I cried in my car because there was something that was not OK. No."

Following the diagnosis of TBI, most of the participants started having long-term interactions with the healthcare system, attending multiple appointments with family doctors, and were referred to specialists and rehabilitation centres. Two participants expressed dissatisfaction with their family physicians and the poor quality of care they received. For instance, Peter believes that his family physician should have recommended that he take time away from sport. As a result, his sponsors and coaches continued to involve him in competitions while he was still suffering from symptoms of previous TBIs:

> I can remember getting blown off by my general physician. (…). So, it was not in his best interest to investigate (…), he was the one whose care I was under when all this happened

> (…). I just don’t think he was probably feeling responsible for the whole thing (…), allowing you to continue to play, and I don't think he did anything.

Sarah faced a significant challenge with her family doctor that deeply influenced her life. After sustaining a TBI at work, she inquired about her eligibility for the Workplace Safety and Insurance Board (WSIB), but she did not receive her doctor’s support in this process. As a result, she was denied benefits, severely impacting her and her family’s financial stability:

> I went to my family doctor, and I was like I can't handle noise. I can't handle light, I can't read, but she wrote to the WSIB that I had gains or something to not return to work. And so the WSIB cut me off in those very, very early days.

Once their family doctors referred them to rehabilitation centres or specialists, one of the challenges they faced was the long waiting times. The waitlists they experienced varied from months to years. They knew that time is an important factor in TBI rehabilitation and highlighted that these long waitlists negatively impacted their condition and acted as a barrier to their recovery.

Peter touched on his experience with waitlists:

> I mean, it took me 10 months to get to see Dr. [name of the specialist]. Well, time is a very important thing when you are slipping down the slope with brain injury. So, that almost two years that I had to wait to get the assistance, yeah, that caused a lot of problems.

Sarah mentioned how the waitlist impacted her recovery and how it was important to her to receive the needed services at the right time:

> I think that you're so desperate to feel better. (…). You're so desperate that now you have to wait a year to see somebody. A lot can happen in a year (…). I mean, I would have

> loved to have seen Dr. [name of the specialist], and I think too that if I had the right interventions, the right medical support, (…) from the beginning, would my recovery have taken so long? No, no.

Clara had difficulties with doing her activities of daily living following her TBI, and she was referred to a community rehabilitation organization; however, it took more than a year for her to receive support:

> I did the paperwork with them pretty shortly after I had the brain injury, but it wasn't until like a week or two ago that I'm finally getting someone to come into my house. Like, I could have used that help this whole time.

In the case of individuals with TBI, waiting times for receiving specific services can lead to forgetfulness about those services, as happened to Kaylee:

> When [name of the specialist] referred me to the rehab, they were told it's like an 18-month waitlist at the time, and I'm not sure whatever happened to that referral, I never received the call; I just probably forgot about it, to be honest.

After long waitlists, they finally accessed the rehabilitation or community services. However, they believed they received poor service from their providers, case managers, and PSWs, who often did not follow up with clients. They also reported that there were too many cancellations.

Rose had negative experiences with her PSWs and some of her rehabilitation providers, as she believed that they were not properly trained and devoted to their job:

> It's a nightmare, PSWs; they are not trained well. Under her care, I cut my foot. I bled, and she did nothing about it (…). They should be here for three hours, but they were only here for 45 minutes and left.

Chris also expressed the same feeling about some of his rehabilitation providers: *"*The people that were supposed to show up didn't show up, when they did show up, they didn't really know what's going on with you. You know, and they chatted a lot."

The participants criticized the healthcare system regarding the attitudes of the providers in this system toward TBI and the sequelae resulting from it. They felt that their challenges were not taken seriously by the system, and in some cases, they had a trust issue with receiving the proper services from the healthcare system.

Kaylee talked about this topic and believed that her history of mental health conditions impacted the attitudes of certain providers:

> I developed a complex regional pain syndrome, and I was gaslighted a lot. I had a history in my teenage years of mental health issues, and I found that certain ER doctors would use that against me in some ways to say I was exaggerating things or making things up. So, that really impacts not only your care but like your trust in going to the ER for help.

Clara also shared the same experience of not being taken seriously by different providers:

> I definitely felt like I was not taken seriously. I know that I have complained to my family doctor about it. (…). Also, this is like 3-4 years later, and I'm still having these symptoms. Like, is there another scan that we can do? Maybe being referred to a neurologist? I've never seen a neurologist.

Peter felt that he did not receive sufficient support and proper care when he was experiencing headaches and nausea. He felt alone in dealing with his condition and believed that it played a significant role in his experience of homelessness:

> It made me self-doubt myself even more, because then I'm basically without any guidelines or any help. I know I'm throwing up all the time. (…), And I've got really no

> clue as to what they are. And I was so desperate. Sorry, I get emotional. (…) I think if there would have been a better system, I think I probably wouldn't have bought the house.

3.4.2.2 Feeling Abandoned by Systems That Are Not Designed to Meet Their Needs. The occurrence of TBI, its related symptoms, the burden on the family and finally, loss of job and financial crisis significantly impacted the ability of individuals to remain stably housed and indirectly led to residential instability and even episodes of homelessness. The challenges the participants mentioned ranged from forgetting to pay the rent, bills, and insurance to being unaware of risks and hazards at home (e.g., risk of fire) and making wrong financial decisions.

Peter explained that following his divorce, a lack of social support and poor information processing left him vulnerable to private lenders, who took advantage of him and persuaded him to make a wrong financial decision. As a result, he lost his house and experienced a period of homelessness:

> I let my house insurance expire by accident just because I forgot. So it just really came to a point where I had no money. Uh, so I had to sell the house (…). So I think if my brain would have been more sound, I would have been kept in contact with my friends who would have been more informative and helped me.

To address their housing and financial needs, participants initiated their interactions with social care services. They connected with these services through their rehabilitation team, social worker, or community service providers. Their narratives focused on housing services, insurance, and difficulties in accessing benefits.

Rose's experience illustrates a positive interaction with housing providers. Despite lacking family support and having to stop working after her TBI, she was able to stay in the same

building because it was managed by a non-profit housing organization. Following her injury, she became eligible for subsidized housing, which allowed her to afford rent. Rose believes that without this support, she would have become homeless: “Well, they had to adjust my rent if I had not been living in this building with this, I would have been homeless for sure.”

Other participants who tried to apply for affordable housing options did not receive a unit, and the main reason they raised was the waitlist. When Kaylee’s family were about to lose their place due to her husband being let go from his job, they tried several housing options, but their waitlists were more than 5 years:

> We did look into a lot of affordable housing options, but when they told us it was five plus year-long waitlist to get a unit, and at that time we probably had two or three months left, and they [her husband’s organization] would not extend it.

Peter also shared similar feedback:

> If you need a home within a year, or before a year, you are not gonna get it. By the time they [housing providers] get all of your information and get you on a list to wait for these places to be available, well, you're gonna be on the street.

At the same time that they were looking for affordable housing options or rent subsidies, they had to fight for their benefits and insurance coverage. In some cases, insurance organizations conducted inaccurate evaluations of their conditions, affecting the types of services they were eligible for.

In Sarah’s case, after her WSIB benefits were cut, she applied for long-term disability insurance and received it for a period of time. However, during the renewal process, her insurance was denied after she was placed under surveillance while attending a yoga class intended to help manage her TBI symptoms. Without any formal examination, the insurer

terminated her benefits. As a result, her family again faced a severe financial crisis, as she no longer had a source of income:

> So, LTD had surveillance done on me. And the report was that I was able to attend [name of the centre] yoga, which is for TBI people. (…). Therefore, I'm able to work, and so for those reasons, my LTD was cut off, without any empirical evidence or examinations. So, this is where things got scary for me.

Kaylee and Rose also shared that they had to fight to receive the services they needed and were eligible for, and many services they requested were rejected at first, and they had to have several interactions with their insurance to receive partial coverage. Kaylee explained that "certain services that I eventually received, they were declined at first by my car insurance, and I had to go for several evaluations to determine my need for those [services]."

In addition to these challenges, participants criticized the application process for social services or benefits. The main issues they raised included lengthy application processes, poor attitudes from system workers toward clients, and inappropriate communication. Most participants discussed the challenges they faced in completing applications and paperwork for certain services, viewing it as a barrier for individuals with TBI.

Clara stated that she has tried to apply for affordable housing options, but filling out extensive paperwork is challenging for her due to her symptoms. She explained: "Another symptom is like, it takes me flipping forever to fill out paperwork and get my stuff done."

Sarah also highlighted her experience with this barrier: "The understanding of what you're applying for, understanding of what you're reading? (…) What if you don't have Internet at home to fill out these forms online? Who faxes things anymore, like the WSIB?"

Peter also considered the long processes of applications and the waitlists as an obstacle for an individual with TBI to apply for and receive benefits:

> If you have a legitimate brain injury, no, it's not gonna get done. They make you do this, and then they make you do something else after that. (…), and then you wait for six, seven or eight months, so you forget about it (…).

He also experienced a significant barrier to communicating with the individuals working at the organizations providing social services. For example, he had difficulty understanding their conversations and also believed that they did not have appropriate attitudes toward patients with TBI:

> You would have been disgusted with the way the lady was talking. How fast she was talking. The fact that she knows that, you've obviously got some type of a condition (…). They just don't seem to care. I almost think they want you to not to be able to get the help.

3.5 Discussion

This study explored individuals' experiences of residential instability and their interactions with health and social care systems following their TBI. Participants shared their stories, focusing on their housing conditions and interactions with the health and social care systems to address their primary needs, such as securing housing and managing their TBI-related symptoms. Their housing challenges were triggered by the occurrence of TBI and were also shaped by their personal histories, relationships, and interactions with their contexts.

The individuals' accounts reflected the broad impacts of TBI on their lives. TBI is associated with a complex mix of physical, mental, cognitive, behavioural, and emotional effects (Tam et al.

2015; Williams et al. 2014), which can hinder the ability to secure and maintain stable housing (Binder et al., 2019). TBI's impact on cognitive and mental health can reduce social connectedness, creating difficulties in communication and relationships, leading to isolation and depression (Brunner et al., 2015; Temkin et al., 2009). This mirrors the experiences of participants in this study who felt abandoned by friends or family or faced significant marital issues. Sustaining a TBI undermines the satisfaction of competence and relatedness needs, adversely affecting the psychological and psychosocial functioning of individuals (Auclair-Pilote et al., 2021; Bay et al., 2012).

TBI is also linked to substantial income loss, with the severity of the injury correlating to greater unemployment and financial impacts (Malhotra et al., 2024). Unemployment was a common experience among the participants following their TBI, and five out of six participants have not been able to return to their previous jobs or secure new employment. This experience led to personal income loss and financial challenges, which are leading causes of residential instability and even homelessness (Statistics Canada, 2023). A Canadian study reported that the labour market effects of TBI are profound and persist for at least three years, indicating that at one year, affected individuals face continued challenges in workplace reintegration (Malhotra et al., 2024). This report highlights the importance of vocational reintegration and underscores its significance in prospective TBI research and clinical follow-up assessments.

The impacts of TBI are also shaped by individuals' socioeconomic status (SES), which is defined as the combined economic and social status of an individual or a group, with lower SES linked to poorer post-injury outcomes (Baker, 2014; Venturini et al., 2024). Participants' narratives revealed that factors such as education, system knowledge, and prior employment in health or social services facilitated system navigation and self-advocacy, while their absence

constrained these outcomes. SES influences individuals' ability to access services due to limited awareness of available options, physical barriers such as resource scarcity, distance, and cost, as well as less robust support networks during illness (McMaughan et al., 2020). Consequently, addressing SES could be a key approach to reducing societal inequalities and ensuring more equitable access to care and social services (McMaughan et al., 2020; Venturini et al., 2024). For instance, assessing patients' SES during initial interactions with the health system helps identify those at risk of worse outcomes, enabling better resource allocation and appropriate community support.

Personal relationships play a critical role in both recovery and housing stability following TBI. Pre-TBI family dynamics significantly influence post-TBI outcomes and social integration (Sady et al., 2010; Temple et al., 2016). Relationship issues, such as intimate partner violence (IPV) or separation, heighten the risk of residential instability (E. N. Adams et al., 2021; Kulu et al., 2021), a risk further exacerbated by major health conditions like TBI (Oddy et al., 2012; Topolovec-Vranic et al., 2014). For instance, separation often results in financial strain, asset division, and multiple housing transitions, which persist even a year later (Kulu et al., 2021). Conversely, post-TBI support from family and friends is crucial in recovery and housing stability. Financial aid from a partner, housing assistance from parents, or help from friends enabled participants to better manage residential instability. Research highlights the positive role of social support in TBI rehabilitation, with family involvement during inpatient care improving cognitive function and community participation up to nine months post-discharge (Downing et al., 2021). Moreover, receiving both emotional support from friends and loved ones, as well as practical support, such as financial assistance or transportation, has been identified as a positive factor in the recovery journey (Bogner et al., 2019). The consequences of lacking such support

were evident in the case of one participant who, after experiencing separation, ultimately faced an episode of homelessness.

The interactions of individuals with health and social care systems played a pivotal role in their post-TBI outcomes. TBI-related disability extends beyond the acute phase and incurs high healthcare costs and prolonged system interactions (Albrecht et al., 2019; Corrigan & Hammond, 2013; Wickwire et al., 2016), which significantly shape post-traumatic experiences and housing stability. Most participants in our study experienced mild TBI (concussion). Research highlights a knowledge gap among healthcare professionals in identifying concussion symptoms and providing evidence-based management (Donaworth et al., 2016; Lebrun et al., 2013; Mann et al., 2017). Additionally, stigma toward individuals with psychiatric or substance use histories may lead to suboptimal care (Grewal et al., 2024a; Henderson et al., 2014; Van Boekel et al., 2015), as happened to one of the participants.

These issues, along with long waitlists, a common barrier to healthcare access in Canada, further hinder proper TBI treatment, contributing to delayed recovery, persistent symptoms, and prolonged income loss (Déry et al., 2023; Malhotra et al., 2024b). Inaccurate assessments may also prevent access to rehabilitation and social services, exacerbating the condition and potentially affecting housing stability (Alban et al., 2010; Galicia et al., 2023). Therefore, providing education for healthcare professionals, such as through multidisciplinary team meetings, is essential for enhancing their understanding of TBI symptoms and co-occurring conditions, which can help shift perceptions and improve interactions with individuals affected by TBI (Chan et al., 2022; Keightley et al., 2009).

Participants' post-injury interactions with the social care services played an important role in their housing stability. For example, receiving proper services from the system could have a

direct positive impact on their housing status through a subsidy or insurance program. However, barriers, such as inaccurate assessments, prevented individuals from accessing and benefiting from these programs. Participants in our study had difficulties understanding application procedures, filling out the forms by themselves, and communicating effectively with service staff. Literature has shown that social service workers have limited knowledge of TBI, and this could act as a barrier to patients' access to the benefits. They feel ill-equipped to deal with the challenges experienced by this population, such as forgetfulness and anger outbursts, which makes them feel either incapable of delivering services or compelled to exceed their designated responsibilities (Estrella et al., 2021a; Norman et al., 2023). Therefore, there is an urgent need for formalized education for employees of social sectors to better understand the needs of their clients with TBI (Jubinville et al., 2025; Topolovec-Vranic et al., 2013).

This study highlighted critical issues in service provision within existing system structures. Although our participants had stable housing prior to their TBI, they still struggled to access proper care and social services for which they were eligible. This underscores how much more severe the challenges could be for individuals who are already disadvantaged before their injuries and emphasizes the urgent need for actions to better support this population. Our findings demonstrated the crucial role of individuals' interactions with people, including their family and friends, and the system structures, such as health and social service organizations, following TBI and their impact on residential instability.

Importantly, these interactions are influenced by the broader context that regulates healthcare and social service systems, including social housing programs and housing availability through funding control and government regulations (Sauvé-Schenk et al., 2020). As a result, it significantly shapes how these systems interact with individuals with TBI, contributing to

inequities and serving as a key environmental factor affecting the lives of those with disabilities (Heinemann et al., 2015). It determines individuals' access to healthcare and social services and ultimately influences their ability to maintain stable housing post-injury. Revisiting certain regulations, including the eligibility of individuals with TBI for health and social services, could be an effective way to address residential instability and support long-term housing stability.

Limitation

Our sample comprised individuals from a relatively homogeneous background (White Canadian citizens). Although the literature indicates that TBI is more prevalent among males, most of our participants were female, and all our participants had stable housing before their injuries. Taken together, these demographic characteristics narrowed the diversity of perspectives represented in this study. Additionally, no data on participants' income and education was collected, limiting our ability to fully contextualize factors that may have influenced their ability to remain housed despite being at risk homelessness. Future studies should consider including participants who were living in more precarious situations when they were injured to better capture their interactions with health and social care systems.

3.6 Conclusion

Individuals with TBI may face numerous challenges after their injury, leading to residential instability and increased vulnerability to homelessness. These challenges can stem from both pre- and post-TBI experiences, with health and social care systems and broader context playing significant roles in shaping these experiences. This study highlights a knowledge gap among healthcare professionals and social organization staff regarding the hidden complications of TBI. This gap can affect the quality of services patients receive, potentially leading to harmful

outcomes. Additionally, the study underscores a lack of resources in both the healthcare and social sectors. This suggests the need for policy adjustments to better tailor and expand current services (e.g., health and housing services) to support this population effectively. Moreover, future studies should focus on developing programs that enhance the responsiveness of health and social care systems, as well as providers' knowledge of the unique needs of individuals with TBI.

Acknowledgement

The authors would like to thank all participants for their participation in this study.

Declaration of Conflicting Interests

The Authors declare that there is no conflict of interest

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

3.7 References

Abrahamson, V., Jensen, J., Springett, K., & Sakel, M. (2017). Experiences of patients with traumatic brain injury and their carers during transition from in-patient rehabilitation to the community: a qualitative study. *Disability and Rehabilitation*, *39*(17), 1683–1694. https://doi.org/10.1080/09638288.2016.1211755

Adams, E. N., Clark, H. M., Galano, M. M., Stein, S. F., Grogan-Kaylor, A., & Graham-Bermann, S. (2021). Predictors of housing instability in women who have experienced intimate partner violence. *Journal of Interpersonal Violence*, *36*(7–8), 3459–3481. https://doi.org/10.1177/0886260518777001

Adshead, C. D., Norman, A., & Holloway, M. (2021). The inter-relationship between acquired brain injury, substance use and homelessness; the impact of adverse childhood experiences: an interpretative phenomenological analysis study. *Disability and Rehabilitation*, *43*(17), 2411–2423. https://doi.org/10.1080/09638288.2019.1700565

Alban, R. F., Berry, C., Ley, E., Mirocha, J., Margulies, D. R., Tillou, A., & Salim, A. (2010). Does health care insurance affect outcomes after traumatic brain injury? Analysis of the National Trauma Databank. *The American Surgeon*, *76*(10), 1108–1111. https://doi.org/10.1177/000313481007601019

Albrecht, J. S., Barbour, L., Abariga, S. A., Rao, V., & Perfetto, E. M. (2019). Risk of depression after traumatic brain injury in a large national sample. *Journal of Neurotrauma*, *36*(2), 300–307. https://doi.org/10.1089/neu.2017.5608

Albrecht, J. S., & Wickwire, E. M. (2021). Healthcare utilization following traumatic brain injury in a large national sample. *The Journal of Head Trauma Rehabilitation*, *36*(3), E147–E154. DOI: 10.1097/HTR.0000000000000625

Andelic, N., Røe, C., Tenovuo, O., Azouvi, P., Dawes, H., Majdan, M., Ranta, J., Howe, E. I., Wiegers, E. J. A., & Tverdal, C. (2021). Unmet rehabilitation needs after traumatic brain injury across Europe: results from the CENTER-TBI study. *Journal of Clinical Medicine*, *10*(5), 1035. https://doi.org/10.3390/jcm10051035

Argintaru, N., Chambers, C., Gogosis, E., Farrell, S., Palepu, A., Klodawsky, F., & Hwang, S. W. (2013). A cross-sectional observational study of unmet health needs among homeless and vulnerably housed adults in three Canadian cities. *BMC Public Health*, *13*(1), 1–9. doi:10.1186/1471-2458-13-577

Auclair-Pilote, J., Lalande, D., Tinawi, S., Feyz, M., & De Guise, E. (2021). Satisfaction of basic psychological needs following a mild traumatic brain injury and relationships with post-concussion symptoms, anxiety, and depression. *Disability and Rehabilitation*, *43*(4), 507–515. https://doi.org/10.1080/09638288.2019.1630858

Baker, E. H. (2014). Socioeconomic status, definition. *The Wiley Blackwell Encyclopedia of Health, Illness, Behavior, and Society*, 2210–2214. https://doi.org/10.1002/9781118410868.wbehibs395

Bay, E. H., Blow, A. J., & Yan, X. (2012). Interpersonal relatedness and psychological functioning following traumatic brain injury: Implications for marital and family therapists. *Journal of Marital and Family Therapy*, *38*(3), 556–567. https://doi.org/10.1111/j.1752-0606.2011.00231.x

Binder, A. S., Lancaster, K., Lengenfelder, J., Chiaravalloti, N. D., & Genova, H. M. (2019). Community integration in traumatic brain injury: the contributing factor of affect recognition deficits. *Journal of the International Neuropsychological Society*, *25*(8), 890–895. https://doi.org/10.1017/S1355617719000559

Bogner, J., Hade, E. M., Peng, J., Beaulieu, C. L., Horn, S. D., Corrigan, J. D., Hammond, F. M., Dijkers, M. P., Montgomery, E., & Gilchrist, K. (2019). Family involvement in traumatic brain injury inpatient rehabilitation: A propensity score analysis of effects on outcomes during the first year after discharge. *Archives of Physical Medicine and Rehabilitation*, *100*(10), 1801–1809. https://doi.org/10.1016/j.apmr.2019.04.008

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Brunner, M., Hemsley, B., Palmer, S., Dann, S., & Togher, L. (2015). Review of the literature on the use of social media by people with traumatic brain injury (TBI). *Disability and Rehabilitation*, *37*(17), 1511–1521.

Chan, V., Marcus, L., Burlie, D., Mann, R. E., Toccalino, D., Cusimano, M. D., Ilie, G., & Colantonio, A. (2022). Social determinants of health associated with psychological distress stratified by lifetime traumatic brain injury status and sex: cross-sectional evidence from a population sample of adults in Ontario, Canada. *Plos One*, *17*(8), e0273072. https://doi.org/10.3109/09638288.2015.1045992

Chan, V., Toccalino, D., Omar, S., Shah, R., & Colantonio, A. (2022). A systematic review on integrated care for traumatic brain injury, mental health, and substance use. *PLoS One*, *17*(3), e0264116. https://doi.org/10.1371/journal.pone.0264116

Chen, A., Bushmeneva, K., Zagorski, B., Colantonio, A., Parsons, D., & Wodchis, W. P. (2012). Direct cost associated with acquired brain injury in Ontario. *BMC Neurology*, *12*(1), 1–12. https://doi.org/10.1186/1471-2377-12-76

Clandinin, D. J., & Connelly, F. M. (2000). *Experience and story in qualitative research*. San Francisco: Jossey-Bass.

Corrigan, J. D., & Hammond, F. M. (2013). Traumatic brain injury as a chronic health condition. *Archives of Physical Medicine and Rehabilitation*, *94*(6), 1199–1201. https://doi.org/10.1016/j.apmr.2013.01.023

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.

Czechowski, K., Sylvestre, J., Gogosis, E., Agha, A., Kerman, N., Polillo, A., Palepu, A., & Hwang, S. W. (2022). Cycles of instability: Proximal and distal influences on residential instability among people with histories of homelessness in three Canadian cities. *Journal of Community Psychology*. https://doi.org/10.1002/jcop.22843

DeMatteo, C. A., Cousins, M. A., Lin, C.-Y. A., Law, M. C., Colantonio, A., & Macarthur, C. (2008). Exploring postinjury living environments for children and youth with acquired brain injury. *Archives of Physical Medicine and Rehabilitation*, *89*(9), 1803–1810. https://doi.org/10.1016/j.apmr.2008.02.025

Déry, J., Potvin, I., de Guise, E., & Lamontagne, M.-E. (2023). *Effects of waiting time for specialized interdisciplinary rehabilitation on adult patients with persistent symptoms of mild traumatic brain injury*. https://doi.org/10.21203/rs.3.rs-3054834/v1

Dewan, M. C., Rattani, A., Gupta, S., Baticulon, R. E., Hung, Y.-C., Punchak, M., Agrawal, A., Adeleye, A. O., Shrime, M. G., & Rubiano, A. M. (2018). Estimating the global incidence of traumatic brain injury. *Journal of Neurosurgery*, *130*(4), 1080–1097. https://doi.org/10.3171/2017.10.JNS17352

Donaworth, M. A., Grandhi, R. K., Logan, K., Gubanich, P. J., & Myer, G. D. (2016). Is current medical education adequately preparing future physicians to manage concussion: an initial

evaluation. *The Physician and Sportsmedicine*, *44*(1), 1–7. https://doi.org/10.1080/00913847.2016.1135039

Downing, M., Hicks, A., Braaf, S., Myles, D., Gabbe, B., Cameron, P., Ameratunga, S., & Ponsford, J. (2021). Factors facilitating recovery following severe traumatic brain injury: A qualitative study. *Neuropsychological Rehabilitation*, *31*(6), 889–913. https://doi.org/10.1080/09602011.2020.1744453

Engström, Å., & Söderberg, S. (2011). Transition as experienced by close relatives of people with traumatic brain injury. *Journal of Neuroscience Nursing*, *43*(5), 253–260. DOI: 10.1097/JNN.0b013e318227ef9b

Esin, C. (2011). Narrative analysis approaches. *Qualitative Research Methods in Psychology: Combining Core Approaches*, 92–117.

Estrella, M. J., Kirsh, B., Kontos, P., Grigorovich, A., Colantonio, A., Chan, V., & Nalder, E. J. (2021). Critical characteristics of housing and housing supports for individuals with concurrent traumatic brain injury and mental health and/or substance use challenges: a qualitative study. *International Journal of Environmental Research and Public Health*, *18*(22), 12211. https://doi.org/10.3390/ijerph182212211

Fu, T. S., Jing, R., Fu, W. W., & Cusimano, M. D. (2016). Epidemiological trends of traumatic brain injury identified in the emergency department in a publicly-insured population, 2002-2010. *PloS One*, *11*(1), e0145469. https://doi.org/10.1371/journal.pone.0145469

Galicia, K. E., Haider, S. D., Reidy, L. E., Anstadt, M. J., Kubasiak, J. C., Gonzalez, R. P., & Patel, P. P. (2023). Association between health insurance and outcomes after traumatic brain injury: A national ACS-TQP-PUF database study. *Journal of Surgical Research*, *290*, 16–27. https://doi.org/10.1016/j.jss.2023.03.050

Grauwmeijer, E., Heijenbrok-Kal, M. H., Haitsma, I. K., & Ribbers, G. M. (2012). A prospective study on employment outcome 3 years after moderate to severe traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*, *93*(6), 993–999. https://doi.org/10.1016/j.apmr.2012.01.018

Grewal, J., Kennedy, C. J., Mamman, R., Biagioni, J. B., Garcia-Barrera, M. A., & Schmidt, J. (2024). Understanding the barriers and facilitators of healthcare services for brain injury and concurrent mental health and substance use issues: a qualitative study. *BMC Health Services Research*, *24*(1), 881. https://doi.org/10.1186/s12913-024-11316-1

Heinemann, A. W., Magasi, S., Hammel, J., Carlozzi, N. E., Garcia, S. F., Hahn, E. A., Lai, J.-S., Tulsky, D., Gray, D. B., & Hollingsworth, H. (2015). Environmental factors item development for persons with stroke, traumatic brain injury, and spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, *96*(4), 589–595. https://doi.org/10.1016/j.apmr.2013.11.024

Henderson, C., Noblett, J., Parke, H., Clement, S., Caffrey, A., Gale-Grant, O., Schulze, B., Druss, B., & Thornicroft, G. (2014). Mental health-related stigma in health care and mental health-care settings. *The Lancet Psychiatry*, *1*(6), 467–482. DOI: 10.1016/S2215-0366(14)00023-6

Hoepner, J. K., & Keegan, L. C. (2023). "I avoid interactions with medical professionals as much as possible now": Health care experiences of individuals with traumatic brain injuries. *American Journal of Speech-Language Pathology*, *32*(2S), 848–866. https://doi.org/10.1044/2022_AJSLP-22-00103

Hou, Y., Zhou, A., Brooks, L., Reid, D., Turkstra, L., & MacDonald, S. (2024). Rehabilitation access for individuals with cognitive-communication challenges after traumatic brain injury: A co-design study with persons with lived experience. *International Journal of Language & Communication Disorders*, *59*(2), 648–664. DOI: 10.1111/1460-6984.12895

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in qualitative research. *American Journal of Pharmaceutical Education*, *84*(1), 7120. https://doi.org/10.5688/ajpe7120

Jovchelovitch, S., & Bauer, M. W. (2000). Narrative interviewing. *Qualitative Researching with Text, Image and Sound*, *57*, 74. http://digital.casalini.it/9781446205389

Jubinville, W., Ducharme, R., Hendryckx, C., Roy, L., & Bottari, C. (2025). Barriers, facilitators and solutions to the care of people experiencing homelessness with traumatic brain injury in Quebec, Canada: clinicians' and concerned parties' perspectives. *Disability and Rehabilitation*, 1–10. https://doi.org/10.1080/09638288.2025.2496359

Keightley, M. L., Ratnayake, R., Minore, B., Katt, M., Cameron, A., White, R., Bellavance, A., Longboat-White, C., & Colantonio, A. (2009). Rehabilitation challenges for Aboriginal clients recovering from brain injury: A qualitative study engaging health care practitioners. *Brain Injury*, *23*(3), 250–261. https://doi.org/10.1080/02699050902748331

Kim, J.-H. (2015). *Understanding narrative inquiry: The crafting and analysis of stories as research*. Sage Publications.

Knollman-Porter, K., Brown, J. A., Wallace, T., & Spitz, S. (2021). First-line health care providers' reported knowledge of and referrals to speech-language pathologists for clients with mild traumatic brain injury. *American Journal of Speech-Language Pathology*, *30*(5), 2214–2227. https://doi.org/10.1044/2021_AJSLP-20-00373

Kohler, M. J., Hendrickx, M. D., Powell-Jones, A., & Bryan-Hancock, C. (2020). A systematic review of cognitive functioning after traumatic brain injury in individuals aged 10–30 years. *Cognitive and Behavioral Neurology*, *33*(4), 233–252.

Kulu, H., Mikolai, J., Thomas, M. J., Vidal, S., Schnor, C., Willaert, D., Visser, F. H. L., & Mulder, C. H. (2021). Separation and elevated residential mobility: A cross-country comparison. *European Journal of Population*, *37*, 121–150. https://doi.org/10.1007/s10680-020-09561-1

Laliberté, M., E. Feldman, D., Williams-Jones, B., & Hunt, M. (2018). Operationalizing wait lists: strategies and experiences in three hospital outpatient physiotherapy departments in Montreal. *Physiotherapy Theory and Practice*, *34*(11), 872–881. https://doi.org/10.1080/09593985.2018.1430877

Lebrun, C. M., Mrazik, M., Prasad, A. S., Tjarks, B. J., Dorman, J. C., Bergeron, M. F., Munce, T. A., & Valentine, V. D. (2013). Sport concussion knowledge base, clinical practices and needs for continuing medical education: a survey of family physicians and cross-border comparison. *British Journal of Sports Medicine*, *47*(1), 54–59. https://doi.org/10.1136/bjsports-2012-091480

Lincoln, Y., & Guba, B. (1985). *Naturalistic inquiry. Beverly Hills: Sage Pulications*. Inc.

Lumivero. (2025). Nvivo (Version 14). *Computer Software*. https://lumivero.com/products/nvivo/

Malhotra, A. K., Jaffe, R. H., Shakil, H., Mathieu, F., Nathens, A. B., Kulkarni, A. V, Diep, C., Yuan, E. Y., Ladha, K. S., & Coyte, P. C. (2024). Unemployment and personal income loss after traumatic brain injury. *JAMA Surgery*, *159*(12), 1415–1422. doi:10.1001/jamasurg.2024.4285

Mann, A., Tator, C. H., & Carson, J. D. (2017). Investigation of knowledge and attitude about concussion diagnosis and management among family medicine residents. *British Journal of Sports Medicine*, *51*(11), A53–A53. https://doi.org/10.1136/bjsports-2016-097270.138

McCormack, C. (2000). From interview transcript to interpretive story: Part 1—Viewing the transcript through multiple lenses. *Field Methods*, *12*(4), 282–297. https://doi.org/10.1177/1525822X0001200402

McMaughan, D. J., Oloruntoba, O., & Smith, M. L. (2020). Socioeconomic status and access to healthcare: interrelated drivers for healthy aging. *Frontiers in Public Health*, *8*, 231. https://doi.org/10.3389/fpubh.2020.00231

Norman, A., Curro, V., Holloway, M., Percuklievska, N., & Ferrario, H. (2023). Experiences of individuals with acquired brain injury and their families interacting with community services: a systematic scoping review. *Disability and Rehabilitation*, *45*(4), 739–751. https://doi.org/10.1080/09638288.2022.2043465

O'connor, C., Colantonio, A., & Polatajko, H. (2005). Long term symptoms and limitations of activity of people with traumatic brain injury: a ten-year follow-up. *Psychological Reports*, *97*(1), 169–179. https://doi.org/10.2466/pr0.97.1.169-179

Oddy, M., Moir, J. F., Fortescue, D., & Chadwick, S. (2012). The prevalence of traumatic brain injury in the homeless community in a UK city. *Brain Injury*, *26*(9), 1058–1064. https://doi.org/10.3109/02699052.2012.667595

Oyesanya, T. O., Loflin, C., Harris, G., & Bettger, J. P. (2021). "Just tell me in a simple way": A qualitative study on opportunities to improve the transition from acute hospital care to home from the perspectives of patients with traumatic brain injury, families, and providers. *Clinical Rehabilitation*, *35*(7), 1056–1072. https://doi.org/10.1177/0269215520988679

Polkinghorne, D. E. (1995). Narrative configuration in qualitative analysis. *International Journal of Qualitative Studies in Education*, *8*(1), 5–23. https://doi.org/10.1080/0951839950080103

Rigney, G., Leith, J., Lennon, M., Reeves, A., & Chrisinger, B. (2022). The association of traumatic brain injury with neurologic and psychiatric illnesses among individuals experiencing homelessness: a systematic review and meta-analysis. *Journal of Health Care for the Poor and Underserved*, *33*(2), 685–701. DOI: 10.1353/hpu.2022.0056

Rotondi, A. J., Sinkule, J., Balzer, K., Harris, J., & Moldovan, R. (2007). A qualitative needs assessment of persons who have experienced traumatic brain injury and their primary family caregivers. *The Journal of Head Trauma Rehabilitation*, *22*(1), 14–25.

Sady, M. D., Sander, A. M., Clark, A. N., Sherer, M., Nakase-Richardson, R., & Malec, J. F. (2010). Relationship of preinjury caregiver and family functioning to community integration in adults with traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*, *91*(10), 1542–1550. https://doi.org/10.1016/j.apmr.2010.07.012

Sauvé-Schenk, K. M. L., Egan, M. Y., Dubouloz-Wilner, C.-J., & Kristjansson, E. (2020). Influence of low income on return to participation following stroke. *Disability and Rehabilitation*, *42*(19), 2726–2734. https://doi.org/10.1080/09638288.2019.1570355

Shiner, C. T., Vratsistas-Curto, A., Bramah, V., McDonell, K., Mahoney, A. E. J., Sweeney, S., & Faux, S. G. (2022). Assessing unmet rehabilitation needs and the feasibility of a telehealth rehabilitation consultation service for road trauma survivors recently discharged from hospital. *Disability and Rehabilitation*, *44*(15), 3795–3804. https://doi.org/10.1080/09638288.2021.1887377

Spitz, G., Ponsford, J. L., Rudzki, D., & Maller, J. J. (2012). Association between cognitive performance and functional outcome following traumatic brain injury: a longitudinal multilevel examination. *Neuropsychology*, *26*(5), 604. DOI: 10.1037/a0029239

Statistics Canada. (2023). *Homelessness: How does it happen?* https://www.statcan.gc.ca/o1/en/plus/5170-homelessness-how-does-it-happen

Rao, D., McFaull, S., Thompson, W., Jayaraman, G.C. (2018). At-a-glance-Traumatic brain injury management in Canada: changing patterns of care. *Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice*, *38*(3), 147. DOI: 10.24095/hpcdp.38.3.05

Stubbs, J. L., Thornton, A. E., Sevick, J. M., Silverberg, N. D., Barr, A. M., Honer, W. G., & Panenka, W. J. (2020). Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. *The Lancet Public Health*, *5*(1), e19–e32. https://doi.org/10.1016/S2468-2667(19)30188-4

Svoboda, T., & Ramsay, J. T. (2014). High rates of head injury among homeless and low-income housed men: a retrospective cohort study. *Emergency Medicine Journal*, *31*(7), 571–575. https://doi.org/10.1136/emermed-2012-201761

Sylvestre, J., Ollenberg, M., & Trainor, J. (2009). A model of housing stability for people with serious mental illness. *Canadian Journal of Community Mental Health*, *28*(1), 195–207. https://doi.org/10.7870/cjcmh-2009-0015

Tam, S., McKay, A., Sloan, S., & Ponsford, J. (2015). The experience of challenging behaviours following severe TBI: a family perspective. *Brain Injury*, *29*(7–8), 813–821. https://doi.org/10.3109/02699052.2015.1005134

Temkin, N. R., Corrigan, J. D., Dikmen, S. S., & Machamer, J. (2009). Social functioning after traumatic brain injury. *The Journal of Head Trauma Rehabilitation*, *24*(6), 460–467. DOI: 10.1097/HTR.0b013e3181c13413

Temple, J. L., Struchen, M. A., & Pappadis, M. R. (2016). Impact of pre-injury family functioning and resources on self-reported post-concussive symptoms and functional outcomes in persons with mild TBI. *Brain Injury*, *30*(13–14), 1672–1682. https://doi.org/10.3109/02699052.2015.1113561

Topolovec-Vranic, J., Ennis, N., Colantonio, A., Cusimano, M. D., Hwang, S. W., Kontos, P., Ouchterlony, D., & Stergiopoulos, V. (2012). Traumatic brain injury among people who are homeless: a systematic review. *BMC Public Health*, *12*(1), 1–8. https://doi.org/10.1186/1471-2458-12-1059

Topolovec-Vranic, J., Ennis, N., Howatt, M., Ouchterlony, D., Michalak, A., Masanic, C., Colantonio, A., Hwang, S. W., Kontos, P., & Stergiopoulos, V. (2014). Traumatic brain injury among men in an urban homeless shelter: observational study of rates and mechanisms of injury. *Canadian Medical Association Open Access Journal*, *2*(2), E69–E76. https://doi.org/10.9778/cmajo.20130046

Topolovec-Vranic, J., Ennis, N., Ouchterlony, D., Cusimano, M. D., Colantonio, A., Hwang, S. W., Kontos, P., Stergiopoulos, V., & Brenner, L. (2013). Clarifying the link between traumatic brain injury and homelessness: Workshop proceedings. *Brain Injury*, *27*(13–14), 1600–1605. https://doi.org/10.3109/02699052.2013.823666

Totman, A. A., Lamm, A. G., Goldstein, R., Giacino, J. T., Bodien, Y. G., Ryan, C. M., Schneider, J. C., & Zafonte, R. (2023). Longitudinal trends in severe traumatic brain injury inpatient rehabilitation. *The Journal of Head Trauma Rehabilitation*, *38*(3), E186–E194. DOI: 10.1097/HTR.0000000000000814

Turner, B. J., Fleming, J. M., Ownsworth, T. L., & Cornwell, P. L. (2008). The transition from hospital to home for individuals with acquired brain injury: a literature review and research recommendations. *Disability and Rehabilitation*, *30*(16), 1153–1176. https://doi.org/10.1080/09638280701532854

Turner, B. J., Fleming, J., Ownsworth, T., & Cornwell, P. (2011). Perceived service and support needs during transition from hospital to home following acquired brain injury. *Disability and Rehabilitation*, *33*(10), 818–829. https://doi.org/10.3109/09638288.2010.513422

Van Boekel, L. C., Brouwers, E. P., Van Weeghel, J., & Garretsen, H. F. (2015). Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: systematic review. *Tijdschrift Voor Psychiatrie*, *57*(7), 489–497. https://doi.org/10.1016/j.drugalcdep.2013.02.018

Venturini, S., Still, M. E. H., Hutchinson, P. J., & Gwinnutt, J. M. (2024). Is pre-injury socioeconomic status associated with outcomes in patients with traumatic brain injury? A systematic review. *Journal of Neurotrauma*, *41*(7–8), 789–806. https://doi.org/10.1089/neu.2022.0341

Watanabe, S. (2013). Vocational rehabilitation for clients with cognitive and behavioral disorders associated with traumatic brain injury. *Work*, *45*(2), 273–277. https://doi.org/10.3233/WOR-131594

Wickwire, E. M., Williams, S. G., Roth, T., Capaldi, V. F., Jaffe, M., Moline, M., Motamedi, G. K., Morgan, G. W., Mysliwiec, V., & Germain, A. (2016). Sleep, sleep disorders, and mild traumatic brain injury. What we know and what we need to know: findings from a national working group. *Neurotherapeutics*, *13*(2), 403–417. https://doi.org/10.1007/s13311-016-0429-3

Williams, M. W., Rapport, L. J., Millis, S. R., & Hanks, R. A. (2014). Psychosocial outcomes after traumatic brain injury: life satisfaction, community integration, and distress. *Rehabilitation Psychology*, *59*(3), 298. http://dx.doi.org/10.1037/a0037164

CHAPTER 4: Preventing Homelessness Among Individuals with Traumatic Brain Injury: A Qualitative Case Study of a Community Service Provider

This chapter has been submitted to the *Journal of Social Distress and Homelessness*, and the manuscript has been prepared in accordance with the journal's requirements, but the numbering of the tables and figures has been modified for the thesis.

I acknowledge the following people who made contributions to this study:

Ramin Banimahdi designed the study, with Katrine Sauvé-Schenk providing support. Ramin Banimahdi collected and analyzed the data and drafted the manuscript with input from all authors (Ramin Banimahdi, Katrine Sauvé-Schenk, Mary Egan, and John Sylvestre). All authors contributed to the interpretation of the findings, revised the manuscript for critically important intellectual content, and approved the final version for publication.

Preventing Homelessness Among Individuals with Traumatic Brain Injury: A Qualitative Case Study of a Community Service Provider

Ramin Banimahdi[1*], Mary Egan[1], John Sylvestre[2,3], Katrine Sauvé-Schenk[1,3]

1. School of Rehabilitation Sciences, University of Ottawa, Ottawa, ON, Canada

2. School of Psychology, University of Ottawa, Ottawa, ON, Canada

3. Centre for Research on Educational and Community Services, University of Ottawa, Ottawa, ON, Canada

4.1 Abstract

Introduction: Individuals with traumatic brain injury (TBI) might face significant challenges in securing stable housing. This study describes how an organization providing community services to individuals with TBI addresses housing needs and prevents homelessness.

Methods: A qualitative single-case study was employed. Eight staff members working at different organizational levels were interviewed. Agency documents were also analyzed to increase understanding of the context. Data were analyzed based on Stake's approach.

Results: The organization considers housing at different points, and apart from their limited housing program, it provides individualized support tailored to client needs. However, housing needs are not always met due to capacity constraints, limited documentation of housing, and systemic barriers. Key barriers include limited awareness of TBI community services among health and social service providers, inadequate funding and resources, complex application

processes for housing supports, and bureaucratic procedures for implementation of community service plans.

Conclusion: Findings suggested that community service providers should adopt a proactive approach toward housing issues and provide comprehensive support within their capacity. Moreover, it highlighted that broader systemic barriers undermine efforts to support stable tenancy. Policy revisions, greater awareness of TBI housing needs, and expanded community resources are critical to improving housing outcomes for this population.

Keywords: Traumatic brain injury, community health services, housing, homelessness, qualitative research

4.2 Introduction

Traumatic brain injury (TBI) is a significant public health issue worldwide (1). Research has documented the long-term physical, mental, and social challenges faced by individuals with TBI, which can increase their risk of housing insecurities (2,3). These challenges underscore the critical role of post-acute rehabilitation, community-based services, and community integration for this population. While service delivery in acute care and rehabilitation settings has received considerable attention (4,5), the role of community services, particularly in addressing housing issues, remains less well understood.

Estimates suggest that annually, 50-60 million new TBI cases occur worldwide, over 90% of which are mild (1,6). In Canada, more than 20,000 individuals are hospitalized annually due to TBI (7). Survivors often face long-term challenges and require extensive support services (8,9). Over the past decades, the average duration of inpatient rehabilitation for TBI has declined (10). As a result, post-acute TBI rehabilitation has become essential in helping patients reintegrate into

their homes and communities (11,12). While shorter inpatient stays do not negatively impact functional outcomes, they increase the demand for outpatient rehabilitation and community services (13,14).

After being discharged from the hospital, many individuals with TBI and their loved ones experience a significant reduction in support from health and social care services (15–17). Research has emphasized the need for rehabilitation programs during this time that help individuals with TBI adjust to its effects and regain meaningful roles and activities (18–20). Furthermore, the literature highlights that adults with TBI and their families require ongoing professional support and proactive services after returning home to address challenges in family life, social participation, employment, and financial stability (21). These factors fall under the broader concept of community integration, underscoring the importance of community rehabilitation and support services beyond inpatient care (22,23). These services are delivered by fee-for-service providers and nonprofit community organizations (15,16), yet evidence about them is limited.

Individuals recovering from TBI face challenges integrating into their communities and maintaining close social connections (23,26). Key aspects of community integration include regaining a sense of belonging, meaningful social connections, participation in valued activities, and control over one's life (23). As community integration is strongly linked to life satisfaction, emotional well-being, and overall quality of life, it is often considered a primary goal of TBI rehabilitation (27–30).

Despite the crucial role that community services may play in strengthening social support and peer connections and reducing social isolation (31–34), little attention has been given to these services in research and resource allocations (35). Two Canadian studies investigated the barriers

to implementing community programs in Ontario and British Columbia and reported inconsistent or insufficient funding, steep resource costs and restrictive funding criteria as significant challenges for these organizations (36,37). Moreover, both community service providers and individuals with TBI highlighted that systemic challenges negatively influence access to and provision of community services to this population, which can lead to detrimental outcomes in the TBI population looking for these services (35).

Individuals with TBI are disproportionately represented among the homeless and unstably housed populations (38,39), indicating significant challenges with community integration after injury. These difficulties may stem from cognitive, emotional, and behavioral impairments. For instance, struggles with financial planning can lead to homelessness, as can difficulties in adhering to tenancy agreements (40,41). As a result, securing stable housing is often a key priority for individuals with TBI who are accessing community services following the acute phase of their injury.

Research from multiple countries highlights the barriers this population faces in accessing community services, including limited awareness of available programs, restrictive eligibility criteria, and a lack of referrals (35,42). Moreover, Norman et al., through a scoping review, showed that housing is one of the unmet needs of this population while interacting with these services, and unfortunately, the unmet needs are largely caused by a lack of service provision (43).

Despite these findings, little is known about how community-based organizations respond to the housing needs of individuals with TBI. This study aimed to address this gap by describing how one such organization supports individuals with TBI to address their housing needs. Specifically, it explored how this organization guides these individuals toward services to

prevent homelessness and support stable tenancy. A qualitative case study design is well-suited to explore and understand complex social phenomena within their real-world contexts, highlighting issues and questions that may be important across similar organizations (44,45).

4.3 Materials and Methods

4.3.1 Design

A qualitative single-case study design, based on Stake's approach, was used (46). Stake views a case as "a specific, complex, functioning thing," or more specifically, "an integrated system" which "has a boundary and working parts" and is purposive (46, p.2). Based on this definition, the case in this study was an organization that provides community services for individuals with TBI. Guided by Stake's approach, a set of issue questions was identified to structure the interviews and document review (46). The initial issue questions that guided our study focused on (1) the process by which individuals with TBI access services provided by the organization, (2) the way the organization considers their housing in the provision of services, and (3) the barriers that hinder the organization's ability to support housing.

4.3.2 Participants

An organization that provides community services for individuals with TBI was selected for this study because it primarily serves individuals with acquired brain injury (ABI) and operates a limited housing program. This made it an appropriate case for understanding how an organization may support clients who do not access the housing program but are at risk of losing their housing.

Potential participants were invited with the assistance of the organization's program manager. We recruited eight individuals who work at this organization at different levels (e.g., frontline

service providers, program leads, managers). Ethics approval was obtained from the University of Ottawa research ethics board (H-03-24-9814) (Appendix D), and written informed consent was obtained from all participants.

4.3.3 Data Collection

Sources of data were from (1) semi-structured interviews and (2) agency documentation:

1. Semi-structured interviews: Interviews were conducted with eight individuals working at different levels of the participating organization. The issue questions guided the structure of the interview guide (Appendix E). Interviews were conducted virtually by the first author (R.B.), and each took 60-90 minutes.
2. Agency documentation: We obtained general information about the organization, including types of services provided, eligibility criteria for accepting the clients, the approximate number of people on the waitlists, etc., from the organization's website, the intake form, public reports of previous programs, and administrative data kept by the organization (Appendix F).

4.3.4 Data Analysis

Stake defines analysis within a case study as "a matter of giving meaning to first impressions as well as to final compilations" (46, p.71). An analysis strategy was developed based on the work of Stake (46) and Miles, Huberman, and Saldana (47). A deductive strategy was adopted to create predefined categories drawing from the issues identified at the onset of the study (etic issues). This was followed by an inductive approach, in which new issues were identified as the interviews were coded (emic issues). Provisional codes were assigned to units within the

verbatim transcripts that revealed information relevant to the organization's context and service delivery (sentences or paragraphs). These codes were later refined through re-sorting and re-naming and then were aggregated into categories (46), ensuring the best alignment between codes and categories while minimizing overlap.

Data from public reports, document reviews, and the researcher's field notes (including information about the setting of the interviews, participants' nonverbal behaviors, and the researcher's critical reflection on the interviews) were directly interpreted and analyzed alongside interview data, examining if they corroborated the information from the interviews. After multiple reflections on how the categories were linked, the broader themes were identified.

To increase our confidence in the trustworthiness of the results, strategies identified by Lincoln and Guba were used (48). These included enhancing the credibility through the engagement of the first author (R.B.) with the participants and the case of interest, which was achieved through in-depth interviews (1x60- 90 minutes) with staff of the organization at different levels. Moreover, R.B. participated in several discussions with the research team and received their feedback on the study design, data collection, and analysis. Triangulation was achieved by incorporating data from different sources, including interviews and public documents related to the case. Member checking sessions were also conducted to receive feedback from the participants on the analysis results. Furthermore, for establishing confirmability, a documented and transparent data collection and analysis method, along with an audit trail, was employed (47). The data were organized and managed using NVivo 14 (49).

4.4 Results

4.4.1 Case Description

The identified nonprofit organization has been providing community services for individuals with TBI for over 40 years. Its mission is to help clients gain independence in daily activities and reintegrate into the community. Services include personal support independence training, which is on an outreach basis, and offers individuals the opportunity to participate in their community. The organization also runs programs that build leisure skills, community awareness, self-esteem, and social relationships. Additionally, it provides support groups focused on developing cognitive skills through cognitive-oriented activities. Finally, it operates two small supportive housing facilities (9 beds in two separate buildings), where clients receive assistance from residential counsellors to maintain their independence.

This organization provides community services to over 1,500 individuals with ABI every year. Before COVID-19, services were mainly in person. The pandemic prompted a shift to virtual offerings, improving accessibility and shortening waitlists in recent years. Since 1985, the provincial ministry of health, Ontario Health, has been its primary funder, supporting service delivery and requiring data reporting.

Over the years, the organization has applied for grant opportunities to run projects targeting the housing conditions of TBI clients outside of their organization. The Homelessness Prevention Project is an example of a one-year seed grant that enabled them to hire a homelessness prevention coordinator, who acted as a case manager. This case manager provided assistance with housing and income applications, as well as support with community service navigation and connections. During this one-year project, 20 individuals with TBI who were homeless or at risk of homelessness participated. The case manager assisted them to apply for social housing,

frequently mediated between landlords and tenants, and supported clients with income tax completion, which was a prerequisite for social housing applications. In addition to housing support, the case manager also addressed food insecurity, employment needs, and broader system navigation challenges. As a result, 30% of participants secured stable housing, while others found temporary arrangements.

Key challenges identified in this program included limited funding, the complex and intersecting needs of clients beyond housing insecurity, implementation during the pandemic, and difficulties with system navigation. These challenges also limited the organization's ability to integrate the project at an organizational level, as the short-term funding and high client complexity required coordination with multiple external systems (e.g., housing and income support), which were fragmented and difficult to access. As a result, the project remained a time-limited, standalone initiative rather than being embedded within the organization's ongoing service structure.

Individuals with TBI typically access this organization through a system navigator in the region who works specifically with people with ABIs; the navigator assesses eligibility and helps clients identify their needs and priorities for community rehabilitation, including housing needs. Based on these needs and program availability, the navigator then refers clients to appropriate organizations in the community, including the organization in this study. Once referred to this organization, the clients are placed on a waitlist, which operates on a first-come, first-served basis. The waitlist duration varies by program, ranging from approximately one year for an independent training program to over ten years for the residential program.

In this study, two individuals from the management team, four frontline workers (community rehabilitation facilitators), one program lead, and one residential counsellor participated in the

interviews. Two main themes were identified through the analysis of interviews and documents: 1) housing needs are not always successfully met by the organization, and 2) the health and social systems provide insufficient support to community TBI organizations to meet the housing needs (Table 4.1).

Table 4.1. Main themes and the sub-themes

Themes	**Sub-themes**
Housing needs are not always successfully met by the organization	• Housing needs inquired during initial contacts and annual reviews • Limited housing program capacity • Tailored housing support by frontliners • Clients' housing loss linked to capacity limits and systemic barriers
The health and social systems provide insufficient support to community TBI organizations to meet the housing needs	• Systemic issues limiting services capacity and access for individuals with TBI • Insufficient funding and resources for TBI community services • System-level bureaucratic challenges affecting the organization's ability to support clients • Scarce research on housing solutions for people with TBI

4.4.2 Housing Needs Are Not Always Successfully Met by the Organization

The organization attempts to consider clients' housing conditions and supports them through its services to prevent the loss of stable housing. However, housing needs remain unmet for many clients.

This organization becomes aware of its clients' housing needs when receiving the service request application from the system navigator. During the intake process, housing needs are also discussed with clients and inscribed on the intake form. The frontline service providers then

complete a standardized community health assessment during their initial meetings with clients and identify clients' needs, including housing. This same assessment is also completed on an annual basis: 'It's [community health assessment] very detailed. (…). One of the questions is about their housing, you know, where do you live, are you living alone (...)' (Frontliner 1).

Participants explained that for the clients who do not identify their housing needs at these stages, frontline providers have to inquire about and monitor their housing situations over time through ongoing interactions. This process can be challenging in some cases, such as when the cognitive disorders of their clients might influence awareness: 'We have individuals whose memory will reset every 5 minutes. That is the biggest safety concern for that [awareness of housing status], they don't really know what's going on in the moment' (Frontliner 2).

A manager also reported on this issue:

> They don't know that they need the help, and sometimes when we talk to the clients, they're like, "Oh no, I don't want [housing support]." And you know, at the time, they needed the help, (…), ten months later, they've become homeless. (Manager 1)

Participants pointed out that, while their organization does have a supportive residential housing program, the waitlist is over 10 years. Therefore, in cases where their clients are experiencing housing instability or are at risk of losing their housing, the community rehabilitation facilitators are limited to offering tailored support with maintaining their housing. Support ranges from simple reminders to pay rent, to assistance with a job search, and help with navigating the system to secure benefits they are entitled to:

> So if they need support with paying rent or filling out applications, or forms, (…). I know we've in the past advocated for clients to landlords to explain their situation, explain their needs (…). So it is different for sure based on what is needed by clients. (Frontliner 3)

The frontline team explained that in more severe cases, where their clients are at risk of eviction and homelessness, the focus of support shifts toward helping them find alternative housing. This includes connecting their clients with housing organizations, assisting with housing applications, and advocating for them to receive a social housing unit with the municipality. However, due to long waitlists, many of their clients who require social housing may not be able to access this type of housing immediately. In such cases, the frontline team helps them apply for long-term care facilities, domiciliary hostels, or find suitable roommates: 'We just happened to find a roommate for [a client], which actually worked out. Another one, we went to the MP [Member of Parliament] of her neighborhood. It's like for some people it works, for some it doesn't' (Frontliner 4).

Participants pointed out that their organization is limited in the support they can provide with housing: 'We don't provide any further special support for [housing], and this is why we had this project [Homelessness Prevention Project] in regards to homelessness' (Manager 1). The organization sought grants to temporarily extend their services in the community, such as this successful homelessness prevention project: 'I'm still looking for funds because this was a success (…), you know, like 30% of the clients [were housed]. (…). The only reason we could actually do this [project] is that we got the special funding' (Manager 2).

The organization has a supportive housing program with nine beds as part of a government-affiliated community housing initiative, and participants highlighted that due to their limited resources, there is a long waitlist, exceeding ten years, for housing placement: 'I will say up front, it's not enough, but that's part of my job to advocate for more, and the wait time in order to get into one of our residences is more than ten years' (Manager 2).

The residential counsellor also highlighted that individuals who access one of their bedrooms typically remain there for a lifetime because of their very high needs for assistance in daily activities, unless they meet the eviction criteria, such as behavioral issues or substance abuse:

> We don't have a time frame on it because you never know when someone's gonna be discharged. (…). And then also, you never know when you specifically would be eligible, based on you know the people that are living here and the ability we have to support.

Therefore, clients at risk of losing stable housing, with low socioeconomic status (SES), and with poor support from friends and family, may end up in a homelessness shelter: 'I wish it was something that we could do. But you know, money is power, right? So, ultimately [they go to the] shelter' (Frontliner 1).

Another participant highlighted that even with regular monitoring and support, clients may suddenly lose their housing. In such situations, they will make sure to remain in contact with them:

> We continue to see them and to help them. (…), but [housing loss] comes on so suddenly sometimes. So, I know we've all struggled trying to help with this kind of stuff because it just happens, and there's no [available social or affordable] housing out there, but we will still connect (Frontliner 4).

4.4.3 The Health and Social Systems Provide Insufficient Support to Community TBI Organizations to Meet the Housing Needs

This theme outlines the systemic issues identified by participants that affect their organization's ability to deliver effective housing support. Participants believed that the current

policies and the structure of the system that governs the health and social care services have created challenges for individuals with TBI to access their organization's services, and these factors have also negatively influenced their organization's ability to provide proper housing support for their clients.

One important barrier is access to specific TBI services, with several individuals and their families not receiving the community services they require. Participants indicated that an important cause of this challenge is health and social service providers' lack of awareness about general TBI community services, including their organization. The regional system navigator is the main pathway for individuals with TBI to receive TBI-specific services from the community, and these individuals and their families typically become aware of the navigator's role at discharge from inpatient care or through their family physician. If the family physician or the inpatient care team does not link them with the navigator, participants highlighted that many individuals with TBI and their families will simply fall through the cracks. 'Unfortunately, there are many folks [with TBI] out there who need our services, but have no idea we exist' (Frontliner 4).

A second barrier is that this organization faces a significant lack of resources, including staffing shortages, which is largely attributed to the insufficient funding they receive from the government. These resource shortages directly and indirectly affect client services. Often, staff who see clients as frontline service providers must take on other responsibilities. For example, the program leader explained: 'My title is the team lead for the [leisure and social skills program], but I'm dealing with HR things and payroll things as well'. Furthermore, the residential counsellor added that this lack of resources contributes to increased staff caseloads and longer waitlists for housing-related services:

> I think [the long waitlist] also prevents our center from providing more services in the community, and it comes down to funding. You know, if we got more funding, then that funding will allow us to hire more staff, and (…), we'll get to see more clients.

The program lead also added: 'You know, we could have a [social skills and leisure program] on Friday as well, or in the evenings, but then, budget and staffing again. That's the barrier.' One manager described that this lack of funding has limited their organization's flexibility for internal changes or program adjustments:

> You can't get money to do [internal program improvements]. (…). They're not giving us the money to do that. And I know that's how it might sound like, you know, an excuse, but money is [needed] to start looking at different [community service providers'] systems, (…), it takes a lot to implement. (Manager 1)

Participants felt they could better support clients if they received increased funding, but the non-profit nature of their organization has limited their capacity to do so: 'Our agency, you know, has the potential to do really great things, but because we're nonprofit [with limited funding], our hands are tied' (Frontliner 2). Moreover, the residential counsellor added: 'The funding [as the barrier] and being such a small agency, I think we only have, you know, one or two people who can do all the paperwork and all the work for funding [and grant applications].'

Of note, participants highlighted that while the cost of their client services is covered by the provincial government and is provided free of charge, an individual's ability to pay for these services has an impact on access. Clients who pay for their services through private insurance, such as motor vehicle insurance, are given priority and do not have to wait for services, as their payments enable the organization to hire additional staff to provide services for them:

> If they have insurance dollars dedicated to rehab, then we charge them, and we legally have to do that (…). Individuals who are private-pay, they don't want to wait on the waitlist, (…), because we can hire the staff (…). (Manager 1)

This creates an uncomfortable two-tier system within their organization. A manager also highlighted concerns about the allocation of government funding, noting that as a small organization, their voice is often unheard: 'Where's all this [provincial tax] money going to? Cause I personally don't see any improvements [in the system] (…). For us, we haven't had an increase in our base funding for like 10-15 years.' (Manager 2)

Both the frontline staff and the management team noted that, although their organization has actively pursued grant opportunities to expand housing support programs, funding for TBI and housing initiatives remains inconsistent. For example, despite its success, their homelessness project had to be discontinued due to its reliance on temporary grant funding: 'Whenever you apply for funding, you know what I don't like is that it's on a yearly basis. So you get the funding for a year, and after that it disappears' (Manager 2).

Third, in addition to a lack of funding, frontline service providers highlighted system-level bureaucratic challenges affecting their ability to support clients. They reported that navigating the system and accessing services via lengthy and complex application processes for housing supports outside of their organization were particularly difficult for them and their clients: 'For this subsidized housing, (…), everything that's available for the Community at a subsidized cost has a lot of hoops to jump through, and clients find that challenging. I find it challenging' (Frontliner 3).

Similarly, the management team also expressed frustration with excessive formalities and bureaucratic obstacles that hinder the implementation of community service plans targeting the

housing of individuals with TBI, leading to wasted time and resources: ‘Get rid of the, you know, why do we need all these whatever [formalities and barriers?], Just get rid of the restrictions. There's so much red tape that anybody has to go through’ (Manager 1). They believe their organization could play a more direct role in designing and implementing housing programs for individuals with TBI, as they have firsthand knowledge of both service requirements and client needs: ‘This is the amount of dollars, and you give the dollars not to this bureaucracy, you give the money directly to me as an organization, I will get it done’ (Manager 2).

In addition to concerns about the housing crisis and rising market prices in the community, a key limitation identified by frontline staff was the lack of accurate awareness within the system regarding the needs of the TBI population: ‘[Increase] brain injury awareness. Having the government aware of the systemic issue and the need for plus plus resources and funding to better provide services to clients with TBI’ (Frontliner 2).

One of the Managers also added that this challenge contributes to a lack of clear plans and direction for housing solutions for this population: ‘we know that there's all this money for housing, but there's no clear directions, no clear policy and whether I'm talking at the federal level or the provincial level, we don't know what's going to be down the pipe’ (Manager 2)

They noted that these issues of poor awareness and TBI system planning may stem from the limited research conducted in this area and emphasized the need for government-supported research initiatives to identify gaps and develop evidence-based solutions: ‘We need people in universities or researchers to be more interested in the aspects of brain injury to make individuals aware of the problems of brain injury across Canada’ (Manager 2).

4.5 Discussion

Individuals with TBI have a number of significant needs beyond the acute and subacute periods of their injury. Community service providers often address these needs by supporting their life skills and community reintegration (50,51). However, housing issues in this population are often overlooked, either because individuals with TBI have limited awareness of their housing situation or because service professionals fail to recognize these concerns (35,52). Without support during their recovery, they are at very high risk of housing instability (53). This study was therefore conducted to gain a deeper understanding of how one community organization serving individuals with TBI addresses housing needs to prevent homelessness and support housing stability.

In this case study, participants were the employees of this organization, which provided day services to improve independent living in the community, as well as a residential housing program. Although most of the organization's community clients are not actively homeless, many are living in precarious housing situations. Staff, therefore, recognized the importance of the clients' housing status and offered support within their capacity. This organization demonstrated concern for housing beyond the housing support needs of their regular clients with TBI. They have actively sought external financial support for a special one-year project; the moneys were used to fund a dedicated case manager who focused on assisting clients recruited from the community who were actively homeless or at risk of homelessness to secure and maintain housing. These efforts illustrate how identifying individuals with urgent housing needs, prioritizing housing within service delivery, and providing continuous, adaptable, and individualized supports may enhance an organization's capacity to respond to homelessness and housing instability among individuals with TBI. Prior studies have similarly shown that

assigning a dedicated case manager improves access to services, helps navigate systemic barriers, and contributes to better community integration, independence, and functional abilities among individuals with TBI (54,55); however, these benefits are constrained by structural factors, and case management alone cannot fully address persistent gaps in housing support.

In this organization, frontline staff follow an established process where housing status is inquired about on initial contact with new clients and then again annually. Despite staff inquiries into housing and efforts consistent with the organization's current service structure, some clients could still experience homelessness. With its long waitlist, the organization's residential services are not a possibility for their community client; these clients, therefore, must rely on how services are structured and prioritized. For instance, while housing was reported as a priority concern, it appeared to be treated as a secondary concern compared with other program areas, such as living skills programs, and discussions about housing seemed to be occurring reactively with clients rather than proactively. Incorporating housing as a standing topic in each client interaction, using open-ended, supportive questions, could help identify risks earlier and promote more responsive intervention (56). This organization's experience underscores the importance for community service providers to treat housing as an ongoing concern rather than a one-time issue, in particular for this population group with complex needs. Supporting stable housing and preventing homelessness for individuals with TBI extends beyond access to a housing unit; it requires long-term stability, safety, adequacy, and affordability (57).

In this study, participants emphasized the role of broader health and social systems in their ability to support clients with maintaining tenancy and preventing homelessness, noting that gaps in these systems negatively affect their organizations' service provision. Indeed, preventing

homelessness and supporting housing stability depend on systems beyond the homelessness sector that shape the health and social supports (57).

Issues within these broader systems have impacted individuals' access to this organization. Literature has also confirmed that systemic factors such as delays or lack of referrals, lack of insurance coverage, and limited awareness among healthcare providers regarding available community rehabilitation resources contribute to unequal access of individuals with TBI to these services (20,58–60). Aligned with the access process to this organization, previous research has also highlighted the importance of having a designated community navigator to assist individuals with brain injury in accessing community services (36,61). However, service providers across the continuum of care need greater awareness of the navigator role. In this case study, one navigator covered a large area, underscoring the need for more regional system navigators to support individuals with TBI.

Beyond their effects on clients' access to the services, these system complexities also constrain staff members' ability to deliver effective services. Staff of this organization expressed dissatisfaction with the complexity of the system and with housing-related applications designed to support their clients. Similarly, Tsow et al. reported that accessing resources for individuals with brain injuries often requires extensive expert support due to systemic barriers. Community associations delivering programs for people with TBI have also described government-mandated procedures as a source of "compounded frustration" and an "insult to injury" (36). System-level research is therefore essential to identify gaps in policies and mandated procedures and guide necessary reforms, a need highlighted in prior literature on broader structural barriers (64,65). Program evaluations could also provide valuable insights; however, many existing studies are outdated, poorly described, or limited in scope (66,67). Rigorous evaluations can illuminate both

strengths and shortcomings in service delivery (68), particularly within TBI housing supports (66).

Another systemic issue, consistently highlighted by participants, was the lack of funding for ABI community service providers, particularly their own organization, which limited their ability to deliver comprehensive housing supports. This funding shortfall has created several internal barriers, including constraints on staff hiring, high caseloads, limited residential programs, and long waitlists, among others. This finding aligns with previous research conducted in Ontario (62), British Columbia (55), the U.S. (63), and the UK (35), stating that additional funding is required for enhancing community programs for individuals with TBI and reducing lengthy waiting lists. While this organization sought to mitigate the issue by applying for external grants, sustainable solutions will require coordinated efforts among program representatives, policymakers, the insurance industry, and government funding agencies.

An additional challenge lies in the underestimation of the complex needs of individuals with TBI within health and social service systems, particularly in relation to housing (43,55,69). Participants in our study extended this inaccurate awareness to the regulatory structures that govern healthcare and social services. They highlighted how these systemic dynamics affect funding priorities and resource allocation for TBI-related community programs, including housing. Such gaps contribute to bureaucratic processes and systemic barriers that complicate the implementation of services. Enhancing knowledge translation between researchers, service providers, and government stakeholders could help address these shortcomings by better informing policy revisions and funding strategies (70). Involving community service providers in policy development is also essential, as their frontline perspectives can ensure services are better tailored to the needs of the TBI population.

Limitations

This study has limitations that are worth mentioning. First, the findings are based on a single organization providing community services to individuals with TBI, with its specific approach to housing supports and its unique barriers. Therefore, conducting this study in a different organization might yield different, nuanced results. Second, we only had access to publicly available documents outlining the basic information about the organization, as reflected in the findings.

4.6 Conclusion

Housing challenges are a significant concern for individuals with TBI who rely on community services. Community service providers should make housing a consistent focus of care by regularly inquiring about clients' housing situations, offering comprehensive support within their capacity, and linking clients to appropriate community resources. However, systemic barriers, such as limited funding and fragmented structures, undermine efforts to support stable tenancy. To mitigate these challenges, organizations are encouraged to actively pursue grant opportunities to expand available services, while policy- and society-level research is needed to inform reforms and support the establishment of a more integrated system of TBI care. Finally, effective knowledge translation between researchers, government officials, and community organizations will be essential for bridging evidence and practice.

Acknowledgement

The authors would like to thank all participants for their participation in this study.

Disclosure statement

The authors report that there are no competing interests to declare.

Funding

None.

4.7 References

1. Maas AIR, Menon DK, Adelson PD, Andelic N, Bell MJ, Belli A, et al. Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research. Lancet Neurol. 2017;16(12):987–1048.
2. Holloway M. How is ABI assessed and responded to in non-specialist settings? Is specialist education required for all social care professionals? Social Care and Neurodisability. 2014;5(4):201–13.
3. Cusimano MD, Korman MB, Carpino M, Feher A, Puvirajasingam J, Zhang S, et al. The temporal relations of traumatic brain injury, victimization, aggression, and homelessness: a developmental trajectory. Neurotrauma Rep. 2021;
4. Røe C, Tverdal C, Howe EI, Tenovuo O, Azouvi P, Andelic N. Randomized controlled trials of rehabilitation services in the post-acute phase of moderate and severe traumatic brain injury–a systematic review. Front Neurol. 2019;10:557.
5. Dasic D, Morgan L, Panezai A, Syrmos N, Ligarotti GKI, Zaed I, et al. A scoping review on the challenges, improvement programs, and relevant output metrics for neurotrauma services in major trauma centers. Surg Neurol Int. 2022;13:171.
6. Giugni A, Gamberini L, Carrara G, Antiga L, Brissy O, Buldini V, et al. Hospitals with and without neurosurgery: a comparative study evaluating the outcome of patients with traumatic brain injury. Scand J Trauma Resusc Emerg Med. 2021;29:1–15.
7. Public Health Agency of Canada. Injury in review, 2020 edition: spotlight on traumatic brain injuries across the life course. Government Of Canada [Internet]. 2020 [cited 2025 Feb 8]; Available from: https://www.canada.ca/en/public-health/services/injury-prevention/canadian-hospitals-injury-reporting-prevention-program/injury-reports/2020-spotlight-traumatic-brain-injuries-life-course.html
8. Whiteneck GG, Cuthbert JP, Corrigan JD, Bogner JA. Risk of negative outcomes after traumatic brain injury: a statewide population-based survey. J Head Trauma Rehabil. 2016;31(1):E43–54.
9. Whiteneck GG, Cuthbert JP, Corrigan JD, Bogner JA. Prevalence of self-reported lifetime history of traumatic brain injury and associated disability: a statewide population-based survey. J Head Trauma Rehabil. 2016;31(1):E55–62.
10. MacDonald E, Nath T, Martin AM. Trends in Canadian inpatient rehabilitation outcomes following traumatic brain injury. Canadian Institute for Health Information. 2017;
11. Griesbach GS, Kreber LA, Harrington D, Ashley MJ. Post-acute traumatic brain injury rehabilitation: effects on outcome measures and life care costs. J Neurotrauma. 2015;32(10):704–11.
12. Totman AA, Lamm AG, Goldstein R, Giacino JT, Bodien YG, Ryan CM, et al. Longitudinal trends in severe traumatic brain injury inpatient rehabilitation. J Head Trauma Rehabil. 2023;38(3):E186–94.
13. Hawkins ML, Lewis FD, Medeiros RS. Impact of length of stay on functional outcomes of TBI patients. Am Surg. 2005;71(11):920–30.
14. van Vliet M, Huisman M, Deeg DJH. Decreasing hospital length of stay: effects on daily functioning in older adults. J Am Geriatr Soc. 2017;65(6):1214–21.
15. Abrahamson V, Jensen J, Springett K, Sakel M. Experiences of patients with traumatic brain injury and their carers during transition from in-patient rehabilitation to the community: a qualitative study. Disabil Rehabil. 2017;39(17):1683–94.

16. Harrison AL, Hunter EG, Thomas H, Bordy P, Stokes E, Kitzman P. Living with traumatic brain injury in a rural setting: supports and barriers across the continuum of care. Disabil Rehabil. 2017;39(20):2071–80.
17. Piccenna L, Lannin NA, Gruen R, Pattuwage L, Bragge P. The experience of discharge for patients with an acquired brain injury from the inpatient to the community setting: A qualitative review. Brain Inj. 2016;30(3):241–51.
18. Kersey J, McCue M, Skidmore E. Domains and dimensions of community participation following traumatic brain injury. Brain Inj. 2020;34(6):708–12.
19. Gerber GJ, Gargaro J, McMackin S. Community integration and health-related quality-of-life following acquired brain injury for persons living at home. Brain Inj. 2016;30(13–14):1552–60.
20. Andelic N, Arango-Lasprilla JC, Perrin PB, Sigurdardottir S, Lu J, Landa LO, et al. Modeling of community integration trajectories in the first five years after traumatic brain injury. J Neurotrauma. 2016;33(1):95–100.
21. Gagnon A, Lin J, Stergiou-Kita M. Family members facilitating community re-integration and return to productivity following traumatic brain injury–motivations, roles and challenges. Disabil Rehabil. 2016;38(5):433–41.
22. Sander AM, Clark A, Pappadis MR. What is community integration anyway?: defining meaning following traumatic brain injury. J Head Trauma Rehabil. 2010;25(2):121–7.
23. Shaikh NM, Kersten P, Siegert RJ, Theadom A. Developing a comprehensive framework of community integration for people with acquired brain injury: a conceptual analysis. Disabil Rehabil. 2019;41(14):1615–31.
24. Ibarra S, Parrott D, Waldman W, Hammond FM, Dillahunt-Aspillaga C, Trexler L. Provision of resource facilitation services for individuals with acquired brain injury across the United States: results of a 2018 resource facilitator provider survey. Brain Inj. 2020;34(6):732–40.
25. Malec JF, Hammond FM, Flanagan S, Kean J, Sander A, Sherer M, et al. Recommendations from the 2013 Galveston Brain Injury Conference for implementation of a chronic care model in brain injury. J Head Trauma Rehabil. 2013;28(6):476–83.
26. Mahar C, Fraser K. Barriers to successful community reintegration following acquired brain injury (ABI). International Journal of Disability Management. 2011;6(1):49–67.
27. Brookfield K, Mead G. Physical environments and community reintegration post stroke: Qualitative insights from stroke clubs. Disabil Soc. 2016;31(8):1013–29.
28. Douglas JM. The things that help, the things that get in the way: working together to improve outcome following acquired brain injury. Brain Impairment. 2018;19(3):258–69.
29. Douglas J. Loss of friendship following traumatic brain injury: A model grounded in the experience of adults with severe injury. Neuropsychol Rehabil. 2020;
30. Nalder E, King G, Hunt AW, Hartman LR, Szigeti Z, Drake E, et al. Indicators of life success from the perspective of individuals with traumatic brain injury: a scoping review. Disabil Rehabil. 2023;45(2):330–43.
31. Lau SKC, Luong D, Sweet SN, Bayley M, Levy BB, Kastner M, et al. Using an integrated knowledge translation approach to inform a pilot feasibility randomized controlled trial on peer support for individuals with traumatic brain injury: A qualitative descriptive study. PLoS One. 2021;16(8):e0256650.
32. Bragge P, Wright B, Grundy E, Goodwin D, Gozt A, Clynes L, et al. What happens next? Traumatic brain injury in the community. J Head Trauma Rehabil. 2023;38(3):279–82.
33. Fraas M, Balz M, DeGrauw W. Meeting the long-term needs of adults with acquired brain injury through community-based programming. Brain Inj. 2007;21(12):1267–81.

34. Struchen MA, Davis LC, Bogaards JA, Hudler-Hull T, Clark AN, Mazzei DM, et al. Making connections after brain injury: development and evaluation of a social peer-mentoring program for persons with traumatic brain injury. J Head Trauma Rehabil. 2011;26(1):4–19.
35. Odumuyiwa T, Kennedy M, Norman A, Holloway M, Suffield F, Forrest H, et al. Improving access to social care services following acquired brain injury: a needs analysis. Journal of Long-Term Care. 2019;2019:164–75.
36. Tsow R, Pollock C, Mehta S, Turcott A, Kang R, Schmidt J. A Look at Traumatic Brain Injury Community Programs in British Columbia: Barriers and facilitators of implementation. Brain Inj. 2024;38(7):539–49.
37. Munce SEP, Laan R Vander, Levy C, Parsons D, Jaglal SB. Systems analysis of community and health services for acquired brain injury in Ontario, Canada. Brain Inj. 2014;28(8):1042–51.
38. Oddy M, Moir JF, Fortescue D, Chadwick S. The prevalence of traumatic brain injury in the homeless community in a UK city. Brain Inj. 2012;26(9):1058–64.
39. Stubbs JL, Thornton AE, Sevick JM, Silverberg ND, Barr AM, Honer WG, et al. Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. Lancet Public Health. 2020;5(1):e19–32.
40. Norman A. A preventable death? A family's perspective on an adult safeguarding review regarding an adult with traumatic brain injury. The Journal of Adult Protection. 2016;18(6):341–52.
41. Moore S, Wotus R, Norman A, Holloway M, Dean J. Behind the cloak of competence: brain injury and mental capacity legislation. The Journal of Adult Protection. 2019;21(4):201–18.
42. Braaf S, Ameratunga S, Christie N, Teague W, Ponsford J, Cameron PA, et al. Care coordination experiences of people with traumatic brain injury and their family members in the 4-years after injury: a qualitative analysis. Brain Inj. 2019;33(5):574–83.
43. Norman A, Curro V, Holloway M, Percuklievska N, Ferrario H. Experiences of individuals with acquired brain injury and their families interacting with community services: a systematic scoping review. Disabil Rehabil. 2023;45(4):739–51.
44. Merriam S. Qualitative applications and case study research in education. San Francisco, CA: Iossey-Bass. 1998;
45. Baxter P, Jack S. Qualitative case study methodology: Study design and implementation for novice researchers. The qualitative report. 2008;13(4):544–59.
46. Stake RE. The art of case study research. sage; 1995.
47. Miles M, Huberman A, Saldaña J. Qualitative data analysis: A method sourcebook. Sage. 2013;
48. Lincoln Y, Guba B. Naturalistic inquiry. Beverly Hills: Sage Pulications. Inc; 1985.
49. Lumivero. Nvivo (Version 14). Computer software [Internet]. 2025 [cited 2025 Jul 14]; Available from: https://lumivero.com/products/nvivo/
50. Alves-Stein S, George S, Lannin NA, Jolliffe L. Implementation of a leisure reintegration programme for people with acquired brain injury in a community rehabilitation programme: a feasibility study. Brain Impairment. 2023;24(3):508–20.
51. Chen A, Bushmeneva K, Zagorski B, Colantonio A, Parsons D, Wodchis WP. Direct cost associated with acquired brain injury in Ontario. BMC Neurol. 2012;12:1–12.
52. Draper EC, Burgess HJ, Chisholm C, Barker C, Mazerolle EL. Sharing the neuroscience of living with housing instability: Collaborating with front-line workers to co-create a knowledge translation activity. J Community Appl Soc Psychol. 2024;34(2):e2781.

53. Rigney G, Leith J, Lennon M, Reeves A, Chrisinger B. The association of traumatic brain injury with neurologic and psychiatric illnesses among individuals experiencing homelessness: a systematic review and meta-analysis. J Health Care Poor Underserved. 2022;33(2):685–701.
54. Rosario ER, Espinoza L, Kaplan S, Khonsari S, Thurndyke E, Bustos M, et al. Patient navigation for traumatic brain injury promotes community re-integration and reduces re-hospitalizations. Brain Inj. 2017;31(10):1340–7.
55. Grewal J, Kennedy CJ, Mamman R, Biagioni JB, Garcia-Barrera MA, Schmidt J. Understanding the barriers and facilitators of healthcare services for brain injury and concurrent mental health and substance use issues: a qualitative study. BMC Health Serv Res. 2024;24(1):881.
56. Asthana S, Gago L, Garcia J, Beestrum M, Pollack T, Post L, et al. Housing instability screening and referral programs: A scoping review. The Joint Commission Journal on Quality and Patient Safety. 2025;51(1):1–10.
57. Gaetz S, Dej E. A new direction: A framework for homelessness prevention. Canadian Observatory on Homelessness Press; 2017.
58. Knollman-Porter K, Brown JA, Wallace T, Spitz S. First-line health care providers' reported knowledge of and referrals to speech-language pathologists for clients with mild traumatic brain injury. Am J Speech Lang Pathol. 2021;30(5):2214–27.
59. Shiner CT, Vratsistas-Curto A, Bramah V, McDonell K, Mahoney AEJ, Sweeney S, et al. Assessing unmet rehabilitation needs and the feasibility of a telehealth rehabilitation consultation service for road trauma survivors recently discharged from hospital. Disabil Rehabil. 2022;44(15):3795–804.
60. Vargo MM, Vargo KG, Gunzler D, Fox KW. Interdisciplinary rehabilitation referrals in a concussion clinic cohort: an exploratory analysis. PM&R. 2016;8(3):241–8.
61. Ibarra S, Parrott D, Waldman W, Hammond FM, Dillahunt-Aspillaga C, Trexler L. Provision of resource facilitation services for individuals with acquired brain injury across the United States: results of a 2018 resource facilitator provider survey. Brain Inj. 2020;34(6):732–40.
62. Gan C, Gargaro J, Brandys C, Gerber G, Boschen K. Family caregivers' support needs after brain injury: a synthesis of perspectives from caregivers, programs, and researchers. NeuroRehabilitation. 2010;27(1):5–18.
63. Meixner C, O'Donoghue CR, Witt M. Accessing crisis intervention services after brain injury: A mixed methods study. Rehabil Psychol. 2013;58(4):377.
64. Jones S, Albanese F, Revelli M. Achieving a new systems perspective to ending homelessness through housing first. Housing First Europe Hub; 2022.
65. Nikolaisen M, Arntzen C, Eliassen M, Gramstad A. Rehabilitation models for community integration of adults with acquired brain injury in rural areas: a scoping review. Rural Remote Health. 2024;24(1):1–16.
66. Cox AD, Pontone M, Gunnarsson KF. Program evaluation of in-patient treatment units for adults with acquired brain injury and challenging behavior. Brain Inj. 2022;36(3):321–31.
67. Geurtsen GJ, van Heugten CM, Martina JD, Rietveld AC, Meijer R, Geurts AC. A prospective study to evaluate a residential community reintegration program for patients with chronic acquired brain injury. Arch Phys Med Rehabil. 2011;92(5):696–704.
68. Newcomer KE, Hatry HP, Wholey JS. Handbook of practical program evaluation. Vol. 864. Wiley Online Library; 2015.
69. Estrella MJ, Kirsh B, Kontos P, Grigorovich A, Colantonio A, Chan V, et al. Critical characteristics of housing and housing supports for individuals with concurrent traumatic brain

injury and mental health and/or substance use challenges: a qualitative study. Int J Environ Res Public Health. 2021;18(22):12211.
70. Grimshaw JM, Eccles MP, Lavis JN, Hill SJ, Squires JE. Knowledge translation of research findings. Implementation science. 2012;7(1):50.

CHAPTER 5: INTEGRATED DISCUSSION

In this chapter, I first provide a brief summary of the key findings from the three studies included in this dissertation. Study 1, a scoping review, explored the influences of TBI on the experiences of individuals who are homeless or unstably housed. Study 2, a narrative inquiry, explored the experiences of individuals who encountered residential instability following TBI, focusing on their interactions with health and social care systems and how these interactions shape housing outcomes. Study 3, a qualitative case study of a community service provider, provided insight into how they address housing issues and support clients with TBI in maintaining stable housing.

I then explain the theoretical framework used to guide the integration of the studies' findings and present an integrated discussion that situates the findings from all three studies together, highlighting implications for clinical practice and policy. This is followed by implications for future research. Finally, I describe the strengths and limitations of my research.

5.1 Summary of Findings

5.1.1 Exploring the Influences of Traumatic Brain Injury (TBI) on the Experiences of Individuals Who Are Homeless or Unstably Housed: A Scoping Review

The first article of my thesis was a scoping review that investigated the challenges and needs experienced by the homeless population that may be related to TBI. Moreover, this review identified recommendations for addressing these challenges.

This review found that homeless individuals with TBI experience poorer overall health compared to their counterparts without TBI, including physical health issues, mental health challenges, and cognitive sequelae, which is linked to higher healthcare service utilization. It also highlighted the impaired functioning of this population in their daily activities. Additionally, individuals experiencing homelessness or living in marginal housing who have also sustained a TBI tend to face several social challenges. These include poorer housing stability, increased contact with the criminal justice system, poorer community integration and functioning compared to homeless individuals without TBI, and negative attitudes and limited understanding of TBI among housing service providers.

Findings from this review lead to the following recommendations: improving access to neurological rehabilitation services for individuals experiencing homelessness, particularly after they have been housed; urging healthcare providers to consider risk factors for homelessness among TBI survivors and to explore how TBI interventions can address social functioning; increasing awareness of TBI and its impacts; providing clinicians with training on managing clients with aggressive behaviours; and developing policies, strategies, and interventions that address the combined effects of TBI and homelessness.

The majority of studies in this review were provider-knowledge focused; there was a lack of qualitative studies investigating the personal experiences of this population and their housing experiences following their trauma. This highlighted the need for my second study, a narrative inquiry to address this gap in the literature.

5.1.2 Experiencing Residential Instability Following Traumatic Brain Injury (TBI): Stories of the Interactions with the Health and Social Care Systems

For my second study, a qualitative narrative inquiry, I conducted in-depth interviews with 6 individuals with TBI who experienced residential instability following their trauma; their stories helped to understand how the interactions with health and social care systems influence their housing outcomes.

Findings showed that the experience of TBI led to prolonged periods of unemployment due to the absence of adequate vocational support (five of the six participants were still unemployed between 5 and 20 years after the injury). This was a critical factor in making individuals vulnerable to residential instability, as it led to personal income loss and financial challenges.

Personal relationships before and after the TBI, as well as SES (e.g., education, system knowledge, income, etc.) prior to injury, played a significant role in housing outcomes. Relationship breakdowns negatively affected housing stability, while support from family and friends helped prevent homelessness or the loss of stable housing. Moreover, lower SES and the absence of adequate income support were associated with poorer post-injury housing outcomes.

During their interactions with health and social service systems, individuals reported numerous challenges and highlighted systemic gaps that directly or indirectly affected their housing situations. These included service providers underestimating the impacts of TBI on their

lives, which hindered their ability to return to work and led to inaccurate assessments affecting eligibility for services and programs; perceptions that some providers were poorly trained in communication and support, resulting in feelings of stigma within the health and social care system; long waitlists for both health and housing services, which undermined well-being and housing stability; the need to self-advocate and undergo multiple assessments by insurance companies; and complex application processes for social service programs that were difficult to navigate and often required expert guidance. Importantly, all participants had stable housing prior to their TBI, yet they still experienced significant barriers in accessing appropriate services and maintaining housing stability. This underscores the likelihood that such barriers are even more severe among individuals who sustain a TBI while experiencing housing instability or homelessness.

5.1.3 Preventing Homelessness Among Individuals with Traumatic Brain Injury: A Qualitative Case Study of a Community Service Provider

As many individuals with TBI, including participants from my second study, might have long-term interactions with community service providers, I conducted my third study, a qualitative single case study, to better understand how one such organization addresses housing issues and supports clients in maintaining stable housing.

This study revealed that while service providers in this organization inquire about the housing of their clients and provide support consistent with their structure of services, housing needs are not always successfully met. Limitations in the capacity to provide residential services, infrequent documentation of clients' housing status as an ongoing concern, treating housing as a

secondary concern compared with other program areas, such as living skills programs, and systemic barriers contribute to this process.

Because of the organization's limited supportive housing program and its long waitlist, in cases where clients are experiencing housing instability or are at risk of losing their housing, frontline service providers are limited to offering tailored support to help maintain their housing. Support ranges from simple reminders to pay rent to assistance with a job search and help with navigating the system to secure benefits. In urgent cases when clients are at risk of homelessness, assistance is provided in securing alternative housing, such as applying for long-term care facilities or identifying suitable roommates.

Additionally, this study highlighted barriers at different contextual levels that affect the organization's ability to deliver effective housing support. Barriers related to the organization's immediate operations included resource shortages, including chronic underfunding, and health and social service providers' limited awareness of general TBI community services, which affected individuals' access to the organization. Barriers extending beyond the organization included long waitlists for housing services outside the organization and lengthy and complex application processes that constrained service delivery. Excessive administrative procedures and rigid service mandates were also highlighted as factors hindering the implementation of community service plans targeting the housing of individuals with TBI.

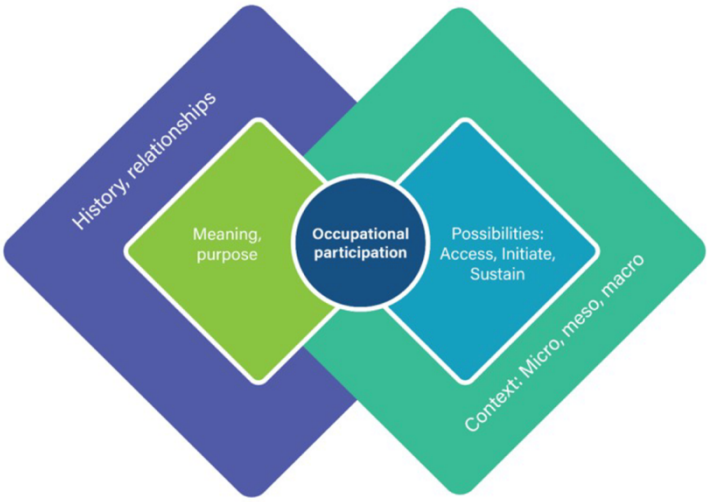
Participants also perceived that broader policy structures governing health and social services are not designed with the TBI population in mind. They believed that at this broader systemic level, there is a lack of recognition of the unique and long-term support needs of individuals with TBI, which contributes to a lack of clear plans and direction for housing solutions for this population.

5.2. Theoretical Framework

To integrate the findings of the studies in this dissertation, the Canadian Model of Occupational Participation (CanMOP) was used as a guiding framework. This model was recently developed under the leadership of Mary Egan and Gayle Restall, and its primary purpose is to assist occupational therapists, individuals, and collectives to collaboratively reflect on occupational participation (Egan & Restall, 2022). Occupational participation is defined as "having access to, initiating, and sustaining valued occupations within meaningful relationships and contexts" (Canadian Association of Occupational Therapists & Townsend, 1997, p. 181)

As illustrated in Figure 5.1, the two important considerations of this model are (1) the purpose and meaning of occupational participation and (2) the occupational possibilities to access, initiate, and sustain participation within the micro, meso, and macro contexts. The micro level includes individuals and concepts in direct contact with the person that influence occupational participation; the meso level encompasses system structures such as health and social service organizations; and the macro level refers to the larger socioeconomic and political context shaped by national, provincial, and local governance (Egan & Restall, 2022).

Figure 5.1 The Canadian Model of Occupational Participation (CanMOP)



Egan M, Restall, G. The Canadian Model of Occupational Participation (CanMOP). In: Egan M, Restall, G, editors. Promoting Occupational participation: Collaborative relationship-focused occupational therapy. Ottawa, CA: Canadian Association of Occupational Therapists. 2022. P. 77

According to this model, the purpose and meaning of the individuals' or collectives' occupational participation is derived from their needs, relationships, and history. The individuals and collectives strive to fulfil their four basic needs, including survival and safety, autonomy, relatedness, and competence, through occupational participation. Moreover, the past, present and hoped-for future relationships of the individual or collective and how they relate to their histories influence the purpose and meaning of their occupational participation (Egan & Restall, 2022).

Occupational possibilities are defined as "ways and types of doing that come to be viewed as ideal and possible with a specific socio-historical context, and that come to be promoted and made available within that context" (Rudman, 2010, p. 55). The micro, meso, and macro contexts affect occupational possibilities by limiting or facilitating access to, initiating, and sustaining valued occupations in meaningful contexts (Egan & Restall, 2022).

In the following section, I will reflect on the findings of my project using the components of this model.

5.3 Integration of Findings Using a CanMOP Lens

This project aimed to better understand how interactions with health and social care systems following a TBI influence residential instability. Experience of TBI increases the risk of losing stable housing and makes individuals vulnerable to homelessness (Stubbs et al., 2022). As many individuals with TBI have prolonged interactions with health and social care systems following their injury, understanding how these interactions shape their housing experiences is essential.

Safe, appropriate, affordable, and sustainable housing is considered a right (Gaetz & Dej, 2017). From a CanMOP perspective, finding and maintaining stable housing can be a valued occupation for which people or collectives attribute different meanings and purposes. The purpose and meaning of an occupation are shaped by individuals' needs, relationships, and histories (Egan & Restall, 2022). The participants of this study expressed that the primary purpose of pursuing stable housing was to meet their essential needs for safety, autonomy, and survival. Having stable housing plays a critical role in preventing further injuries (e.g., subsequent TBIs) and additional challenges in maintaining stable housing (Hwang et al., 2008; Stubbs et al., 2020).

Purpose and meaning are influenced not only by needs but also by relationships and histories. (Egan & Restall, 2022). Reflection on individuals' histories and relationships can help us better understand what satisfying occupational participation, in this case, obtaining or maintaining stable housing, looks like for them. Participants' stories highlighted that each individual, depending on their histories and relationships, had diverse meanings of what made housing satisfying for them. For one participant, a single mother who had to take care of her son,

satisfying stable housing was tied to being close to family; for another, safety was a priority, and this meant not living alone; and for the third, who experienced a divorce and had since been living with other people, privacy was the highest priority.

When seeking to understand occupational participation, another essential consideration suggested by CanMOP is the exploration of occupational possibilities, including how individuals access, initiate and sustain participation in valued occupations within meaningful contexts. This relates to whether context supports the availability of the occupation to them (access), its commencement or recommencement (initiate), and continued participation (sustain), in a valued occupation (Egan & Restall, 2022).

Regarding the occupation of obtaining or maintaining stable housing for my participants, accessing included whether stable and affordable housing was available, with policies and benefits that supported secure tenure. Initiating included whether a secured income or rent-support program, or case-management support, was available to enable participants moving into or living in this housing and begin this valued occupation. Finally sustaining included whether participants were able to obtain necessary services and public systems (e.g., addictions, mental and physical health, education, and employment), as well as whether they experienced social inclusion, such as feeling a sense of belonging, taking part in community life, and maintaining relationships with family and friends, to sustain the occupation of maintaining stable housing (Turner et al., 2017).

These occupational possibilities are influenced by the context in which they occur. This context can be examined across three interrelated levels: the micro, meso, and macro, which interact and influence one another and can either promote or limit a person's or group's ability to access, initiate, and sustain this valued occupation (Egan & Restall, 2022).

The microsystem includes the most immediate environment of individuals, including interactions that individuals have with people and with health and social service providers (Egan & Restall, 2022). At this level, a particularly significant factor influencing the participants' ability to keep stable housing was the loss of employment and related loss of income following their TBI. Due to the impact of their injuries, all participants lost their jobs, and five out of six have not been able to return to their previous positions or secure new employment. Such employment difficulties are especially relevant for individuals with TBI, given its long-term impact on functions critical for sustaining employment, such as behavioural, cognitive, emotional, and interpersonal functioning (Little et al., 2015). Experience of TBI is also associated with substantial income losses, and a dose-dependent relationship exists between TBI severity and the magnitude of income reduction and employment loss (Malhotra et al., 2024).

Without employment, financial stability became problematic. All participants had to apply to income replacement or income support programs. To navigate the system and apply to such programs, the participants interacted with the health and social care system over a long period of time. These interactions and the process of applying for insurance, benefits, or income support programs were challenging. Participants felt that their financial concerns were not taken seriously by service systems; they experienced dismissive or inappropriate behaviour from individual providers in health and income support systems, had to advocate for themselves to obtain insurance benefits and undergo multiple assessments to determine eligibility, and, in some cases, they lacked support from their family physicians during the process. These encounters, rooted in misunderstanding and judgment toward people with TBI, can discourage help-seeking, erode trust, and be experienced as re-traumatizing (Warren et al., 2025).

Given these accounts of misunderstanding and inadequate support from providers, there is a clear need to improve provider attitudes toward individuals with TBI. Adopting collaborative, respectful, and client-centred approaches grounded in power-sharing could mitigate these harmful experiences and facilitate more equitable access to care and supports (Brown et al., 2021). Participants further reported having difficulties understanding what they were applying for and the steps required to obtain specific benefits, which influenced their access to services. These issues, such as negative attitudes and discrimination toward individuals with TBI and difficulty with understanding the systems, are also echoed in the literature by both individuals with lived experience of TBI and homelessness and service providers who work with these populations (Jubinville et al., 2025).

Once participants navigated the system to find the service or program, applied and started receiving income from existing income support programs, such as the Ontario Disability Support Program (ODSP), they still had income problems because these programs do not provide sufficient income to meet the cost of living (Mahboubi & Ragab, 2020). Participants' experiences reflected the impact of this income limitation on their ability to remain stably housed. While maintaining stable housing was front and centre as a priority, their stories revealed that their housing needs were rarely treated as a primary concern during service interactions.

Findings from the third study corroborated this, showing that the community service providers were, indeed, only recording the housing needs of individuals with TBI during primary sessions, with very little or inconsistent follow-up. This highlights the fact that to prevent clients from losing stable housing, whether due to late rent payments, income loss, vulnerability to exploitation due to cognitive impairments, difficulty maintaining a safe living environment, etc., housing must be prioritized across the continuum of care. Providers should consistently inquire

about housing status in inpatient, outpatient, and community settings, support housing stability, and make appropriate referrals when instability is identified (Topolovec-Vranic et al., 2014). For example, providers in the community should incorporate housing as a standing topic in each client interaction, using open-ended, supportive questions, which could help identify risks earlier and promote more responsive intervention (Asthana et al., 2025). Although for clients who are on the waitlist for social housing, this active inquiry by providers cannot speed up the wait, it potentially can prevent homelessness through their actions while their clients are in unaffordable and/or unsuitable housing. This consideration also applies to acute care settings. Structured pre-discharge planning for individuals with TBI who were admitted with residential instability or homelessness, particularly through social work support, can help connect clients with income supports and housing providers before leaving the hospital (Buccieri et al., 2018; Oudshoorn & Van Berkum, 2024).

Beyond microsystem issues, the mesosystem also influenced these challenges, contributing to the difficulties the participants with TBI encountered while navigating services. The mesosystem includes system structures, such as health and social care systems, and organizational policies that determine who can access certain services/benefits (Egan & Restall, 2022). There are structural issues at this level that have been observed in both Canadian and U.S. contexts that significantly affect access to housing, financial, and community supports for a wide range of individuals (Andelic et al., 2021; Estrella et al., 2021; Hou et al., 2024; Jubinville et al., 2025).

Issues at this level often affect the care of individuals with TBI, including those who participated in this study. Specifically linked to this study were: siloed and fragmented systems, complex application processes, and poor coordination between sectors in health and social care systems. These factors meant that participants had difficulties finding the appropriate services

and completing application forms; they had to coordinate their own care and advocate for themselves to be referred to certain services. Those who had knowledge of the system were able to better manage their care and connect to the required services, whereas those without such knowledge were unaware of many services, including housing services or rent subsidies, and felt lost. Ultimately, this lack of knowledge contributed to their difficulties in maintaining stable housing or to their experience of homelessness.

These same challenges were also expressed by the participating community organization staff, who noted that many healthcare workers, such as family doctors, are not aware of the existence of community service providers or system navigators who could help connect patients to necessary supports, potentially hindering clients' access to housing. They also explained that applying for certain benefits often requires completing multiple steps by both staff and clients, which can be burdensome and complicated for both parties. These issues, as described by staff, make service navigation a complicated process for service users, who often do not know where to go for support. Indeed, navigating pathways and coordinating services is challenging for providers and limits their ability to address clients' needs, including housing, effectively (Estrella et al., 2021).

These systemic issues within health and social care, along with the lack of consideration for the housing needs of individuals with TBI, contributed to residential instability and, for some, homelessness, highlighting that targeted structural actions are required to address mesosystem-level barriers that contribute to housing insecurity. Addressing these barriers begins with recognizing that residential instability and homelessness intersect multiple government responsibilities, including healthcare, housing, income support, and employment. Prevention of housing instability following TBI requires an integrated systems perspective, in which health and

social care systems share responsibility for housing outcomes and providers support individuals with system navigation (Gaetz & Dej, 2017; Rolfe et al., 2020). Capacity-building efforts are also required for health and social care providers and should include training on the functional and behavioural impacts of TBI, harm reduction strategies, mental health crisis intervention, and the intersection of TBI with housing instability (Estrella et al., 2021).

At the meso level, governments and institutions must take concrete steps to reduce service navigation burdens. This includes simplifying application processes for benefits, providing sufficient system navigation services, and supporting local and community-based organizations in implementing targeted interventions for individuals with TBI at risk of homelessness and adapting policies to reflect local needs and contexts (Van Berkum et al., 2025). An example of such an initiative is the homelessness prevention project conducted by the organization in my third study, which demonstrated the effectiveness of locally tailored interventions in improving housing stability. However, it targeted only a limited number of individuals and had to be stopped due to its reliance on temporary funding opportunities.

Importantly, the meso level plays an important role in the ability of individuals to remain stably housed or find new housing, particularly as market forces driven by supply and affordability drive costs beyond what many can pay (Colantonio et al., 2010; Kennedy et al., 2025). Housing in Canada has become increasingly unaffordable in recent decades (Zhu et al., 2023), and as mentioned above, individuals with TBI are particularly affected because of their reliance on disability or welfare payments that do not match the housing market (Chamberlain & Johnson, 2013; Estrella et al., 2021). The staff participants also highlighted that there is insufficient supportive housing for individuals with TBI to live independently and affordably. They also noted that there are excessive bureaucratic processes, such as complex, multilayered

approval procedures, in implementing community service plans targeting housing for this population. This shortage in social and affordable housing has led to long waitlists for accessing housing units (Colantonio et al., 2010; Estrella et al., 2021). Participants from the community organization further highlighted that insufficient government investment in housing and a lack of clear plans and direction for housing solutions for this population have undermined timely access of their clients to stable housing. These constraints also reduced the organization's capacity to provide additional housing units beyond what they currently have available to clients or to support clients in securing affordable housing elsewhere. Many of their clients, therefore, continue to live in unaffordable housing while waitlisted, which increases the risk of homelessness.

While the issues in micro and meso systems contributed to several aspects leading to residential instability among my participants, the underlying influences can be traced to the macro context. The macro level, which is the larger socioeconomic and political context that is grounded in international, national, provincial, and local governance (Egan & Restall, 2022), can exert a profound influence on occupational participation. This system encompasses social and cultural values that shape the policies and legislation around housing (Oudshoorn & Van Berkum, 2024) that either promote or inhibit occupational participation (Egan & Restall, 2022).

The macro level regulates the health and social care systems through funding control and government regulations (Oudshoorn & Van Berkum, 2024). For example, it determines the amount of income support received by the participants with TBI, the availability of social housing support programs, and the funding received by the participating community organization, which in turn affects their service delivery. Findings from this project emphasized the importance of actions at the macro level, such as consistent investment in social housing,

which is a protective factor against homelessness. For individuals with TBI, there is also a need for policies that not only support safe and affordable housing but also emphasize the importance of providing brain injury-specific healthcare services in tandem with housing solutions to access the support they need to remain stably housed (Kennedy et al., 2025).

Additionally, there is a need for more effective income support programs. While a significant number of individuals with TBI are dependent on income replacement programs (Chamberlain & Johnson, 2013; Estrella et al., 2021), such programs have not kept pace with inflation in Canada. An adequate income assistance system should reflect the actual cost of living. Therefore, there is a need for programs to bridge the gap between individuals' income and the rent they should pay. Canada–Ontario Housing Benefit provides an example of how rent supplements can help address this income-rent gap (Government of Ontario, 2024). This monthly, portable housing allowance supports eligible low-income households, including individuals with disabilities, such as those with TBI, with their private market rental costs across Ontario. In general, enhancing income assistance programs can help individuals with TBI maintain stable housing and access a wider range of market-rent housing options (Oudshoorn & Van Berkum, 2024).

Macro-level values and beliefs also shape how health and social care systems define their responsibilities, influencing whether housing is understood as part of care (Oudshoorn & Van Berkum, 2024). For example, as mentioned earlier, this project revealed the fact that the housing of individuals with TBI was not dealt with as a priority of care, reflecting the macro-level belief that positions housing outside the remit of care, instead of recognizing it as a fundamental determinant of health and a basic human right (Rolfe et al., 2020). When housing is viewed as separate from care responsibilities, health and social care systems fail to meaningfully

incorporate housing considerations into rehabilitation and community reintegration efforts (Lee et al., 2021).

Building on these system-level assumptions, literature further indicates that health and social care systems tend to view housing as a privilege rather than a human right, and loss of stable housing is frequently interpreted as an individual's irresponsibility (Canham et al., 2022). Consequently, maintaining or acquiring housing after TBI is often framed as an individual's responsibility rather than a priority of care. Such beliefs obscure the legal and human right to adequate housing (Canada Without Poverty, 2016) and contribute to a persistent focus on individual characteristics as explanations for homelessness (Lee et al., 2021), a pattern evident in my scoping review. However, aligning with the findings of this study, recent literature has begun to conceptualize homelessness as a systemic issue rather than an individual failing (Van Loon et al., 2025). Consistent with social science research (Lee et al., 2021), this project understands homelessness and residential instability as dynamic processes shaped by interactions across micro, meso, and macro contexts.

Recognizing homelessness and housing instability as systemically produced phenomena, rather than an individual failing, necessitates macro-level policy and funding frameworks grounded in equity, harm reduction, and cross-sector collaboration (Alderwick et al., 2024; Swope & Hernández, 2019). A parallel shift in macro-level beliefs is also required to position housing as a fundamental determinant of health. Policies, funding models, and professional training should embed this understanding by integrating housing supports into care pathways and promoting collaboration between health, housing, and social care sectors (Swope & Hernández, 2019). Doing so can strengthen system-level accountability for supporting stable housing among individuals with TBI. It can also justify the inclusion of housing indicators in health performance

measures for individuals interacting with health and social care systems, and mandate that providers view housing as central to recovery and well-being (Gaetz & Dej, 2017; Rolfe et al., 2020).

Evidence from countries that have achieved the greatest success in preventing homelessness shows that prevention initiatives are most effective when embedded within broader, integrated systems. In these contexts, all levels of government are actively engaged, structural drivers of homelessness are addressed, and cross-sector collaboration is not only encouraged but essential (Jones et al., 2022).

Overall, the findings of this research project illustrate how micro, meso, and macro factors collectively shape the housing trajectories of individuals following TBI. However, the results underscore the dominant influence of macro-level forces, particularly through the health and social care systems that structure access to both supports and housing. It is at this macro level that the most meaningful and sustainable improvements to housing stability for individuals with TBI can be achieved.

5.4 Research Implications

The findings of this project highlighted the need for future research in several key areas. These include research on individuals who were unstably housed or homeless when they experienced a TBI; proactive approaches to housing services; system-level issues; strategies to improve public perceptions of TBI and homelessness; and ways to use research to influence values and beliefs at the system level. Each of these areas is discussed in more detail below.

This project showed how interactions with health and social care systems following TBI can influence housing outcomes among individuals who previously had stable housing and

highlighted the role of personal histories and relationships in this process, as well as in shaping what stable housing means for them. Therefore, as the first research implication, future research should explore the experiences of individuals who were homeless at the time of their TBI, identify the gaps and challenges they face in accessing health and social care services, and examine how different contextual levels influence their pathways to stable housing. Given their unique histories and relationships, these challenges may be even more pronounced for this group.

Second, further investigation is needed on proactive approaches towards housing services. This project showed that housing issues of individuals with TBI are not often proactively approached by the health and social care systems, which could lead to the housing loss of many individuals. Therefore, future research should explore the adoption of this approach to housing issues, as well as the effects of supporting individuals at risk of housing loss or homelessness through collaboration and power-sharing between providers and service users, in relation to what "housing satisfaction" means for this population and how it impacts housing stability.

The third implication encourages more research on system-level issues. This project identified several system-level gaps that extend beyond individual provider practices, particularly in how institutional norms and service structures shape access to care and housing for individuals with TBI. Therefore, further research is needed to address these issues. Although such research has been conducted in the general population (Canada Mortgage and Housing Corporation, 2024), there is limited research examining how these broader structural factors specifically affect people with TBI. In particular, focusing on understanding how prevailing values and beliefs in health and social care systems towards housing of individuals with TBI have impacted policy development and organization of services, contributes to barriers in accessing essential services and benefits.

Such research should explore how systemic barriers, such as inadequate income supports, the mismatch between benefits and housing costs, or housing policies that disadvantage individuals with TBI (e.g., expectations around maintaining a living space or paying rent on time), limit stable housing opportunities for this population (Lee et al., 2021). Future research should also explore questions of accountability (e.g., which institutions are best positioned to address these barriers, and at what point in the service pathway), as well as how these issues intersect with the broader shortage of affordable and supportive housing resources that affects the entire population, particularly individuals with TBI.

Fourth, research is needed to improve public perceptions of TBI and homelessness. In line with my findings, studies have revealed widespread public misconceptions about TBI and homelessness, which could lead to relationship failures, unemployment, and exclusion from society (Chapman & Hudson, 2010; McKinlay et al., 2011; Schellinger et al., 2018). These misconceptions might stem from stereotypes, such as that recovery following a brain injury follows a similar trajectory as other physical injuries, that individuals with TBI have ultimate control over their recovery process, and if they exert enough effort, they can recover fully, or that homelessness is because of making bad choices (Stergiou-Kita et al., 2017). Therefore, there is a need for researchers to further investigate how language in media and policy documents has framed these issues and suggest new framing strategies to reduce misconceptions and stigma toward this population. Moreover, conducting qualitative research and further involving individuals with lived experience of TBI and homelessness in participatory research could better capture the actual experiences of this population, further highlight the inaccurate beliefs and prejudicial attitudes toward them and suggest effective ways to enhance public perceptions and attitudes.

Finally, an important area for investigation is using research to influence values and beliefs at the system level. My findings highlighted an underestimation of TBI-related challenges and how they could result in housing issues among service providers and at the system level. While literature has suggested that the focus should be on knowledge translation to increase awareness about TBI outcomes among policymakers (Grimshaw et al., 2012), enhancing knowledge among policymakers might not guarantee policy revisions. Future research should therefore explore how evidence can be mobilized effectively in contexts where values and beliefs strongly shape decisions (Brownson et al., 2009).

For example, policymakers may prioritize economic considerations (e.g., budget constraints) over evidence of unmet housing needs among people with TBI. Research is thus needed on strategies that extend beyond simple dissemination, such as framing evidence in terms of cost-effectiveness (e.g., demonstrating that supportive housing reduces hospital readmissions and improves housing stability) (Brooks et al., 2022; Grimshaw et al., 2012); building coalitions with advocacy groups and individuals with lived experience of TBI; and creating policy dialogues that explicitly address competing values and priorities (Brooks et al., 2022; Kennedy et al., 2025). These approaches could increase the likelihood that research findings meaningfully inform resource allocation and housing policy reform.

5.5 Limitations

There were limitations in this project that are important to highlight. For my scoping review, I only included the studies published in English, which could limit the interpretation of the findings.

A limitation of my second study was that participants were individuals from a relatively homogeneous background (White Canadian citizens) who had stable housing prior to their TBI. Moreover, although the literature indicates that TBI is more prevalent among males, the majority of my participants were female. Taken together, these narrowed the diversity of perspectives represented in this study. In addition, all participants had stable housing before their injury, which limits the ability to capture a broader range of housing experiences and interactions with the system. Future studies should consider including individuals who were living in more precarious circumstances at the time of their injury to better capture diverse interactions with health and social care systems. Finally, despite the overrepresentation of Indigenous people in homeless and marginally housed populations, none of my participants identified as Indigenous. Conducting similar research with Indigenous participants living outside of First Nation reserves and Inuit communities could provide valuable insights into their unique experiences with TBI and their interactions with health and social care systems.

Regarding the limitations of my third study, the findings were drawn from a single organization delivering community services to individuals with TBI, whose approach of housing support and distinct challenges may be different from those of other agencies. Consequently, conducting this study within a different organization could produce varied, more nuanced insights. Additionally, I had access only to publicly available documents that provided basic information about the organization, and I was unable to review internal policy documents. This limitation may have constrained my understanding of policy-related influences and, more broadly, the triangulation of the findings.

5.6 Strengths

The strength of my first study was the consistent application of thorough and transparent methods throughout the process, as well as the inclusion of highly experienced researchers from diverse backgrounds in the research team.

Regarding my second study, the use of narrative inquiry to investigate the experiences of individuals with TBI was the strength of this study. This approach allowed me to gain a deeper understanding of participants' experiences. The inclusion of participants with diverse trajectories of interaction with health and social care systems, and with varied housing outcomes, further enriched the findings and strengthened their relevance. Importantly, the collaborative validation of preliminary results with participants not only ensured accuracy but also underscored the ethical commitment to representing their experiences authentically.

Finally, my third study was conducted in the organization that helped me with the recruitment for my second study. This means that most of the participants of my second study were the clients of this organization, and I believe this provided a proper integration for my project in general, as I could better picture the experiences of individuals in the second study, and better understand the domain of services, challenges, and gaps in services of the identified organization in the third study.

5.7 Conclusions

Experiencing a TBI significantly increases the risk of residential instability, creating unique challenges for both stably and unstably housed individuals and heightening vulnerability to homelessness. These challenges do not arise solely from cognitive changes related to TBI; residential instability and eventual homelessness often result from the interaction of micro, meso, and macro contextual factors. At the micro level, housing outcomes are shaped by individuals'

SES, the quality of personal relationships, and their interactions with health and social care systems, where positive or negative experiences directly influence housing stability. At the meso level, the insufficient social housing, system complexity and fragmentation, and long waitlists for supportive housing further undermine housing stability for individuals following a TBI. While services from health and social care providers are critical, these workers frequently underestimate the impact of TBI and work within systems that are poorly designed to address the complex needs of this population. At the macro level, within TBI healthcare and social services, housing concerns may not be seen as a priority. Maintaining stable housing is largely assumed to be the responsibility of individuals with TBI, and housing needs are rarely addressed proactively.

This project highlighted that residential instability is a systemic issue with all context levels playing a role, with the role of macro context being profound. Reframing housing as a fundamental determinant of health and a basic human right is therefore essential. Health and social care systems must prioritize housing needs when interacting with individuals with TBI across all care settings. Consistent government investment in social housing and improvements to income assistance programs to reflect the actual cost of living are also crucial. Additionally, mandating that service providers in health and social care systems inquire about clients' housing status, support housing stability within their capacity, and make appropriate referrals in cases of residential instability can help prevent housing loss. Because homelessness intersects with multiple areas of responsibility, including health care, housing, income support, and employment, governments and institutions must recognize and act upon their shared responsibility to prevent homelessness among individuals with TBI.

5.8 References

Alderwick, H., Hutchings, A., & Mays, N. (2024). Cross-sector collaboration to reduce health inequalities: a qualitative study of local collaboration between health care, social services, and other sectors under health system reforms in England. *BMC Public Health*, *24*(1), 2613.

Andelic, N., Røe, C., Tenovuo, O., Azouvi, P., Dawes, H., Majdan, M., Ranta, J., Howe, E. I., Wiegers, E. J. A., & Tverdal, C. (2021). Unmet rehabilitation needs after traumatic brain injury across Europe: results from the CENTER-TBI study. *Journal of Clinical Medicine*, *10*(5), 1035.

Asthana, S., Gago, L., Garcia, J., Beestrum, M., Pollack, T., Post, L., Barnard, C., & Goel, M. S. (2025). Housing instability screening and referral programs: A scoping review. *The Joint Commission Journal on Quality and Patient Safety*, *51*(1), 1–10.

Brooks, S. P., Zimmermann, G. L., Lang, M., Scott, S. D., Thomson, D., Wilkes, G., & Hartling, L. (2022). A framework to guide storytelling as a knowledge translation intervention for health-promoting behaviour change. *Implementation Science Communications*, *3*(1), 35.

Brownson, R. C., Chriqui, J. F., & Stamatakis, K. A. (2009). Understanding evidence-based public health policy. *American Journal of Public Health*, *99*(9), 1576–1583.

Buccieri, K., Oudshoorn, A., Frederick, T., Schiff, R., Abramovich, A., Gaetz, S., & Forchuk, C. (2018). Hospital discharge planning for Canadians experiencing homelessness. *Housing, Care and Support*.

Canada Mortgage and Housing Corporation. (2024). *Systemic Barriers Framework: Understanding barriers to accessing and staying in housing in Canada's housing system*. https://www.cmhc-schl.gc.ca/professionals/housing-markets-data-and-research/housing-research/research-reports/housing-needs/systemic-barriers-framework-understanding-barriers

Canada Without Poverty. (2016). *Youth Rights! Right Now! Ending Youth Homelessness: A Human Rights Guide*. https://homelesshub.ca/wp-content/uploads/2023/12/YouthRightsRightNow-final.pdf

Canham, S. L., Moore, P., Custodio, K., & Bosma, H. (2022). Homeism: Naming the stigmatization and discrimination of persons experiencing homelessness. *Housing, Theory and Society*, *39*(5), 507–523.

Chamberlain, C., & Johnson, G. (2013). Pathways into adult homelessness. *Journal of Sociology*, *49*(1), 60–77.

Chapman, R. C. G., & Hudson, J. M. (2010). Beliefs about brain injury in Britain. *Brain Injury*, *24*(6), 797–801.

Colantonio, A., Howse, D., Kirsh, B., Chiu, T., Zulla, R., & Levy, C. (2010). Living environments for people with moderate to severe acquired brain injury. *Healthcare Policy*, *5*(4), e120.

Egan, M., & Restall, G. (2022). *Promoting Occupational Participation: Collaborative Relationship-Focused Occupational Therapy*. Canadian Association of Occupational Therapy.

Estrella, M. J., Kirsh, B., Kontos, P., Grigorovich, A., Colantonio, A., Chan, V., & Nalder, E. J. (2021). Critical characteristics of housing and housing supports for individuals with concurrent traumatic brain injury and mental health and/or substance use challenges: a qualitative study. *International Journal of Environmental Research and Public Health*, *18*(22), 12211.

Gaetz, S., & Dej, E. (2017). *A new direction: A framework for homelessness prevention*. Canadian Observatory on Homelessness Press.

Government of Ontario. (2024). *"Taking Action- Narrative Elements for Each Ontario- Delivered Initiative." Ontario's Second Action Plan Under the National Housing Strategy (2022-2025)*.

https://www.ontario.ca/document/ontarios-second-action-plan-under-national-housing-strategy-2022-25/taking-action#

Grimshaw, J. M., Eccles, M. P., Lavis, J. N., Hill, S. J., & Squires, J. E. (2012). Knowledge translation of research findings. *Implementation Science*, *7*(1), 50.

Hou, Y., Zhou, A., Brooks, L., Reid, D., Turkstra, L., & MacDonald, S. (2024). Rehabilitation access for individuals with cognitive-communication challenges after traumatic brain injury: A co-design study with persons with lived experience. *International Journal of Language & Communication Disorders*, *59*(2), 648–664.

Hwang, S. W., Colantonio, A., Chiu, S., Tolomiczenko, G., Kiss, A., Cowan, L., Redelmeier, D. A., & Levinson, W. (2008). The effect of traumatic brain injury on the health of homeless people. *Cmaj*, *179*(8), 779–784.

Jubinville, W., Ducharme, R., Hendryckx, C., Roy, L., & Bottari, C. (2025). Barriers, facilitators and solutions to the care of people experiencing homelessness with traumatic brain injury in Quebec, Canada: clinicians' and concerned parties' perspectives. *Disability and Rehabilitation*, 1–10.

Kennedy, C. J., Grewal, J., Warren, G., Schmidt, J., Biagioni, J. B., & Garcia-Barrera, M. A. (2025). Brain injury, mental health and substance use in homeless populations: community-generated recommendations for healthcare service delivery and research. *BMC Health Services Research*, *25*(1), 1–14.

Lee, B. A., Shinn, M., & Culhane, D. P. (2021). Homelessness as a moving target. In *The Annals of the American Academy of Political and Social Science* (Vol. 693, Issue 1, pp. 8–26). SAGE Publications Sage CA: Los Angeles, CA.

Little, D. M., Cook, A. J., Morissette, S. B., & Klocek, J. W. (2015). Considerations for return to work following traumatic brain injury. *Handbook of Clinical Neurology*, *131*, 465–479.

Mahboubi, P., & Ragab, M. (2020). Lifting Lives: The Problems with Ontario's Social Assistance Programs and How to Reform Them. *CD Howe Institute Commentary*, *572*.

Malhotra, A. K., Jaffe, R. H., Shakil, H., Mathieu, F., Nathens, A. B., Kulkarni, A. V, Diep, C., Yuan, E. Y., Ladha, K. S., & Coyte, P. C. (2024). Unemployment and personal income loss after traumatic brain injury. *JAMA Surgery*, *159*(12), 1415–1422.

McKinlay, A., Bishop, A., & McLellan, T. (2011). Public knowledge of 'concussion'and the different terminology used to communicate about mild traumatic brain injury (MTBI). *Brain Injury*, *25*(7–8), 761–766.

Oudshoorn, A., & Van Berkum, A. (2024). Homelessness prevention. In G. Johnson, D. Culhane, S. Fitzpatrick, S. Metraux, & E. O'Sullivan (Eds.), *Research Handbook on Homelessness* (Vol. 1, pp. 431–439). Edward Elgar Publishing.

Restall, G. J., & Egan, M. Y. (2021). Collaborative relationship-focused occupational therapy: Evolving lexicon and practice. *Canadian Journal of Occupational Therapy*, *88*(3), 220–230.

Rolfe, S., Garnham, L., Godwin, J., Anderson, I., Seaman, P., & Donaldson, C. (2020). Housing as a social determinant of health and wellbeing: developing an empirically-informed realist theoretical framework. *BMC Public Health*, *20*(1), 1138.

Schellinger, S. K., Munson, B., & Kennedy, M. R. T. (2018). Public perceptions of traumatic brain injury: predictors of knowledge and the effects of education. *Brain Injury*, *32*(11), 1377–1385.

Stergiou-Kita, M., Grigorovich, A., Damianakis, T., Le Dorze, G., David, C., Lemsky, C., & Hebert, D. (2017). The big sell: Managing stigma and workplace discrimination following moderate to severe brain injury. *Work*, *57*(2), 245–258. https://doi.org/10.3233/WOR-172556

Stubbs, J. L., Thornton, A. E., Gicas, K. M., O'Connor, T. A., Livingston, E. M., Lu, H. Y., Mehta, A. K., Lang, D. J., Vertinsky, A. T., & Field, T. S. (2022). Characterizing traumatic brain injury and

its association with losing stable housing in a community-based sample. *The Canadian Journal of Psychiatry*, *67*(3), 207–215.

Stubbs, J. L., Thornton, A. E., Sevick, J. M., Silverberg, N. D., Barr, A. M., Honer, W. G., & Panenka, W. J. (2020). Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. *The Lancet Public Health*, *5*(1), e19–e32.

Swope, C. B., & Hernández, D. (2019). Housing as a determinant of health equity: A conceptual model. *Social Science & Medicine*, *243*, 112571.

Topolovec-Vranic, J., Ennis, N., Howatt, M., Ouchterlony, D., Michalak, A., Masanic, C., Colantonio, A., Hwang, S. W., Kontos, P., & Stergiopoulos, V. (2014). Traumatic brain injury among men in an urban homeless shelter: observational study of rates and mechanisms of injury. *Canadian Medical Association Open Access Journal*, *2*(2), E69–E76.

Turner, A., Albanese, T., & Pakeman, K. (2017). Discerning 'functional and absolute zero': Defining and measuring an end to homelessness in Canada. *SPP Research Paper*, *10*(2).

Van Loon, C., Oudshoorn, A., Mantler, T., Gittings, L., Kerman, N., & Ariba, O. (2025). Rethinking homelessness: a scoping review of social constructions and meanings. *Journal of Social Distress and Homelessness*, 1–19.

Warren, G. C., Kennedy, C. J., Gavas, N., Schmidt, J., Woodin, E., Breese Biagioni, J., & Garcia-Barrera, M. A. (2025). Barriers and Facilitators to Housing and Healthcare Services for People Experiencing Homelessness with Concurrent Brain Injury, Mental Health and Substance Use Disorders: A Qualitative Study. *Frontiers in Public Health*, *13*, 1643689.

Zhu, Y., Yuan, Y., Gu, J., & Fu, Q. (2023). Neoliberalization and inequality: disparities in access to affordable housing in urban Canada 1981–2016. *Housing Studies*, *38*(10), 1860–1887.

CHAPTER 6: APPENDICES

Appendix A- Search Strategies in Databases for Study 1 (Scoping Review)

A.1. Medline Search Strategy

Ovid MEDLINE(R) ALL <1946 to December 03, 2025>

1 homeless persons/ or homeless youth/ 12310

2 (homeless* or unhoused or "unstably housed" or runaway* or "housing instability").ti,ab,kf. 19307

3 ("street people" or street person* or street youth* or street child*).ti,ab,kf. 778

4 ("vulnerabl* housed" or "Marginalized housed").ti,ab,kf. 72

5 shelter*.ab,ti,kf. 16709

6 ("Socioeconomic status" or "Socioeconomic position").ti,ab,kf. 71602

7 1 or 2 or 3 or 4 or 5 or 6 107403

8 craniocerebral trauma/ or brain injuries/ or brain hemorrhage, traumatic/ or brain stem hemorrhage, traumatic/ or cerebral hemorrhage, traumatic/ or brain injuries, diffuse/ or diffuse axonal injury/ or brain injuries, traumatic/ or brain concussion/ or brain contusion/ or brain injury, chronic/ or head injuries, closed/ or contrecoup injury/ or post-concussion syndrome/ or head injuries, penetrating/ or intracranial hemorrhage, traumatic/ or subarachnoid hemorrhage, traumatic/ or skull fractures/ or skull fracture, basilar/ or skull fracture, depressed/ 120207

9 (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*))).ti,ab,kf. 103903

10 ((craniocerebral adj3 (trauma* or injur*)) or (head adj3 (trauma* or injur*)) or (frontal adj3 trauma*) or (forehead adj3 trauma*) or (occipital adj3 trauma*) or (parietal adj3 trauma*) or (temporal adj3 trauma*) or (skull adj3 (crush* or injur*))).ti,ab,kf. 49004

11 ((brain adj3 injur*) or (brain hemorrhage* adj3 traumatic) or (cerebellar hemorrhage* adj3 traumatic) or (brain injur* adj3 diffuse) or (axon* injur* adj3 diffuse) or (brain injur* adj3 trauma*) or (brain adj3 concussion*) or (cerebral adj3 concussion*) or (brain adj3 concussion*) or (concussion* adj3 mild) or (concussion* adj3 severe) or mild traumatic brain injury or (brain adj3 contusion) or (cerebral adj3 contusion) or (cortical adj3 contusion) or (cerebellar adj3 contusion)).ti,ab,kf. 113444

12 ((brain injur* adj3 chronic) or (head injur* adj3 closed) or (head injur* adj3 nonpenetrat*) or (head trauma* adj3 closed) or (head injur* adj3 blunt) or (contrecoup adj3 injur*) or (post-concussi* adj3 syndrom*) or (post-concussi* adj3 symptom*) or (head injur* adj3 penetrat*) or (head trauma* adj3 penetrat*) or (cranial trauma* adj3 penetrat*) or (craniocerebral trauma* adj3 penetrat*) or (brain injur* adj3 penetrat*) or (intracranial hemorrhage* adj3 traumatic) or (subarachnoid hemorrhage* adj3 traumatic) or (skull adj3 fracture*)).ti,ab,kf. 14421

13 8 or 9 or 10 or 11 or 12 197128

14 7 and 13 675

A.2. CINAHL Search Strategy

S1	(MH "Homeless Persons")
S2	(MH "Homelessness")
S3	TI ((homeless* or unhoused or "unstably housed" or runaway* or "housing instability")) OR AB ((homeless* or unhoused or "unstably housed" or runaway* or "housing instability")) OR MW ((homeless* or unhoused or "unstably housed" or runaway* or "housing instability"))
S4	TI ("street people" or "street person* OR street youth* OR street child*) OR AB ("street people" or "street person* OR street youth* OR street child*) OR MW ("street people" or "street person* OR street youth* OR street child*)
S5	TI ("vulnerabl* housed" or "Marginalized housed") OR AB ("vulnerabl* housed" or "Marginalized housed") OR MW ("vulnerabl* housed" or "Marginalized housed")
S6	TI shelter* OR AB shelter* OR MW shelter*
S7	TI ("Socioeconomic status" or "Socioeconomic position") OR AB ("Socioeconomic status" or "Socioeconomic position") OR MW ("Socioeconomic status" or "Socioeconomic position")
S8	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
S9	(MH "Head Injuries") OR (MH "Brain Injuries") OR (MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Brain Contusions") OR (MH "Epilepsy, Post-Traumatic") OR (MH "Left Hemisphere Injuries") OR (MH "Right Hemisphere Injuries") OR (MH "Skull Fractures")
S10	(MH "Cerebral Hemorrhage") OR (MH "Intracranial Hemorrhage") OR (MH "Basal Ganglia Hemorrhage") OR (MH "Subarachnoid Hemorrhage")
S11	(MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Brain Contusions") OR (MH "Epilepsy, Post-Traumatic") OR (MH "Head Injuries") OR (MH "Brain Injuries") OR (MH "Right Hemisphere Injuries") OR (MH "Left Hemisphere Injuries")
S12	(MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Brain Contusions") OR (MH "Brain Injuries") OR (MH "Head Injuries") OR (MH "Left Hemisphere Injuries") OR (MH "Right Hemisphere Injuries")
S13	(MH "Brain Damage, Chronic") OR (MH "Brain Injuries") OR (MH "Brain Concussion") OR (MH "Postconcussion Syndrome")

	OR (MH "Brain Contusions") OR (MH "Epilepsy") OR (MH "Headache") OR (MH "Headache, Secondary")
S14	(MH "Head Injuries") OR (MH "Brain Injuries") OR (MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Brain Contusions") OR (MH "Left Hemisphere Injuries") OR (MH "Pneumocephalus") OR (MH "Right Hemisphere Injuries") OR (MH "Skull Fractures")
S15	(MH "Brain Injuries") OR (MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Head Injuries")
S16	(MH "Intracranial Hemorrhage") OR (MH "Cerebral Hemorrhage") OR (MH "Basal Ganglia Hemorrhage") OR (MH "Subarachnoid Hemorrhage")
S17	(MH "Intracranial Hemorrhage") OR (MH "Cerebral Hemorrhage") OR (MH "Basal Ganglia Hemorrhage") OR (MH "Subarachnoid Hemorrhage")
S18	(MH "Skull Fractures") OR (MH "Brain Injuries") OR (MH "Brain Concussion") OR (MH "Postconcussion Syndrome") OR (MH "Brain Contusions") OR (MH "Left Hemisphere Injuries") OR (MH "Right Hemisphere Injuries")
S19	TI (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*))) OR AB (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*))) OR MW (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*)))
S20	TI ((craniocerebral N2 (trauma* or injur*)) or (head N2 (trauma* or injur*)) or (frontal N2 trauma*) or (forehead N2 trauma*) or (occipital N2 trauma*) or (parietal N2 trauma*) or (temporal N2 trauma*) or (skull N2 (crush* or injur*))) OR AB ((craniocerebral N2 (trauma* or injur*)) or (head N2 (trauma* or injur*)) or (frontal N2 trauma*) or (forehead N2 truama*) or (occipital N2 trauma*) or (parietal N2 trauma*) or (temporal N2 trauma*) or (skull N2 (crush* or injur*))) OR MW ((craniocerebral N2 (trauma* or injur*)) or (head N2 (trauma* or injur*)) or (frontal N2 trauma*) or (forehead N2 trauma*) or (occipital N2 trauma*) or (parietal N2 trauma*) or (temporal N2 trauma*) or (skull N2 (crush* or injur*)))
S21	TI ((brain N2 injur*) or (brain hemorrhage* N2 traumatic) or (cerebellar hemorrhage* N2 traumatic) or (brain injur* N2 diffuse) or (axon* injur* N2 diffuse) or (brain injur* N2 trauma*) or (brain N2 concussion*) or (cerebral N2 concussion*) or (brain N2 concussion*) or (concussion* N2 mild) or (concussion* N2 severe) or mild traumatic brain injury or (brain N2 contusion) or (cerebral N2 contusion) or (cortical N2 contusion) or (cerebellar N2 contusion)) OR AB ((brain N2 injur*) or (brain hemorrhage* N2 traumatic) or (cerebellar hemorrhage* N2 traumatic) or (brain injur* N2 diffuse) or (axon* injur* N2 diffuse) or (brain injur* N2 trauma*) or (brain N2 concussion*) or (cerebral N2 concussion*) or (brain N2 concussion*) or (concussion* N2 mild)

	or (concussion* N2 severe) or mild traumatic brain injury or (brain N2 contusion) or (cerebral N2 contusion) or (cortical N2 contusion) or (cerebellar N2 contusion)) OR MW ((brain N2 injur*) or (brain hemorrhage* N2 traumatic) or (cerebellar hemorrhage* N2 traumatic) or (brain injur* N2 diffuse) or (axon* injur* N2 diffuse) or (brain injur* N2 trauma*) or (brain N2 concussion*) or (cerebral N2 concussion*) or (brain N2 concussion*) or (concussion* N2 mild) or (concussion* N2 severe) or mild traumatic brain injury or (brain N2 contusion) or (cerebral N2 contusion) or (cortical N2 contusion) or (cerebellar N2 contusion))
S22	TI ((brain injur* N2 chronic) or (head injur* N2 closed) or (head injur* N2 nonpenetrat*) or (head trauma* N2 closed) or (head injur* N2 blunt) or (contrecoup N2 injur*) or (post-concussi* N2 syndrom*) or (post-concussi* N2 symptom*) or (head injur* N2 penetrat*) or (head trauma* N2 penetrat*) or (cranial trauma* N3 penetrat*) or (craniocerebral trauma* N2 penetrat*) or (brain injur* N2 penetrat*) or (intracranial hemorrhage* N2 traumatic) or (subarachnoid hemorrhage* N2 traumatic) or (skull N2 fracture*)) OR AB ((brain injur* N2 chronic) or (head injur* N2 closed) or (head injur* N2 nonpenetrat*) or (head trauma* N2 closed) or (head injur* N2 blunt) or (contrecoup N2 injur*) or (post-concussi* N2 syndrom*) or (post-concussi* N2 symptom*) or (head injur* N2 penetrat*) or (head trauma* N2 penetrat*) or (cranial trauma* N2 penetrat*) or (craniocerebral trauma* N2 penetrat*) or (brain injur* N2 penetrat*) or (intracranial hemorrhage* N2 traumatic) or (subarachnoid hemorrhage* N2 traumatic) or (skull N2 fracture*)) OR MW ((brain injur* N2 chronic) or (head injur* N2 closed) or (head injur* N2 nonpenetrat*) or (head trauma* N2 closed) or (head injur* N2 blunt) or (contrecoup N2 injur*) or (post-concussi* N2 syndrom*) or (post-concussi* N2 symptom*) or (head injur* N2 penetrat*) or (head trauma* N2 penetrat*) or (cranial trauma* N2 penetrat*) or (craniocerebral trauma* N2 penetrat*) or (brain injur* N2 penetrat*) or (intracranial hemorrhage* N2 traumatic) or (subarachnoid hemorrhage* N2 traumatic) or (skull N2 fracture*))
S23	S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22
S24	S8 AND S23

A.3. Web of Science Search Strategy

TS=(homeless* or unhoused or “unstably housed” or runaway* or “housing instability” OR “street people” or “street person*” OR “street youth*” OR “street child*” OR “vulnerabl* housed” or “Marginalized housed” OR “Socioeconomic status” or “Socioeconomic position”) AND TS=(TBI or ((trauma* or acute or severe* or acquired) and (“brain injur*” or “brain trauma*” or “head injur*” or “head trauma*”)) OR (craniocerebral NEAR/2 (trauma* or injur*)) or (head NEAR/2 (trauma* or injur*)) or (frontal NEAR/2 trauma*) or (forehead NEAR/2 trauma*) or (occipital NEAR/2 trauma*) or (parietal NEAR/2 trauma*) or (temporal NEAR/2 trauma*) or (skull NEAR/2 (crush* or injur*)) OR (brain NEAR/2 injur*) or (“brain hemorrhage*” NEAR/2 traumatic) or (“cerebellar hemorrhage*” NEAR/2 traumatic) or (“brain injur*” NEAR/2 diffuse) or (“axon* injur*” NEAR/2 diffuse) or (“brain injur*” NEAR/2 trauma*) or (brain NEAR/2 concussion*) or (cerebral NEAR/2 concussion*) or (brain NEAR/2 concussion*) or (concussion* NEAR/2 mild) or (concussion* NEAR/2 severe) or “mild traumatic brain injury” or (brain NEAR/2 contusion) or (cerebral NEAR/2 contusion) or (cortical NEAR/2 contusion) or (cerebellar NEAR/2 contusion) OR (“brain injur*” NEAR/2 chronic) or (“head injur*” NEAR/2 closed) or (“head injur*” NEAR/2 nonpenetrat*) or (“head trauma*” NEAR/2 closed) or (“head injur*” NEAR/2 blunt) or (countrecoup NEAR/2 injur*) or (“post-concussi*” NEAR/2 syndrom*) or (“post-concussi*” NEAR/2 symptom*) or (“head injur*” NEAR/2 penetrat*) or (“head trauma*” NEAR/2 penetrat*) or (“cranial trauma*” NEAR/2 penetrat*) or (“craniocerebral trauma*” NEAR/2 penetrat*) or (“brain injur*” NEAR/2 penetrat*) or (“intracranial hemorrhage*” NEAR/2 traumatic) or (“subarachnoid hemorrhage*” NEAR/2 traumatic) or (skull NEAR/2 fracture*))

A.4. Embase Search Strategy

Embase Classic+Embase <1947 to 2025 December 3>

1 homeless man/ or homeless person/ or homeless woman/ or homeless youth/ 5049
2 homeless person/ or homeless woman/ or homeless youth/ or homelessness/ 19922
3 (homeless* or unhoused or "unstably housed" or runaway* or "housing instability").ti,ab,kf. 24369
4 ("street people" or "street person*OR street youth*OR street child*").ti,ab,kf. 42
5 ("vulnerabl* housed" or "Marginalized housed").ti,ab,kf. 94
6 shelter*.ab,ti,kf. 20483
7 ("Socioeconomic status" or "Socioeconomic position").ti,ab,kf. 88700
8 1 or 2 or 3 or 4 or 5 or 6 or 7 134343
9 brain injury/ or head injury/ or acquired brain injury/ or brain concussion/ or brain contusion/ or brain damage/ or brain stem injury/ or cerebellum injury/ or diffuse brain injury/ or postconcussion syndrome/ or traumatic brain injury/ 311639
10 brain hemorrhage/ or brain ventricle hemorrhage/ or cerebellum hemorrhage/ or massive intracerebral hemorrhage/ or subarachnoid hemorrhage/ or brain hernia/ 224376
11 diffuse axonal injury/ or diffuse brain injury/ or brain injury/ 119260
12 brain concussion/ or brain injury/ or concussion/ or brain contusion/ 139245
13 brain concussion/ or brain contusion/ or brain injury/ or contusion/ 148146
14 head injury/ or "head and neck injury"/ or brain injury/ or skull injury/ 180704
15 contrecoup injury/ 98
16 postconcussion syndrome/ or brain injury/ 119481
17 head injury/ or "head and neck injury"/ or brain injury/ or skull injury/ 180704
18 subarachnoid hemorrhage/ or brain hemorrhage/ 217883
19 skull fracture/ or skull injury/ or depressed skull fracture/ or skull base fracture/ or temporal bone fracture/ 18733
20 skull base fracture/ or skull fracture/ or frontobasal fracture/15524
21 depressed skull fracture/ or skull fracture/ 14090
22 (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*))).ti,ab,kf. 158865
23 ((craniocerebral adj3 (trauma* or injur*)) or (head adj3 (truama* or injur*)) or (frontal adj3 trauma*) or (forehead adj3 trauma*) or (occipital adj3 trauma*) or (parietal adj3 trauma*) or (temporal adj3 trauma*) or (skull adj3 (crush* or injur*))).ti,ab,kf. 54892
24 ((brain adj3 injur*) or (brain hemorrhage* adj3 traumatic) or (cerebellar hemorrhage* adj3 traumatic) or (brain injur* adj3 diffuse) or (axon* injur* adj3 diffuse) or (brain injur* adj3 trauma*) or (brain adj3 concussion*) or (cerebral adj3 concussion*) or (brain adj3 concussion*) or (concussion* adj3 mild) or (concussion* adj3 severe) or mild traumatic brain injury or (brain adj3 contusion) or (cerebral adj3 contusion) or (cortical adj3 contusion) or (cerebellar adj3 contusion)).ti,ab,kf. 162952
25 ((brain injur* adj3 chronic) or (head injur* adj3 closed) or (head injur* adj3 nonpenetrat*) or (head trauma* adj3 closed) or (head injur* adj3 blunt) or (contrecoup adj3 injur*) or (post-concussi* adj3 syndrom*) or (post-concussi* adj3 symptom*) or (head injur* adj3 penetrat*) or (head trauma* adj3 penetrat*) or (cranial trauma* adj3 penetrat*) or

(craniocerebral trauma* adj3 penetrat*) or (brain injur* adj3 penetrat*) or (intracranial hemorrhage* adj3 traumatic) or (subarachnoid hemorrhage* adj3 traumatic) or (skull adj3 fracture*)).ti,ab,kf. 21176
26 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 600093
27 8 and 26 1660

A.5. PsychInfo Search Strategy

APA PsycInfo <1806 to December 2025 Week 2>

1 homeless/ or homeless mentally ill/ or homeless youth/ 9695
2 homeless youth/ or homeless/ 9695
3 (homeless* or unhoused or "unstably housed" or runaway* or "housing instability").tw. 16289
4 ("street people" or "street person*OR street youth*OR street child*").tw. 55
5 ("vulnerabl* housed" or "Marginalized housed").tw. 32
6 shelter*.tw. 9732
7 ("Socioeconomic status" or "Socioeconomic position").tw. 37802
8 1 or 2 or 3 or 4 or 5 or 6 or 7 61589
9 head injuries/ or brain concussion/ or brain damage/ or brain injuries/ or traumatic brain injury/ or whiplash/ 48454
10 brain injuries/ or traumatic brain injury/ or cognitive impairment/ or head injuries/ 78049
11 traumatic brain injury/ or brain injuries/ or brain concussion/ or head injuries/ 31380
12 cerebral hemorrhage/ 2292
13 brain damage/ or cognitive impairment/ or head injuries/ or brain injuries/ 73980
14 brain concussion/ or head injuries/ or traumatic brain injury/ or post-concussive symptoms/ or brain damage/ 46191
15 subarachnoid hemorrhage/ 1010
16 (TBI or ((trauma* or acute or severe* or acquired) and (brain injur* or brain trauma* or head injur* or head trauma*))).tw. 33105
17 ((craniocerebral adj3 (trauma* or injur*)) or (head adj3 (trauma* or injur*)) or (frontal adj3 trauma*) or (forehead adj3 trauma*) or (occipital adj3 trauma*) or (parietal adj3 trauma*) or (temporal adj3 trauma*) or (skull adj3 (crush* or injur*))).tw. 9749
18 ((brain adj3 injur*) or (brain hemorrhage* adj3 traumatic) or (cerebellar hemorrhage* adj3 traumatic) or (brain injur* adj3 diffuse) or (axon* injur* adj3 diffuse) or (brain injur* adj3

trauma*) or (brain adj3 concussion*) or (cerebral adj3 concussion*) or (brain adj3 concussion*) or (concussion* adj3 mild) or (concussion* adj3 severe) or mild traumatic brain injury or (brain adj3 contusion) or (cerebral adj3 contusion) or (cortical adj3 contusion) or (cerebellar adj3 contusion)).tw.38283

19 ((brain injur* adj3 chronic) or (head injur* adj3 closed) or (head injur* adj3 nonpenetrat*) or (head trauma* adj3 closed) or (head injur* adj3 blunt) or (contrecoup adj3 injur*) or (post-concussi* adj3 syndrom*) or (post-concussi* adj3 symptom*) or (head injur* adj3 penetrat*) or (head trauma* adj3 penetrat*) or (cranial trauma* adj3 penetrat*) or (craniocerebral trauma* adj3 penetrat*) or (brain injur* adj3 penetrat*) or (intracranial hemorrhage* adj3 traumatic) or (subarachnoid hemorrhage* adj3 traumatic) or (skull adj3 fracture*)).tw. 3860

20 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 111221

21 8 and 20 706

Appendix B- Ethics Approval for Study 2

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

H-11-23-9598 - REG-9598 - Certificat d'approbation éthique / Certificate of Ethics Approval

(English message follows)

Cher/Chère Ramin Banimahdi,

Veuillez trouver ci-joint le certificat d'approbation éthique pour le projet intitulé «Experiencing residential instability following traumatic brain injury: stories of the interactions with the health and social systems».

Le certificat est valide jusqu'au : 19-11-2024

Recherche financée : veuillez faire suivre une copie du certificat au Service de gestion de la recherche.

Si vous avez des questions, n'hésitez pas à communiquer avec le Bureau d'éthique à ethique@uottawa.ca ou en composant le 613-562-5387.

Vous pouvez voir votre demande en vous connectant à votre compte eReviews.

Cordialement,

Riana Marcotte
Responsable d'éthique en recherche

Ceci est une réponse automatisée, merci de ne pas répondre à ce courriel.

Dear Ramin Banimahdi,

Please find attached the certificate of ethics approval for your research project titled "Experiencing residential instability following traumatic brain injury: stories of the interactions with the health and social systems".

This certificate is valid until: 19-11-2024

Funded research: A reminder that you must provide a copy of this certificate to Research Management Services.

If you have any questions, please contact the Ethics Office at ethics@uottawa.ca or by telephone at 613-562-5387.

You can view your project at any time by logging into eReviews.

Best regards,

Riana Marcotte
Protocol Officer

This is an automated message. Please do not reply directly to this email.

Attachement(s) / Attachment(s)
approvalLetter1700489210330.pdf

550, rue Cumberland, pièce 154
Ottawa (Ontario) K1N 6N5 Canada

550 Cumberland Street, Room 154
Ottawa, Ontario K1N 6N5 Canada

613-562-5387 • 613-562-5338 • ethique@uOttawa.ca / ethics@uOttawa.ca
www.recherche.uottawa.ca/deontologie I www.recherche.uottawa.ca/ethics

Appendix C- Interview Guide for Study 2

Interview Guide for People with Traumatic Brain Injury (TBI)

Key issues to understand:

- Life stories after experiencing TBI
- Interactions with healthcare and social organizations
- Housing transitions they experienced during that time.

Introduction: Today I would like to talk about your experiences of residential instability and interactions with healthcare and social systems after your TBI.

Question	Follow up questions	Information needed
Can you tell me about your TBI?	When and how did it happen? Tell me about your recovery journey.	
Can you tell me your story about housing since your TBI?	Where did you live before your TBI? When did you lose your stable house for the first time (after your TBI?)? Did you lose your housing more than once? What happened to you before losing your stable housing?/Can you describe to me the events that led to losing your stable housing? How did it happen? What happened to you afterwards? In what ways do you think TBI influenced your ability to stay housed? (Or What was the role of TBI in losing your stable house?)	Housing situation and stability of housing prior to TBI

	What did you do or try to stop losing your housing? Who\Where did you find support? Did you apply for services from any organization? Did you receive support from any of them? If yes, what kind of services? If no, what happened or why? (if more than one episode of housing instability) Tell me about the second time you lost your housing.	
Now we will discuss your story (experiences) about the period of time you were receiving services from those organizations. Tell me about the story of receiving healthcare services following your TBI.	Can you tell me about your story of receiving healthcare services in the emergency and neurosurgery department? Did you receive rehabilitation? What was your rehabilitation experience like in the hospital? What types of therapy did you have? Where did you have therapy? Can you tell me about your experiences of receiving rehabilitation services **after** you were discharged from the hospital? What types of therapy did you have?	Healthcare services and how they influenced their housing status

	Did they consider your housing status when you were in their programs?/How? If you were in outpatient, did you have to travel to receive your services?/Did you experience any difficulties for that? When you were discharged from all healthcare programs, did you think that you are ready to be in the community? What was your housing status once you were discharged from all healthcare programs? How your interaction with those organizations influenced on your housing status?/ OR How did these barriers influence your housing? Did you visit the emergency room after your discharge again? /If yes what was the reason? (Did you have continue to follow up with them?/Do you still have regular contact with any healthcare provider or doctor?	
Now let us discuss the organizations that provided you with housing services.	How did you learn about them?/How did you reach out to them?	Social services and how they influenced their housing status

	What services did you receive from them? How did you approach the mentioned organizations? Are you currently on a waitlist? If yes for how long? How long were you in waitlist? How do you describe the services you received from those organizations?(Tell me about your positive and negative experiences you had with that organization) How did those services influence your housing status? Did you have a stable house after your interactions with that organization? If not, why? / what did you do after? Did they put you in Contact with anyone else or did they provide resources about other organizations?	
If you wish to add anything to the story we discussed, please feel free to mention it.		

Appendix D- Ethics Approval for Study 3

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

H-03-24-9814 - REG-9814 - Certificat d'approbation éthique / Certificate of Ethics Approval

(English message follows)

Cher/Chère Ramin Banimahdi,

Veuillez trouver ci-joint le certificat d'approbation éthique pour le projet intitulé « How does a community-based rehabilitation organization provide services to patients with traumatic brain injury (TBI) to minimize the risk of homelessness? A Single Qualitative Case Study».

Le certificat est valide jusqu'au : 08-05-2025

I wish you pleasant and fruitful research activities.

The REB strongly recommends that you provide participants with a consent form on official letterhead of your academic unit.

Recherche financée : veuillez faire suivre une copie du certificat au Service de gestion de la recherche.

Si vous avez des questions, n'hésitez pas à communiquer avec le Bureau d'éthique à ethique@uottawa.ca ou en composant le 613-562-5387.

Vous pouvez voir votre demande en vous connectant à votre compte eReviews.

Cordialement,

Germain Zongo
Responsable d'éthique en recherche

Ceci est une réponse automatisée, merci de ne pas répondre à ce courriel.

Dear Ramin Banimahdi,

Please find attached the certificate of ethics approval for your research project titled " How does a community-based rehabilitation organization provide services to patients with traumatic brain injury (TBI) to minimize the risk of homelessness? A Single Qualitative Case Study".

This certificate is valid until: 08-05-2025

I wish you pleasant and fruitful research activities.

The REB strongly recommends that you provide participants with a consent form on official letterhead of your academic unit.

Funded research: A reminder that you must provide a copy of this certificate to Research Management Services.

If you have any questions, please contact the Ethics Office at ethics@uottawa.ca or by telephone at 613-562-5387.

You can view your project at any time by logging into eReviews.

Best regards,

Germain Zongo

550, rue Cumberland, pièce 154
Ottawa (Ontario) K1N 6N5 Canada

550 Cumberland Street, Room 154
Ottawa, Ontario K1N 6N5 Canada

613-562-5387 • 613-562-5338 • ethique@uOttawa.ca / ethics@uOttawa.ca
www.recherche.uottawa.ca/deontologie I www.recherche.uottawa.ca/ethics

Appendix E- Interview Guide for Study 3

Question	Follow up questions	Information needed
Tell me about your organization. What roles do you play in this organization?	What is your mandate? What is the aim of your program? What gaps do you fill?	General information about the organization and the services they provide through their program.
What kind of services do you provide? How do clients access those services? What kind of clients do you provide services to?	Do the clients come to the centre for these services or do you send someone to their house? How would you describe the functional severity of your clients? Can you describe the eligibility criteria related to your program? Can you describe any changes in your eligibility criteria over time? What trends have you observed over time among your patients—for example, in the reasons for injury, their priorities, or housing needs?	General information about the organization and the services they provide through their program.
Tell me about the ways that the symptoms and limitations experienced by patients with TBI influence their interactions with your system (sector)	What are the main symptoms/limitations that influence this interaction? Do these limitations influence the types of services provided to these	The influence of limitations experienced by patients with TBI on their interaction with the system.

Example: Difficulty with communicating their needs, difficulty with accessing services, Mental condition	individuals?/ Do they act as a barrier for receiving the services? What types of services in your sector target these limitations? How do you manage these limitations/symptoms if they act as a barrier in the interactions between patients and your sector? Do you think these limitations/symptoms influence their housing conditions?	
As we talked about patients' housing conditions, let us discuss the way your system considers this issue.	To what extent does the housing status of patients interacting with you matter to your system? (During your assessment do you have special considerations for the housing situation of your patients?) How do you find out about their housing condition? If you realize that a patient is experiencing housing instability, how does that influence the types of services they receive? What types of supports are provided in your system that could directly target the housing status of the patients? (Any intervention	How their system considers patients' housing condition when providing services to them and how they support tenancy.

	or support for their housing?) Do you have links with the organizations that provide housing services to these individuals? (Do you make referrals to any other programs/ organizations?)	
Now let us talk about the internal and external barriers that prevent you and your system from providing proper services to your clients. Specify the meaning of internal and external barriers: Internal: issues within the organization (Provide examples) External: Something outside of the organization, like policies, etc.	What are the reasons for having these barriers? If they said lack of funding, ask about their history of funding, their sources compared with before and now (Any trends?) Do you have these limitations for all patients? (Can you explain if these limitation affect all of the patients or some of them? How? To what extent?) What is your suggestion for solving these barriers? In general(Do you have suggestions for these barriers in general?) What do you wish you could do differently?	The barriers perceived by the participants for providing services to patients.

Appendix F- Additional Documents Relevant to the Case in study 3

F.1. Champlain ABI Coalition Application for ABI Services

Champlain ABI Coalition

Influencing excellence in services and support for persons living with the effects of an acquired brain injury

Champlain ABI Coalition *Application for Services*

The following information **must be included** (as indicated) to avoid any delays in processing your referral:

- ☐ Patient's Address, Phone Number and E-mail
- ☐ Patient's Health Card Number
- ☐ Diagnosis
- ☐ Date of Injury/Event
- ☐ Primary reason for referral
- ☐ Referral Destination *(**only publicly funded services/programs are listed**)* †

☐ **IMPORTANT - The following documentation is required**:

- ☼ Medical notes confirming the diagnosis of brain injury
- ☼ Neuropsychological Assessment Report (*if completed*)
- ☼ Psychiatric consult notes or mental health reports (*if completed*)

☐ Client has been informed that they are responsible for arranging their own transportation to and from the programs and services requested.

☐ Client consented to the submission of this referral.

Please return the completed application form using the attached cover sheet to:

Home and Community Care Support Services Champlain
Attention: Constance Coburn
Champlain ABI System Navigator
4200 Labelle Street, Suite 100
Ottawa, ON K1J 1J8
613-745-5525 ext: 5963

MUST include all relevant brain injury medical and consult reports
The referral will be returned if the above is not included.

Client's E-mail: _____

Client's Name: _____ _____ ☐ male ☐ female
surname *given name(s)*

Health Card #: _____ **Version:** _____ **Date of Birth:** _____/_____/_____
if any *year* *month* *day*

Diagnosis: _____ ☐ Concussion/mTBI

Date of Injury/Event: _____/_____/_____
year *month* *day*

Was this injury/event work-related? ☐ yes

Nature/Type of Injury/Event:
☐ mvc
☐ trauma-other *(specify)* _____
☐ non-trauma *(specify)* _____

Primary Reason for Referral /Goal(s): _____

Services/Support Requested:

❒Community Services / Outreach ❒Adjustment Group ❒Residential
❒Day Program ❒City of Ottawa Day Program ❒Anger Management Group

Home Address: _____

_____

City: _____

Postal Code: _____

Primary Tel Number: ( ) _____

Alternate Tel Number: ( ) _____

Home Living Situation:
☐ alone ☐ with others *(specify)* _____

Accommodation: ☐ homeless ☐ at risk of homelessness
☐ house ☐ apartment building ☐ supportive house
☐ board & care ☐ other _____

_____

Alternate contact person & phone number: _____

_____

Relationship to Patient: SDM ☐ POA ☐ Spouse ☐

Other: _____

Marital Status: _____

Champlain regional ABI roommate registry:

Please check this box if you would like your name to be added to the Champlain regional ABI roommate registry. By checking this box, you are providing consent for your background information to be shared with others seeking a roommate, and you will have access to the registry for your review. Your name and contact information will remain anonymous until you/other find a match and agree to establish contact. Your name can be removed from this list at any time by contacting the ABI navigator.

☐ **Yes, I provide consent to including my background information on the roommate registry.**

Client's Name:_____Health Card No:_____VC:_____

Family Physician:_____ Tel: ( )_____

Address:_____ Fax: ( )_____

City:_____Postal Code: _____

Referral Source: Contact name/position:_____ Phone: ( )_____

Organization:_____ Pager/email: ( )_____

Client is Currently: ☐ at home ☐ other (specify): _____

If client in hospital, please provide: **Date of Admission:**_____**Planned Date of Discharge**:_____

MEDICAL INFORMATION

Previous & Relevant Medical History: _____

Previous history of ABI: ☐ yes ☐ no Describe: _____

Pre-Injury History of Substance Abuse: ☐ yes ☐ no ☐ history not available **Status on admission**: _____

Current Substance Abuse: ☐ yes ☐ no ☐ not known **Substance Abuse Treatment Recommended:** ☐ yes ☐ no

Previous psychiatric history: ☐ yes ☐ no Describe: _____

Current psychiatric status: _____

Allergies

Seizures: ☐ yes ☐ no Dates:_____

Describe: _____

SERVICE INFORMATION ❒ CONSULT NOTES ATTACHED

TREATMENT HISTORY INCLUDING CURRENT SERVICES

Program/Facility/Physician/Therapies	Dates Involved (year/month/day)	Contact Name and Number

TRANSPORTATION: (*Please note: For most programs there are no transportation resources available*)

Client will be travelling: ☐ Independently ☐ With Assistance

Para-Trans: ☐ yes ☐ no **Para #:**_____

Languages Spoken:_____ Interpreter required: ☐ yes ☐ no

SOCIAL INFORMATION

FINANCIAL INFORMATION:

Source:

☐ WSIB ☐ CPP ☐ Auto Insurance ☐ Ontario Works ☐ ODSP ☐ EI ☐ OAS ☐ STD ☐ LTD

☐ Other _____

Status (*initiated, date submitted, approved*): _____

Client's Name:_____ Health Card No:_____ VC:_____

Previous or Current Involvement with the Justice System? ☐ yes ☐ no
Details: _____

FUNCTIONAL INFORMATION

Where possible, please indicate the level of assistance needed in a day: (e.g. *2 hours for bathing, toileting & grooming*)

BASIC PERSONAL ISSUES:	NON-ISSUE	ISSUE	***Comments or Other Issues:***
Eating/drinking:	☐	☐	
Dressing:	☐	☐	
Bathing:	☐	☐	
Toileting *(including continence)*:	☐	☐	
Grooming:	☐	☐	Identified risk(s):
Paresis/paralysis:	☐	☐	
Medication management:	☐	☐	
Pain/headaches:	☐	☐	
Fatigue:	☐	☐	
Sleep disturbances:	☐	☐	

Completed by:
☐ OT ☐ Nurse
☐ PT ☐ Other
☐ SW ☐ SLP
☐ MD

MOBILITY:	NON-ISSUE	ISSUE	***Comments or Other Issues:***
Walking:	☐	☐	
Wheelchair:	☐	☐	
Transfers:	☐	☐	
Outdoor mobility:	☐	☐	Identified risk(s):
Falls/history of falls:	☐	☐	
Stamina:	☐	☐	
Balance/dizziness:	☐	☐	

Completed by:
☐ OT ☐ Nurse
☐ PT ☐ Other
☐ MD

INSTRUMENTAL NEEDS:	NON-ISSUE	ISSUE	***Comments or Other Issues:***
Meal preparation:	☐	☐	
Housekeeping:	☐	☐	
Shopping:	☐	☐	Identified risk(s):
Financial management:	☐	☐	

Completed by:
☐ OT ☐ Nurse
☐ PT ☐ Other
☐ MD

BEHAVIOUR ISSUES:	NON-ISSUE	ISSUE	***Comments or Other Issues:***
Ability to adjust to change:	☐	☐	
Impulse control:	☐	☐	
Mood disorder:	☐	☐	
Thought disorder:	☐	☐	
Wandering:	☐	☐	
Aggressiveness:	☐	☐	Identified risk(s):
Sexually inappropriate:	☐	☐	
Suicidal risk:	☐	☐	
Agitation:	☐	☐	
Easily Angered:	☐	☐	
Frustration Tolerance:	☐	☐	

Completed by:
☐ PT ☐ Other
☐ SW ☐ SLP
☐ MD

COMMUNICATION:	NON-ISSUE	ISSUE	***Comments or Other Issues:***
Hearing:	☐	☐	
Vision:	☐	☐	
Language, comprehension:	☐	☐	
Language, expression:	☐	☐	Identified risk(s):
Pragmatics/conversational skills:	☐	☐	
Swallowing:	☐	☐ *(specify diet, food texture)*	

Completed by:
☐ OT ☐ Nurse
☐ PT ☐ Other
☐ SW ☐ SLP
☐ MD

COGNITIVE STATUS:	NOT TESTED	INTACT	IMPAIRED	***Comments or Other Issues:***
Orientation:	☐	☐	☐	
Motivation/initiation:	☐	☐	☐	
Judgement:	☐	☐	☐	
Memory (short term):	☐	☐	☐	
Memory (long term):	☐	☐	☐	
Attention:	☐	☐	☐	Identified risk(s):
Follow instructions:	☐	☐	☐	
Insight:	☐	☐	☐	
Perception:	☐	☐	☐	

Completed by:
☐ OT ☐ Nurse
☐ PT ☐ Other
☐ SW ☐ SLP

I certify that the above-mentioned information is correct to the best of my knowledge.

Signature:_____ Date: _____

(Applicant/Substitute Decision Maker) (DD/MM/YY)

F.2. Community Service Provider Intake Form

Intake Form

Steps:

- Review client eligibility- review policy for appropriate steps, should there not be supporting documentation.
- Review ABI Coalition application to ensure all client information is current and up to date.

Client Demographics

"Have there been any changes to your address, emergency contact, living situation since you completed the application for service?"

Health

"Have there been any changes in your health, or family physician since completing the application for service?"

Goals

Provide program descriptions and update goals.

Date of Intake:		Services Requested:			
		☐	PSIT	☐	ADP
		☐	Adjustment Group (V)	☐	ADP (V)
		☐	Cognitive Development Group (V)	☐	Anger Management
		☐	Residential	☐	Other (Please Specify)
Name:		Date of Birth:			
Address:		Telephone:			
		Email Address:			
Preferred Form of Communication:	☐ Text	☐	Email	☐	Phone Call
Living Situation:		Accommodations:			
☐	Alone/	☐	Homeless	☐	Supportive House
		☐	At Risk of Homelessness	☐	Board & Care
☐	With Others (specify)	☐	House	☐	Other _____
		☐	Apartment Building		

Verify Emergency contact person & relationship to client:

Medical Information

Health Card Number:
Version:

If Injury was caused by MVA or trauma, have they received compensation from their insurance company / or are they currently receiving treatment funds:

☐WSIB ☐CPP ☐Auto Insurance ☐Ontario Works ☐ODSP☐EI ☐Old Age Security ☐ Short-term Disability ☐Long-term Disability
☐ Other- Please Specify:

Date of Injury:

Any changes to health; mobility, family physician, seizures etc.

Family Physician:

-Previous history of an ABI:
-Previous/ relevant medical history:

-Pre-history of substance abuse:
-Current substance abuse:

-Previous psychiatric history:
-Current psychiatric status:

-History or current seizures:

-Allergies:

Basic Personal Information:
-Eating/ drinking:
-Dressing:
-Bathing:
-Toileting:
-Grooming:
-Paresis/Paralysis:
-Medication:
-Pain/headaches:

-Fatigue:
-Sleep disturbances:

Mobility:
-Walking:
-Wheelchair or walker:
-Transferring:
-Outdoor mobility:
-Falls/history of falls:
-Stamina (physical and mental):
-Balance/dizzy:

Instrumental Needs (meals, housekeeping, shopping and financial):
-Housekeeping:
-Shopping:
-Financial management:
-Meal preparation:

Cooking/Meal-Prep- What about this task is challenging?
-

Behaviour Issues:
-Ability to adjust to change:
-Impulse control:
-Mood disorder(s):
-Thought disorders:
-Wandering:
-Aggressiveness:
-Sexually Inappropriateness:
-Suicidal risk (ideation):
-Agitation:
-Easily angered:
-Frustration tolerance:

Communication:
-Hearing:
-Vision:
-Language comprehension:
-Language expression:
-Pragmatics/ conversational skills:
-Swallowing:

Cognitive Status:
-Motivation/initiation:
-Judgement:
-Memory (short term):
-Memory (Long term):
-Attention:

-Following instructions:
-Insight:
-Perception (time and space):

Supports:

Goals:

Family's wishes/ goals for client:
-

Client's wishes/ goals:
-

Service Information

Services Receiving:

☐Physiotherapy ☐Occupational Therapy ☐Speech Language Pathology ☐Social Work ☐PSW
☐Outpatient Programs
☐Other, please specify:

Transportation, if using Para-Transpo please provide number:

Social Information

Involvement in the Justice System, if yes please provide details:

F.3. Executive Summary of the Homelessness Prevention Program

1.0 EXECUTIVE SUMMARY

[redacted] received a one year **Seed Grant** from the Ontario Trillium Foundation to pilot a Homelessness Prevention Project. This project was modeled on a project that had already been implemented in Toronto.

There is a strong correlation between Acquired Brain Injury (ABI) and homelessness. Research has shown that approximately 50% of the homeless population have some form of ABI, and 70% of these individuals became homeless after their injury. Because of their condition, these individuals are at greater risk of homelessness, and face additional challenges to accessing services to prevent homelesssness. The main goal of the project is to provide a range of specific supports to this population that will enable them to acquire and maintain stable housing.

Through the OTF funding a Homelessness Prevention Coordinator was hired for one year (ending March 31, 2022). The Program served 20 clients during this period. At the time of referral all of the clients were either homeless or at risk of homelessness. The clients for this program were complex, experiencing a wide range of challenges that would make it difficult for them to find and maintain housing. For example, 100% of the clients experienced challenges with executive/cognitive functions (which makes it difficult to schedule, budget and organize); 56% had substance abuse issues; 56% experienced food insecurity; all were managing on very limited incomes; and one-third of clients had no other social support.

Many of the clients were able to live semi-independently, with some support. The problem is that many programs and service providers are not aware of the specific challenges faced by people with ABIs, so that non-participation in programs in often interpreted as a lack of interest or defiance, rather than behaviour associated with the condition, and clients are sometimes dropped from these programs.

The Homelessness Prevention Program had a positive impact on the clients' housing situation. As a result of the HPC's work, 30% of the clients were able to move into a stable housing situation, and a number of others were able to enter into transitional arrangements. Many were able to also increase their skills and knowledge necessary to live independently (e.g. in areas such as shopping, food preparation and budgeting), and were able to participate in programs and access care.

The HPC played three important roles in supporting clients:

- Direct client support
- Case management
- Education/support to other service providers

The Homelessness Prevention Program seemed to fill a unique need experienced by persons with ABI, and was able to help many clients to stabilize their housing situation and find support for some of the complex challenges they were facing. The open question is what would have happened to these clients if this program had not been in place. It seems likely that a number of the clients would have lost their housing and either become homeless or moved into the shelter system. It is uncertain how well existing programs might have addressed the various needs

experienced by the clients, except to say that we know such programs already experience challenges in meeting their needs.