

**EXPLORING THE IMPACTS OF HOUSING DISCRIMINATION  
ON SYMPTOMS OF POST-TRAUMATIC STRESS DISORDER  
AMONG INDIGENOUS UNIVERSITY STUDENTS**

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A Thesis  
Submitted to the School of Graduate Studies  
of the University of Lethbridge  
in Partial Fulfilment of the  
Requirements for the Degree

**MASTER OF SCIENCE**

Faculty of Health Sciences  
University of Lethbridge  
LETHBRIDGE, ALBERTA, CANADA

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Date of Defence: September 20<sup>th</sup> 2018

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## **DEDICATION**

To the students who participated in this study. Your participation has shed light on an important issue, and without you, this thesis would not exist.

To the Faculty of Health Sciences, and program peers. Thank you for supporting every process of this degree, which lead to this thesis. To Auburn, for her willingness to support me on short timelines, at very critical stages of this thesis. To Chloe, my program peer and my friend, for her never-ending support.

Finally, I am extremely thankful for the love and support of my family, which I feel even from another city. I would especially like to thank my mom, Carol, who has borne the brunt of my stress and encouraged me throughout. You have taught me the work ethic and self-discipline that was needed to complete this thesis.

## **ABSTRACT**

Racial discrimination has been associated with a number of adverse health outcomes. There is limited information regarding racially-motivated housing discrimination and health. This thesis included two studies. **Study 1** was a scoping review that examined the impacts of housing discrimination on physical and mental health, and educational pursuits across various ethnic minorities. **Study 2** examined the impacts of housing discrimination on PTSD symptomology and university stress among Canadian Indigenous students. Results indicate racially-motivated housing discrimination was associated with reduced *physical health* outcomes (Study 1); and reduced *mental health* including increased depression (Study 1) and PTSD symptomology (Study 2). Racially motivated housing discrimination was also associated qualitatively with reduced motivation at university (Study 1), and quantitatively with increased *perceptions of stress while at university* (Study 2). The results highlight the need for greater policies and program supports to address this problem.

## **ACKNOWLEDGEMENTS**

This thesis would not have been possible without the endless support and encouragement I received from my supervisor, Cheryl Currie. Thank you for the significant amount of time and effort you put into making my work better, and for teaching me that good research is messy before it is clear. I could not have asked for a better supervisor.

My committee members, Marcia Rich and Tracy Oosterbroek, also played an important role in this process. Thank you both for supporting this inter-disciplinary research and for your thoughtful insights and feedback at crucial stages of this thesis.

I would also like to thank David Scott, Health Sciences Librarian at the University of Lethbridge, who spent many hours supporting the search strategy for chapter two of this thesis.

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## LIST OF ABBREVIATIONS

<b>CIHR</b>	Canadian Institute of Health Research
<b>EOD</b>	Experiences of Discrimination Scale
<b>PCL-C</b>	Post-Traumatic Stress Disorder Checklist- Civilian Version
<b>PTSD</b>	Post-Traumatic Stress Disorder
<b>DSM</b>	Diagnostic and Statistical Manual of Mental Disorders
<b>CPTSD</b>	Complex Post-Traumatic Stress Disorder
<b>SAM</b>	Sympathetic-Adrenal- Medullary Axis
<b>HPA</b>	Hypothalamic Pituitary Adrenal
<b>SACL</b>	Stress-Arousal Checklist

## **CHAPTER ONE**

### **INTRODUCTION**

Post-secondary education is an important determinant of health for Indigenous Canadians.<sup>1</sup> Education impacts health by increasing socioeconomic status, expanding health literacy, and improving quality of life.<sup>2</sup> Currently, it is estimated that half of all Indigenous students leave school before completing their degree.<sup>3</sup> There is a gap in our knowledge about why this is occurring. Research suggests Indigenous university students may experience high levels of discrimination across many areas of their life while working to complete their studies, including in their efforts to find and maintain stable housing.<sup>4</sup> The purpose of this thesis was to examine how housing discrimination impacts general physical and mental health, symptoms of post-traumatic stress disorder (PTSD), and stress among Indigenous university students.

#### **Racial Discrimination**

Racial discrimination is negative treatment based on racial stereotypes that occurs through individuals and institutions.<sup>5</sup> It results in avoidable and unjust inequalities in power, resources, and opportunities across racial or ethnic groups.<sup>6</sup> There are five pathways through which discrimination influences health. The first is restricted access to goods and social resources such as employment, housing and education. The second is negative emotional/cognitive and psychological processes. The third is added wear and tear on the body due to chronic stress and physiological processes. The fourth is engagement in unhealthy coping mechanisms such as substance use. The fifth is racial violence, which results in physical injuries and assault. This thesis examines how racial discrimination impacts health through the first pathway - access to goods and services –

with a specific focus on how racism may restrict access to housing.

### **Housing Discrimination**

Housing discrimination is any practice that creates unequal opportunities to find and maintain housing among specific populations.<sup>7</sup> Research indicates housing discrimination is associated with significant levels of stress.<sup>8</sup> Comparative literature from the 1990s suggests Indigenous applicants are directed to the parts of a city with lower quality housing, and are provided with less assistance from housing agencies compared to non-Indigenous housing consumers, however little research has been published since that time on this issue.<sup>9</sup> Indigenous students typically require housing in an urban centre while completing university, which exposes them to housing discrimination and the stress associated with it.

### **Stress and Housing Discrimination**

Stress is defined as the nonspecific response of the body to any demand made upon it, and can be adaptive in small quantities.<sup>10</sup> Stress is often perceived as negative but our bodies need a certain level of stress to respond to changing life circumstances.<sup>10</sup> However, humans cannot sustain high levels of stress due to external circumstances. Selye refers to prolonged stress as a *state of exhaustion*, which compromises the immune system and increases risk of illness.<sup>11</sup> Stress-related illnesses include PTSD, depression, anxiety disorders, increased risk of viral infection, and diabetes. Stress associated with racial discrimination has been shown to impact a multitude of mental health outcomes, as well as hypertension, heart disease, diabetes, and cancer.<sup>12,13</sup>

Environmental events that produce stress are called stressors, and can be both psychosocial and biogenetic.<sup>14</sup> Psychosocial stressors are environmental events that stimulate the biogenetic stress response. An individual can reduce the impacts of such stressors on their wellbeing when they perceive the environmental agent to be controllable.<sup>15</sup> It may be argued that housing discrimination is a stressor that is difficult to control by university students, which may in turn, magnify its impacts on the biogenetic stress response.<sup>16</sup>

This idea is supported by the theory of *ontological security* (Giddens, 1990), which is defined as *a sense of confidence and trust in the world as it appears to be*.<sup>17</sup> Giddens argues that ontological security is a deep psychological need for individuals in all societies and that most people hold a sense of ontological security as part of their self-identity. This theory has been used in existing research to explore racism and housing issues.<sup>18,19</sup> A fundamental component of achieving ontological security is housing.<sup>19</sup> Expert-recommendation for achieving this is through home-ownership, so that housing is a secure component of life and cannot be easily compromised.<sup>20</sup> Racially-motivated housing discrimination may prevent an individual from attaining housing, thus compromising the ability to achieve a sense of ontological security.

The theory of ontological security supports the notion that environmental stressors have a psychological impact on the body.<sup>21</sup> Ontological security has been found to impact mental health outcomes like anxiety and overall well-being.<sup>19</sup> Research demonstrates that nearly all individuals subconsciously either fear or lack a certain degree of ontological security and that this fear may exacerbate existing mental health concerns.<sup>21</sup> This theory suggests that experiencing housing discrimination may impact the ability to achieve ontological security and compromise overall mental health and well-being.

The purpose of this thesis is to better understand the extent to which housing discrimination may function as an environmental stressor that influences the mental wellbeing and university success of Indigenous students. I will focus specifically on the impacts of housing discrimination on PTSD symptoms among students. There is evidence that racial discrimination across a variety of life situations is associated with symptoms of PTSD.<sup>4,22</sup> This thesis is the first study to examine how *housing discrimination* specifically may influence PTSD symptoms.

### **Housing Discrimination and University Success**

The field of public health recognizes the need to study both upstream and downstream determinants of health. Upstream determinants of health include social-structural influences such as education.<sup>23</sup> Post-secondary education impacts health by increasing one's ability to compete for employment in the labour force. Employment rates between Indigenous and non-Indigenous Canadians are comparable once they have completed a post-secondary degree.<sup>24</sup> Therefore it is important to promote education and support university success among Indigenous students.

For many Indigenous students, completion of post-secondary training is dependent on the ability to find and maintain housing.<sup>25,26</sup> Racial discrimination related to housing may serve to block a student's ability to achieve post-secondary training.

### **Possible Solutions**

Research that goes beyond looking for an association between variables is needed to produce impactful results that can be disseminated into practice. This thesis also examines what can be done to address housing discrimination by asking students who have had these experiences for their thoughts on how to address them. Input from

participants with lived experiences of housing discrimination provides recommendations for change that can be used to inform local university housing policy and municipal housing policy across small urban centers. Currently, only one agency in Canada, located in Toronto, is dedicated to providing solutions to housing discrimination, suggesting more work is needed.<sup>27</sup> Evidence from this thesis may help to inform these efforts.

## **THESIS OVERVIEW**

This thesis was written in paper format. Chapter two and three include its own introduction, methods, results, and discussion.

### **Chapter Two**

The purpose of chapter two was to examine existing research on how housing discrimination impacts health using scoping review methodology. This chapter searched the literature to answer the following 3 questions:

1. Does housing discrimination impact physical health;
2. Does housing discrimination impact mental health; and
3. How does housing discrimination impact educational attainment among minority populations?

This scoping review followed the 6-step analytic scoping review framework outlined by Arskey and O'Malley: identifying the research question, identifying relevant studies, study selection, charting the data, collating, summarizing, and reporting the results, and peer review.<sup>28</sup> A comprehensive search strategy was developed for this chapter with a health sciences librarian. All academic search citations were imported into Endnote, and duplicate citations were removed. The results of this search produced 1264 articles; from which 4 met the search inclusion criteria and were included in the review.

### **Chapter Three**

The purpose of chapter three was to examine associations between racially-motivated housing discrimination and PTSD symptomology and stress levels while attending university. This chapter examined the following four questions:

1. What are the frequency and correlates of housing discrimination experienced by Indigenous and non-Indigenous university students?
2. What are the experiences of Indigenous university students in obtaining or maintaining housing in a small urban centre?
3. Is racially-motivated housing discrimination associated with PTSD symptomology and perceptions of university stress among Indigenous students?
4. What suggestions do Indigenous university students have to address racially-motivated housing discrimination?

Data for chapter three of this thesis is cross-sectional, derived from a Canadian Institute of Health Research (CIHR)-funded study led by Dr. Cheryl Currie at the University of Lethbridge. The project received ethics approval from the Human Subject Research Committee at the University of Lethbridge. Data collection began in September 2015, and continued over 4 academic terms, ending in April 2017. Post-secondary students 18 years and older who identified as First Nations, Métis, Inuit, or Indigenous were recruited using a poster displayed in various places across campus, and shared through a campus list serve for Indigenous students. Interested students were invited to contact a research assistant by email, phone or text to learn more and arrange a time to participate.

Data were collected on campus through in-person surveys. Written consent was obtained from all participants. A research assistant remained in the room for the duration

of survey working at another desk, to answer potential questions. Given students were asked to answer question that were potentially discomfoting (e.g., about experiences of racial discrimination), they were given information about psychological and cultural resources they could access upon completion of the session. Students were given an honorarium of \$50 and \$25 for participating in the survey and interview components of the study; respectively. All data were stored in a locked office on campus on a password-protected computer.

### ***Exposure Variable***

Housing discrimination was operationalized by one question: *In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting housing because of your race, ethnicity or colour?* If participants had been exposed to housing discrimination, they were then asked: *How many times did this occur in the past year?* Results were input as *once, two or three times, and four or more times*. This question is one of nine items being measured through the Experiences of Discrimination (EOD) scale.<sup>29</sup> Please see appendix A for operationalizing of housing discrimination and outcome variables.

### ***Outcome Variables***

1. **Experience of Stress while attending university.** This variable was operationalized by the following question: *What has the experience at university been like for you in the past year?* Results were input as *very stressful, somewhat stressful, not very stressful, and not at all stressful*.
2. **Symptoms of PTSD.** PTSD symptomology was assessed using the PTSD Checklist (PCL) Civilian Version. The PCL is a 17-item self-report measure that reflects the DSMIV symptoms of PTSD. The civilian version of this measure

simplifies assessment based on multiple traumas because symptom endorsements are not attributed to a specific event.<sup>30</sup> The measure asked participants about symptoms occurring in the past month. Response options were: *1 = not at all, 2 = a little bit, 3 = moderately, 4 = quite a bit, 5 = extremely.*<sup>31</sup> A total symptom severity score (range = 17-85) was obtained by summing all 17 items.

### ***Qualitative Questions***

Participants were asked two open-ended questions to build on our understanding of these experiences and what can be done to reduce them: *Is there anything you would like to share about discrimination experienced getting housing? What can be done to reduce the challenges Indigenous university students experience finding or maintaining housing?* Participants wrote open-ended responses to these questions based on their experiences.

### ***Data Analysis***

The first research question addressed was analyzed through descriptive statistics to summarize what students in the sample shared. The second research question was examined through a set of regression models. The unadjusted and adjusted model is reported in chapter three. The adjusted model controlled for six confounding variables: age, gender, income group, Indigenous group, living with a romantic partner, and having children. All participants in the sample were post-secondary students, which is a more homogenous than a general sample of Indigenous adults. Thus control for a limited number of variables is appropriate. Analysis was completed using IBM SPSS statistical software 24.0.<sup>32</sup>

A Qualitative data analysis was used to answer the final two research questions, using open-ended data from participants. A thematic analysis was completed using Nvivo Software 11.0.<sup>33</sup>

### **Chapter Three**

The final chapter of this thesis will discuss similarities and contrasts between findings of chapter two and three. It will explore these findings in the context of other publishes literature and make suggestions for further research in this field.

#### ***Significance of Research***

This thesis was designed to expand our knowledge of the challenges that Indigenous students experience related to housing. Results of this research include an improved understanding of the impacts of housing discrimination on Indigenous university students, and ways forward to address this problem. I plan to disseminate conclusions from this research to inform university housing policy and municipal housing policy in Lethbridge, Alberta.

## **CHAPTER 2: SCOPING REVIEW**

### **ABSTRACT**

**Introduction:** Research suggests racial discrimination impacts both health and educational attainment. Little is known about the ways in which racially-motivated housing discrimination impacts these outcomes. The purpose of this chapter was to systematically review the literature to determine the extent to which racially-motivated housing discrimination impacts: (1) physical health; (2) mental health; and (3) educational attainment.

**Methods:** This scoping review study used the methodological steps laid out by Arskey and O Malley (2005), including; identifying the research question, identifying relevant studies, study selection, charting the data, collating, summarizing, and reporting the results, and peer review. Two comprehensive searches were completed.

**Results:** A total of four studies published between 2004 and 2017 were selected for this review. Findings highlight small but significant associations between housing discrimination and physical and mental health generally, as well as specific increases in chronic disease, depression, and reduced motivation to engage in post-secondary education.

**Conclusions:** Consistent with the impacts of other forms of racial discrimination, the limited research available suggests housing-specific racial discrimination impacts both mental and physical health, as well as educational pursuits. Studies included in this review highlight the role of stress pathways, and neighborhood features in order to support residential security and access to post-secondary education. More research is needed to address the gaps in the literature that were identified in this review.

## INTRODUCTION

Racial discrimination has been shown to have profound impacts on health.<sup>34</sup> This chapter examines how *racially-motivated housing discrimination* impacts the well-being of populations who experience it. The impact of housing discrimination is usually studied by grouping it with the other forms of discrimination minorities face (e.g., employment discrimination, healthcare discrimination), and examining how overall levels of discrimination (with housing discrimination serving as one component) impact health.<sup>35</sup> Such studies have found that ethnic minorities are subject to racially-motivated housing discrimination, along with other forms of discrimination across the globe, and that these combined experiences have profound impacts on mental and physical health.<sup>12</sup> However, the ways in which housing discrimination, on its own, may impact wellbeing is not well synthesized in the literature. The purpose of this chapter is to summarize what we know about *how* housing discrimination impacts health, and an important upstream determinant of health – the pursuit of education, using scoping review methodology.

Racially-motivated housing discrimination occurs when an individual is denied housing of their choice due to race, ethnicity, or skin color.<sup>36</sup> Housing discrimination may also be motivated by gender, age, income, disability, or parental status; and most likely, a combination of these social identities. Housing discrimination can be obvious or subtle.<sup>37</sup> It can be exclusionary discrimination, which is any act that prohibits a population from attaining the housing of their choosing; or non-exclusionary, which is any action occurring within an existing housing agreement.<sup>16</sup>

Housing discrimination research began with Yinger's work in 1995, which reviewed the causes and socioeconomic consequences of this experience in the United States.<sup>8</sup> Yinger's findings highlight housing discrimination as a contributing factor to the

socioeconomic gap, education gap, and racial segregation observed in the US. A handful of studies have worked to build on Yinger's work by examining the causes and outcomes of housing discrimination.<sup>12,38-40</sup> This chapter will review this literature.

### **Health Outcomes**

Mental health outcomes are the most commonly reported result of racial discrimination, suggesting that mental health concerns such as anxiety, depression, negative self-esteem and psychological distress may similarly be impacted by housing discrimination.<sup>34</sup> In turn, psychological distress and anxiety often lead to psychiatric concerns like post-traumatic stress disorder.<sup>41</sup> Evidence also supports racial discrimination as a key determinant of physical health issues such as hypertension and chronic disease.<sup>13</sup> Thus, this chapter will review racially-motivated housing discrimination as a risk factor for poor physical and mental health outcomes among ethnic minorities.

### **Educational Pursuits**

Education is an upstream determinant of health that improves health literacy, increases the ability to grow socio-economically, and increases personal control of health and wellbeing.<sup>23</sup> This is an important predictor of health for minority populations. For example, Indigenous Canadians are significantly less likely to complete a post-secondary degree.<sup>2</sup> Being forced to find housing in low income/quality urban centres due to discrimination limits the number and quality of educational institutions that can be accessed.<sup>8</sup> Experts have also argued that forcing people into low-quality housing may negatively impact the ability to complete university.<sup>42</sup> Thus, this chapter reviews existing literature examining the link between housing discrimination and education.

In summary, this chapter searched the literature to answer the following three questions:

1. Does housing discrimination impact physical health;
2. Does housing discrimination impact mental health; and
3. How does housing discrimination impact educational attainment among minority populations?

## **METHODS**

### **Search Strategy**

This scoping review follows the analytic framework outlined by Arskey and O'Malley.<sup>28</sup> The framework includes the following six steps: identifying the research question, identifying relevant studies, study selection, charting the data, collating, summarizing, and reporting the results, and peer review.<sup>28</sup> A comprehensive search strategy was developed for this chapter with a health sciences librarian. The first search and review did not produce comprehensive results and was re-done with different search terms and alternative databases. Scoping review methodology has an advantage over systematic review methodology, as the former allows for the adjustment of search criteria if decisions are carefully documented. In the present scoping review, two reviewers independently screened the studies found in the search by title, abstract, and full-text. Quantitative and qualitative articles published between 2004 and 2017 were included in this study. This time frame was selected in an effort to capture depth of work on housing discrimination, which primarily began around 1995, but to also ensure that the results would still be relevant.<sup>8</sup> All academic search citations were imported into Endnote, and duplicate citations were removed.

Table 1 demonstrates key search terms, and inclusion/exclusion criteria. Medline, PsychInfo, SocIndex, National Collaborating Centre for Aboriginal Health, and Bibliography of Native American Studies were searched for academic literature. Health Canada and the Public Health Agency of Canada were reviewed for grey literature and no articles were included for this review. The terms Indigenous (to include First Nations, Inuit and Metis) and Hous\* were the primary search terms with the goal of focusing the search to a specific population and topic. Mental health, stress, education, and discrimination were search terms used in combination with the two primary search terms. The results of this search produced 1264 articles.

**Table 1.** Search One Criteria

	Inclusion	Exclusion
<b>Keywords</b>	Hous*, Aboriginal/Indigenous (Metis, Inuit, & First Nations), mental health, discrimination, & education	Health education
<b>Age Groups</b>	18+	< 18
<b>Populations</b>	Urban Indigenous populations (Canada/US/Australia)	Non-Indigenous, non-urban populations
<b>Years searched</b>	2004-2016	< 2004
<b>Study types</b>	Qualitative & quantitative	Case reports
<b>Literature</b>	Academic literature, government reports & textbooks	Magazines

Limiting the search strategy to include only Indigenous participants did not produce results specifically focused on housing discrimination and health; thus a second search was completed, see Table 2. The second search included an additional six

academic databases (Web of Science, Medline, PsychInfo, SocIndex, Bibliography of Native American Studies, and Education Complete) using the search terms “housing discrimination” in combination with “mental health” and education. Google scholar was searched for academic literature, and the first 100 hits were reviewed as this database sorts based on relevance of search terms. Distiller software was used to search/sort and extract data from the academic databases search. This search produced results that were focused on racial discrimination, but not specifically housing, and no results from this search were included.

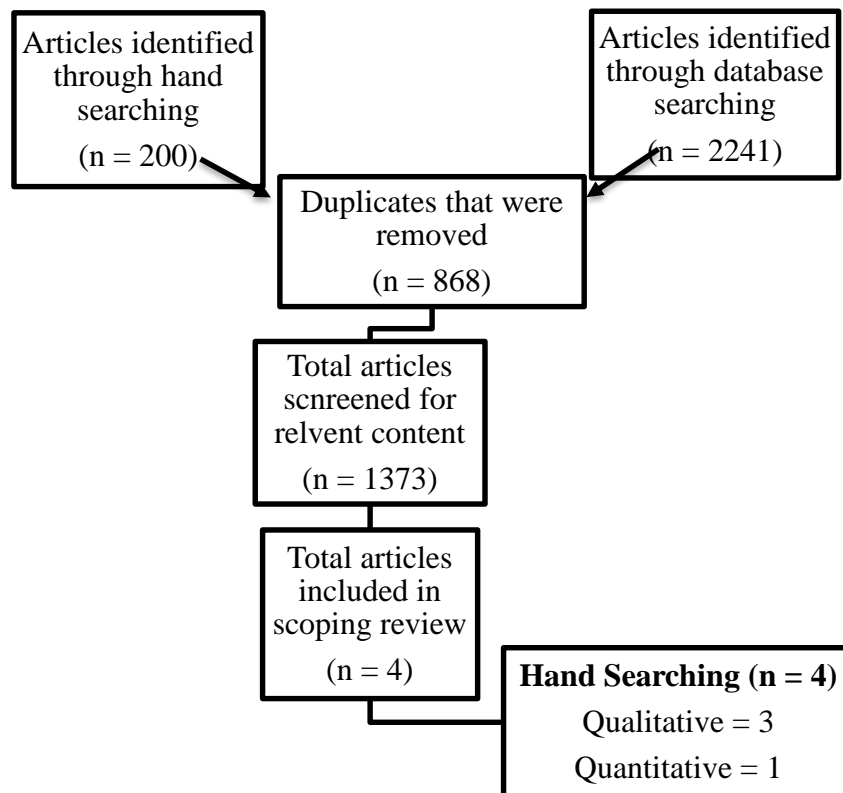
**Table 2.** Search Two Criteria

	Inclusion	Exclusion
<b>Keywords</b>	“Housing discrimination” and “mental health” and education	Health education, impacts of housing discrimination outside of health and educational pursuits
<b>Age Groups</b>	18+	< 18
<b>Populations</b>	Minority populations in urbanized communities (Canada/United States/Australia)	Populations outside of urbanized communities
<b>Years searched</b>	2004-2017	< 2004
<b>Study types</b>	Qualitative & quantitative	n/a
<b>Literature</b>	Academic literature, government reports & textbooks	Magazines

In the end, four articles from hand-searching were selected for this review. The articles that were selected only examined discrimination in the form of housing, which was the key limiting factor, as majority of the results were examining more than one form of discrimination.

## Data Extraction and Coding

Articles were reviewed and data were extracted by two reviewers. An excel spreadsheet was developed for data extraction purposes. Reviewers extracted the following data from each article: study year, participant data (ethnicity, age, gender, etc.), exposure measures (housing discrimination), outcome measures (educational pursuits and mental health), and relation to research questions. Data extraction was completed by author, coding each article as *1 = yes*, and *2 = no*, based on research questions. Given this was a scoping review, and not a systematic review; a quality appraisal of articles and a publication bias analysis was not completed. Figure 1 summarizes the results of the article search.



**Figure 1.** Search flow diagram from Search One and Search Two

## **RESULTS**

Four articles met the inclusion criteria for this review. As shown in Table 3, two were published between 2004 and 2008, and two between 2014 and 2017. Two articles were from academic journals; one was a thesis, and one a book chapter. Three articles included original research, while the book chapter discussed the field more generally. One article examined the impacts of housing discrimination on health, one focused on educational impacts, and two examined both outcomes. Among the three articles that were based on original research, one used quantitative methods and two qualitative methods.<sup>12,40,42,43</sup>

**Table 3.** Summary of Studies Selected for Review

Study Characteristics	No. of articles reporting	Article
<b>Year</b>		
2004-2008	2	Carr & Kutty (2008), Cohen (2004)
2014-2017	2	Nightingale (2016), Yang et al. (2016)
<b>Publication Type</b>		
Journal article	2	Yang et al. (2016), Cohen (2004)
Thesis dissertation	1	Nightingale (2016)
Book Chapter	1	Carr & Kutty (2008)
<b>Focus</b>		
Health	1	Yang et al. (2016)
Educational impacts	1	Carr & Kutty (2008)
Both	2	Cohen (2004), Nightingale (2016)
<b>Methodology</b>		
Quantitative	1	Yang et al. (2016)
Qualitative	2	Cohen (2004), Nightingale (2016)
Other (Book or report)	1	Carr & Kutty (2008)

The three articles based on original research reported sample sizes ranging from 14 to 9842 participants. The qualitative studies naturally had lower sample sizes in keeping with this methodology. Within studies that reported male/female ratios ( $n = 3$ ), there were mixed ratios between more female/male participants, but overall more females. Most studies (75%) addressed more than one racial or ethnic group. The most common combination was African Americans/Latinos. Nightingale's thesis (2016) included Indigenous, Asian, East Indian, Desi, African American, Caucasian, Guyanese, and Caribbean.<sup>43</sup> Nightingale's thesis followed a general qualitative methodology, informed by critical race theory. It began with collecting data through focus groups, and then moved to individual interviews. Indigenous populations were studied alone in one qualitative study by Cohen (2004).<sup>40</sup> Within studies that reported participants' level of

post-secondary education ( $n = 3$ ), not all reported whether they were current students or if they had graduated with a post-secondary degree or diploma. A minimum of 40% of the sample had some post-secondary education to be classified as “yes” to participant post-secondary. See Table 4 for a breakdown of participant characteristics by article.

**Table 4.** Participant Characteristics Table

Study characteristics	No. of articles reporting	Article
<b>Sample Size</b>		
10-100	1	Nightingale (2016)
100-500	1	Cohen (2004)
500+	1	Yang et al (2016)
NA	1	Carr & Kutty (2008)
<b>Ages Examined</b>		
18-67 years	3	Nightingale (2016), Cohen (2004), Yang et al (2016)
N/A	1	Carr & Kutty (2008)
<b>Gender</b>		
Both	3	Nightingale (2016), Cohen (2004), Yang et al (2016)
NA	1	Carr & Kutty (2008)
<b>Racial Groups</b>		
Indigenous only	1	Cohen (2004)
Multiple ethnicities	3	Carr & Kutty (2008), Nightingale (2016), Yang et al. (2016)
<b>Post-Secondary Education</b>		
Yes	3	Nightingale (2016), Cohen (2004), Yang et al (2016)
NA	1	Carr & Kutty (2008)

\*Not applicable (NA) was used to describe the book chapter by Carr (2008) as these authors discuss the issue of housing discrimination, but did not conduct a specific study related to it.

## Study Samples and Measurement of Housing Discrimination

Yang and colleagues (2016) examined 9842 adults in 830 neighbourhoods across the United States to examine the impacts of racially-motivated housing discrimination on self-rated health and chronic disease.<sup>12</sup> Data from the Public Health Management Corporation's Household Survey was used for this study.<sup>44</sup> The sample included Caucasian, Latino, and African American populations. Self-reported health was measured as "excellent", "good", "fair", or "poor", and re-coded into a dichotomous variable of "good" and "poor. Chronic disease was measured by asking participants if a physician had diagnosed them with a chronic disease and coded as "yes" or "no." They used the housing-related item on the Experiences of Discrimination Scale (EOD) to measure this construct for this study.<sup>12,29</sup> The specific question asked was: "*In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting housing because of your race, ethnicity or colour?*"

The second study selected for this review, a thesis by Nightingale (2016), had a sample of 14 post-secondary students from multiple ethnic backgrounds who were recruited on campus at Brock University with posters.<sup>43</sup> Housing discrimination was examined through the following interview questions: *Do you have any stories that you can share of other Brock University students experiencing forms of discrimination while searching for or living in off-campus housing? (e.g., locating housing possibilities, meeting potential landlords or roommates, finalizing a rental or lease agreement, or ongoing relations with other tenants/roommates, neighbors, and landlords.)*<sup>43</sup> *More specifically, do you have stories of racial discrimination? Do you feel that your racialized identity influenced your housing search in any way? Why or why not?*

The qualitative study by Cohen (2004) examined housing discrimination among a sample of Indigenous Canadians in two urban centers.<sup>40</sup> This study is an excerpt from “Volume 1: Setting the Agenda for Change” in the Aboriginal Policy Research Series. A non-random purposive sample of adults, living in Winnipeg ( $N = 300$ ) and Thompson ( $N = 100$ ) Manitoba, were selected for this study. Each participant completed a two-hour semi-structured interview, to discuss experiences and outcomes of housing discrimination. In Cohen’s study, housing discrimination was examined by asking participants the number of times they experienced housing discrimination in the last five years, who was demonstrating the discrimination, most common forms, and negative effects produced by housing discrimination.<sup>40</sup> No specific tool was reported.<sup>40</sup>

The final paper selected for this review by Carr & Kutty (2008) was a book chapter that speculated on the reasons for and impacts of housing discrimination. This chapter did not summarize specific research studies, nor did the authors conduct a study, thus the ways in which housing discrimination was measured by this author are not summarized in the results sections of this chapter.<sup>42</sup> The chapter was retained as part of this search as it did an excellent job of examining housing discrimination through the lens of residential mobility and segregation, which will be described in the discussion section of this chapter.<sup>42</sup>

### ***The Impacts of Housing Discrimination on Physical Health***

Yang and colleagues (2016) found that 5% of the overall sample of 9842 adults reported perceived housing discrimination.<sup>12</sup> When unadjusted for neighbourhood features findings indicate housing discrimination was associated with lower self-reported health ( $t = 0.16, p = 0.001$ ) and increased chronic disease ( $t = 0.14, p = 0.001$ ). A multi-level model was run to examine the impact of neighbourhood features on these

associations. Yang et al. found adjustment for neighbourhood features in statistical models strengthened the association between housing discrimination and lower self-reported health (e.g., neighbourhood housing value, % non-Hispanic Black residents, and % single-parent households with children in neighbourhood), suggesting the association between housing discrimination and health was being partially masked by the influence of these neighbourhood features. Alternatively, participants who resided in lower-socioeconomic neighbourhoods with higher % of Hispanic/Black populations did not experience the same increase in poor health outcomes.

Results from the study by Cohen (2004) which examined housing discrimination among Indigenous adults found more than half of the Winnipeg sample and two-thirds (67%) of the Thompson sample were denied housing in the past 5 years (i.e., between 1999-2003).<sup>40</sup> The most commonly reported form of housing discrimination was from a landlord/property manager. Cohen used convenience rather than random samples. Combined with the age of this study, these estimates cannot be taken as reliable estimates of how frequently Indigenous people experience housing discrimination in these cities today, but do provide comparative figures for future research. On average, 22% of participants in both cities qualitatively reported that housing discrimination had a negative effect on their health generally. The study did not separate or compare impacts on mental vs. physical health.. No direct quotes from participants were reported but results indicated that some participants attributed their poor health to being forced to live in a low quality home, as a result of housing discrimination.

### ***The Impacts of Housing Discrimination on Mental Health***

Yang et al. (2016) examined the mental health impacts of housing discrimination using their large sample of Caucasian Latino and African American adults. They found

housing discrimination was significantly associated with depression among adults ( $b = 0.11, p = 0.001$ ).<sup>12</sup> Interestingly, this effect was exacerbated when ethnic minorities experienced housing discrimination in socioeconomically affluent neighborhoods.<sup>12</sup>

The Nightingale (2016) thesis study attempted to recruit students with lived experience of housing discrimination; thus it is not surprising that most participants (79%) reported this experience. Most reported their experience of housing discrimination to be discouraging. Students reported psychological stress due to the lengthy and frustrating search for housing, which also led to financial stress.

*“So, when I did go to look at different places, I was finding a very difficult time to find a place. And I thought, oh no. My whole year is going to be like ... I won't be able to go. So, I just kept diligent, I kept on looking at different places. I think I went to see at least seven different places.”*(Indigenous female)

Students reported feelings of hopelessness and abuse of power between themselves and landlords.<sup>43</sup> Students stated that Niagara (location of research) was not racially diverse and they became hypersensitive to race while living there. They felt that completing the surveys made them realize how bad their experiences were which was even more frustrating and uncomfortable.

*“I think, I guess, in terms of my impression about that, is just that ... it's a really unfortunate situation. And I don't like being aware of how prevalent that is. Especially when ... I like being oblivious to the fact that I'm a different skin colour than other people. I don't like to have to think that, oh, it's because I'm African that I'm being treated differently, or I'm being neglected, like, the specific opportunities that someone else could get, and so that's frustrating.”* (Nigerian female)

**Table 5.** Outcomes of Housing Discrimination Examined in Articles Selected

Outcomes	No. articles reporting	Articles
<b>Mental Health</b>		
General	1	Nightingale (2016)
Depression	1	Yang et al. (2016)
<b>Physical Health Outcomes</b>		
General	1	Cohen (2004)
Chronic Disease	1	Yang et al. (2016)
<b>Educational Pursuits</b>		
Yes	3	Cohen (2004), Nightingale (2016), Carr & Kutty (2008)
No	1	Yang et al. (2016)

### *The Impacts of Housing Discrimination and Education*

Nightingale (2016) qualitatively reported that the number of denied housing attempts made them fear that they would not be able to attend university.<sup>43</sup> First and second year students reported more discrimination in housing, creating a more difficult start to university. Students identified certain areas of the city as “not ethnic friendly” and would avoid renting in these areas, even if the home was closer to their school.<sup>43</sup> Students reported that they were less excited to start university than before experiencing housing discrimination and overall less motivated for their academic experiences ahead.<sup>43</sup> Participants also reported that the university could provide educational resources to students regarding their tenancy rights in an effort to combat housing discrimination.

The qualitative study by Cohen (2004) found that approximately 15% of the sample reported that housing discrimination had a negative impact on education.<sup>40</sup>

Demographic results showed that nearly 35% of participants had completed some post-secondary education, but were not asked to specify why housing discrimination had a negative impact on education. Length of time to find housing (44%) and frequency of moves (36%) were the most identified impacts of housing discrimination.<sup>40</sup> See table 5 for an overview of health and educational outcomes.

## DISCUSSION

This review was designed to examine whether housing discrimination impacts physical health, mental health, and educational attainment among minority populations. While it is clear that more research is needed, the findings of the articles reviewed suggest housing discrimination had small but significant impacts on all three. In terms of *physical health*, Yang and colleagues (2016) found racially-motivated housing discrimination was associated with increased chronic disease and reduced self-reported health among African American and Latino populations.<sup>12</sup> Although symptoms of self-reported health were not specified, alternative evidence suggests that racial discrimination is associated with higher self-reported body pain, which may be contributing to perceptions of self-reported health.<sup>45,46</sup>

Types of chronic disease were not specified in the study included in this review but a systematic review on the impacts of racism on health by Colezsar et al. (2013) found racism had impacts on physical health including hypertensive status.<sup>47</sup> These associations have biological plausibility given stressful situations stimulate the Sympathetic-Adrenal- Medullary Axis (SAM) region of the brain to release epinephrine,<sup>48</sup> which in turn increase heart rate and blood pressure, and may lead to hypertension and chronic disease if blood pressure is consistently raised through

experiences such as feeling one's current housing and ability to find new housing is insecure due to racism.<sup>49,50 51</sup> The theory of ontological security highlights housing as a basic human need that cannot be ignored or avoided. Thus individuals in need of housing cannot avoid the racial discrimination they may experience in their search for it, and in their efforts to maintain it. This may contribute to a prolonged activation of the body's stress response system which may, over time, result in reduced self-reported health and increased chronic disease, as reported by Yang et al.<sup>12</sup>

Ontological security may be compromised by other social factors such as war and political stability.<sup>52</sup> These factors may initially appear as more detrimental to physical health than housing discrimination, but an individual's home is where people develop the greatest sense of ontological security.<sup>20</sup> The home is an environment that individuals create for themselves meaning there is a lower risk of the stress response system being stimulated because individuals have more control compared to outside of the home,<sup>20</sup> thus supporting positive physical health outcomes.<sup>53</sup> These results are triangulated by the qualitative findings of Cohen (2004), who similarly found that Indigenous participants reported housing discrimination was impacting their general physical health.<sup>40</sup> However, additional details were not provided to shed light on the aspects of health that were impacted. The next step needed in the sequence of studies needed to examine the hypothesis that housing discrimination can impact physical health is prospective research so that we may better understand the temporal sequence of these variables.

Findings of this review suggest racially-motivated housing discrimination was also associated with reduced general *mental health* and depression among African American and Latino adults.<sup>12</sup> A systematic review by Paradies et al. (2015) similarly found that increased depression was the most frequently reported outcome of racial

discrimination generally among Asian, Latino, and African Americans.<sup>13</sup> In that review, Paradies and colleagues argued that racism contributes to the dysregulation of the cognitive-affective regions of the brain that control the physiologic pathways that lead to depression.<sup>13</sup> Racism impacts multiple regions of the brain.<sup>45</sup> Two regions related to depressive symptoms is the hippocampus and hypothalamic-pituitary-adrenal axis (HPA) which controls processes through regulation of glucocorticoids like cortisol.<sup>54</sup> When the HPA becomes hyperactive, due to stressors such as racial discrimination, glucocorticoid production increases and this contributes to depressive symptoms.<sup>55</sup> Thus, persistent racism due to housing discrimination may stimulate affective responses in the brain, resulting in adverse mental health outcomes like depression.

An interesting finding by Yang et al. was that the impacts of housing discrimination on self-reported health were exacerbated in affluent neighbourhoods.<sup>12</sup> The authors suggested that individuals who perceive discrimination and reside in socioeconomically affluent neighborhoods, may feel looked down upon by neighbors and deprived of basic needs that requires housing, which may in turn exacerbate the impact of discrimination on their health. A more recent study by Yang, Chen, Kim & Choi (2018) found that individuals who experienced housing discrimination were less likely to trust their neighbors, had a lower sense of belonging, and did not feel willingness from neighbors to help them or improve the neighbourhood.<sup>56</sup> These outcomes are a measure of social capital. The concept of social capital, which was first termed by Bourdieu in 1980 as “the actual or potential resources which are linked to possession of a durable network of institutionalized relationships or mutual recognition and respect.”<sup>57</sup> Social capital influences health through supportive relationships and networks that can lead to increased access to resources.<sup>58</sup> Ethnic minorities living in affluent neighborhoods may not be able

to develop supportive relationships with their neighbors, thus compromising their social capital. There may be a joint impact of racial discrimination through housing, and limited social capital compromising health outcomes for ethnic minorities.

Finally, this review suggests education is also adversely impacted by housing discrimination. Qualitative data from Nightingale (2016) suggests housing discrimination decreased student motivation in university and could prohibit students from attending university.<sup>43</sup> Students looked for off-campus housing due to matters of practicality like space and privacy, as well as finances. This exposed many students to housing discrimination in their communities, which impacted their educational pursuits. Students reported that housing discrimination “completely tainted the whole experience” of university because it was an educational-related stressor that began even before starting their studies. Housing discrimination made the process of finding housing very lengthy, which took away from time that students could have put into their studies. This suggests that housing discrimination creates challenges for education through finances, time, and supplementary stress.<sup>43</sup>

Yang (2016) reported that participants who experienced discrimination were more likely to live in neighborhoods with lower housing values and higher income inequality.<sup>12</sup> Lower housing values are associated with educational achievement.<sup>8</sup> Thus, being forced to live in a low-quality neighborhood may restrict the ability to attend a high-quality educational institution.<sup>8,42</sup> Yang and colleagues (2018) used the same data to examine the association between housing discrimination and social capital.<sup>56</sup> Results from this recent study also found that individuals who experienced housing discrimination were more likely to live in poorer socioeconomic conditions and have higher rates of residential segregation and ethnic minorities.<sup>56</sup> Housing discrimination was not significantly

associated with level of post-secondary education but with social capital<sup>56</sup>; which may have impacts to post-secondary education given that students with more social capital are more likely to succeed in university.<sup>59</sup> In Yang's study social capital was compromised by limited social interaction and support between neighbors, which may also transfer into peer interaction and support among post-secondary students. Post-secondary education as a component of social capital may be an area for further research of housing discrimination impacts.

The book chapter by Carr and Kutty (2008) reviewed literature on housing discrimination as a predictor of restricted/poor quality education for African and Latino Americans.<sup>42</sup> This chapter summarized research by the National Fair Housing Alliance which suggested that in 2006 minority populations experienced 3.7 million instances of housing discrimination every year in the United States.<sup>60</sup> Carr and Kutty (2008) theorized that housing discrimination contributes to residential segregation and mobility, which negatively impacts education.<sup>42</sup> As articulated by Carr & Kutty, residential segregation forces ethnic minorities into lower-income neighborhoods, which prohibits academic choice and forces people to attend lower-quality schools. Residential mobility puts pressure on ethnic minorities to move frequently, due to discrimination and the lack of affordable housing. Frequent moves disrupt academic studies as people are often forced to switch schools with their move. It also makes it difficult for teachers to provide high-quality education, as they often do not receive enough time learn their students' strengths and weaknesses. <sup>42</sup> Nightingale (2016) similarly reported that students felt there were areas of the city that were "not ethnic friendly" which persuaded them to live in different neighborhoods, even if they were farther away from their university.<sup>43</sup>

## **Reducing Housing Discrimination**

To address housing discrimination, Nightingale (2016) suggested that universities should provide students with educational resources on their tenancy rights.<sup>43</sup> An understanding of rights would allow students to take back some of the control they lost due to discrimination. Cohen (2004) reported why participants chose not to report their experience of housing discrimination.<sup>40</sup> The most significant finding was people not wanting to get involved in the court system, the time it would take, and that reporting would not produce any social change. Judicial personnel support for individuals who have experienced housing discrimination, may increase reporting and provide a more accurate account of housing discrimination happenings. Policy makers putting pressure on our judicial system to take these occurrences seriously may also help to reduce this. A study focused on combatting racism, by Guerin (2005), proposed shifting focus from the people who are demonstrating racism and focusing on the context in which it is occurring.<sup>61</sup> In the context of housing, this method would focus on legislation that provides renters/homeowners with rights, rather than focusing on individuals or institutions who are discriminating.<sup>61</sup> This approach supports public health best practice that verbal education/campaigning for institutionalized concerns like racial discrimination is ineffective in changing perspectives and outcomes.<sup>62</sup>

## **Suggestions for Further Research**

The key finding from this review is that more research on the experiences and impacts of racially-motivated housing discrimination is needed. Studies included suggest housing discrimination impacts both physical and mental health; however these studies were cross-sectional; well-designed prospective studies are needed to understand the

temporal sequence of these variables. Two studies by Yang, one included in this review, and one published after this review was complete using the same sample suggest housing discrimination is a determinant of social capital, and that these associations are mediated by the impacts of housing discrimination on perceptions of stress and anxiety in daily life.

Housing discrimination influences neighborhood features and this impacts health outcomes through compromised social capital; suggesting future research should also consider this covariate when examining racially-motivated housing discrimination as a predictor of physical and mental health.<sup>12,56</sup> Qualitative findings of this review are also limited, but support our understanding of how housing discrimination influences health and educational attainment. Nightingale (2016) highlighted how housing discrimination made students feel more stressed while attending university.<sup>43</sup> These findings could be further explored in future research to fully understand the pathways and extent to which, these increased stress levels impact educational attainment. Cohen (2004) reported that participants were connecting their experiences to self-reported health, but little data is provided to fully understand how/why this is occurring.<sup>40</sup>

### ***Strengths and Limitations***

Strengths of this study include the use of a validated methodology and framework for search and review.<sup>28</sup> Two independent reviewers, to ensure precision of selection, screened all literature. Searches were set up with the support of a health sciences librarian to ensure each database was fully utilized to maximize comprehension of results. Eight databases were reviewed for existing literature in this field. Distiller software was used for the second round of searching and review.

Limitations of this review include the limited number of studies selected, and use of scoping review methodology, which does not assess study quality. The search

terms/parameters set up for this review did not produce conclusive results, and all articles selected were found through hand searching, rather than the academic search.

### ***Conclusion***

The purpose of this review was to examine existing literature pertaining to housing discrimination as a determinant of health among minority populations. The most clear and concrete finding from this study was that more research on the impacts of housing discrimination on health and educational wellbeing is needed worldwide.

## **CHAPTER THREE: HOUSING DISCRIMINATION AND PTSD**

### **ABSTRACT**

**Introduction:** Evidence suggests that Indigenous students are subjected to high levels of racism at university. There is limited information regarding the experiences of racially-motivated housing discrimination among Indigenous students in Canada. The objectives of this study were: (1) to examine the frequency, social correlates, and experiences of housing discrimination experienced by Indigenous and non-Indigenous; (2) to examine associations between housing discrimination, PTSD and university stress among Indigenous university students; and (3) to explore Indigenous student suggestions to address racially-motivated housing discrimination.

**Methods:** Data were collected through in-person on-campus surveys with Indigenous university students ( $N = 150$ ) between 2015 and 2017, and non-Indigenous students ( $N = 74$ ) between 2017 and 2018. Associations were examined using linear regression models adjusted for confounders, with continuous PTSD symptomology and university stress scores as outcomes. Qualitative data were examined using a thematic analysis.

**Results:** Overall, 17.6% of Indigenous and 2.9% of non-Indigenous students experienced racially-motivated housing discrimination in the last year. Indigenous students describe experiences of housing discrimination that were blunt, deliberate and hostile. Only 2 non-Indigenous students experienced housing discrimination, both of whom identified as Asian and attributed these experiences to property managers who assumed they were Indigenous. The most important social correlate of housing discrimination for Indigenous students was being a parent. Past-year housing discrimination was associated with increased PTSD symptomology and university stress among Indigenous students in

models adjusted for confounders (age, gender, income, and children). Living with a romantic partner served as a protective factor, blunting the impact of housing discrimination on PTSD symptomology among Indigenous students.

**Conclusions:** Indigenous university students experience more housing discrimination than their non-Indigenous peers, particularly those who are parents. Findings suggest housing discrimination is associated with PTSD symptomology and elevated university stress for Indigenous students, which could in turn, impact their studies and success at school. Taken together, these findings suggest racially-motivated housing discrimination is a significant stressor in the lives in Indigenous university students, and policies and programming are needed to address this issue.

## INTRODUCTION

Post-secondary training is an important determinant of social mobility and health.<sup>63</sup> Indigenous Canadians have lower levels of university attainment than non-Indigenous Canadians.<sup>64</sup> University completion rates for Indigenous Canadians was 9.8% in 2011, compared to 26.5% for non-Indigenous Canadians.<sup>64</sup> There is some research examining differences in university completion, but we do not fully understand why this is occurring. Completion of university is an important equalizer for many inequities experienced by Indigenous Canadians such as employment and income rates.<sup>65</sup> The purpose of this study was to examine the role that racially-motivated housing discrimination may play in Indigenous mental wellbeing and perceptions of university stress.

Research suggests Indigenous university students in Canada are exposed to high levels of racism in cities.<sup>4</sup> Racism is a socially-constructed ideology that ranks people based on their ethnicity or phenotypic characteristics including their name, manner of speech, and region of origin.<sup>66</sup> This ideology informs unjust action through the unfair treatment (discrimination) of individuals by other individuals and by institutions.<sup>67</sup> There is little research examining how housing-specific racial discrimination may influence health and wellbeing for post-secondary students. Housing is an essential human resource. Limiting access to housing based on race is one way that racism impacts the wellbeing of targeted minority groups. For many students, access to housing is required to attend post-secondary institutions. This is particularly true for Indigenous students in North America, given many must move far from their communities to an urban center for training.<sup>64</sup> Limiting access to housing can directly endanger the physical welfare of

individuals through homelessness or by pushing individuals into neglected or unsafe living situations.<sup>68</sup>

The role that housing plays in supporting positive mental health is outlined by the theory of *ontological security* (Giddens, 1990); which is *as a state of stable mental health derived through the ability to give meaning to life through continuity and trust in the world as it appears to be.*<sup>17</sup> An individual's ability to give meaning to their lives occurs through consistency of positive and stable emotions while avoiding anxiety-inducing experiences. Ontological security becomes threatened when events occur that are not consistent with how an individual feels about the meaning of their lives. Racial discrimination is not often consistent with how an individual views themselves which may produce anxiety and other negative emotions, thus compromising ontological security.<sup>69</sup> Stable housing has been termed as a key component to achieving ontological security as people are the most in control of their environment in their home so they can avoid experiences that induce anxiety or conflict with how they view themselves. Expert-recommendation even suggests that home-ownership is a more secure avenue to achieve ontological security because it is less likely to be compromised than rental housing.<sup>20</sup> Given that housing plays a key role in achieving ontological security; and that it can be compromised through mental distress it is plausible that racially-motivated housing discrimination and potential mental health outcomes may dually compromise the ability to achieve ontological security.<sup>19,21</sup>

Among university students, limiting access to housing in cities may also impact their ability to pursue a post-secondary education. A study published by Currie and colleagues (2012) found 26.6% of Canadian Indigenous university students had experienced racially-motivated housing discrimination in their lifetime.<sup>429</sup> Additional

research examining ethnic minorities attend post-secondary institutions in Canada found that experiences of housing discrimination negatively impact overall experience at university and have the potential to prohibit university attendance altogether.<sup>43</sup>

This study expands on these findings by examining the experiences of racially-motivated housing discrimination among Indigenous students and the impacts of these experiences on symptoms of post-traumatic stress. Several studies have linked racial discrimination to PTSD symptomology within both Indigenous and African American populations.<sup>22</sup> The extent to which racially-motivated housing discrimination may contribute to PTSD symptomology has not been studied, but has biological plausibility given threats to housing directly endanger the physical welfare of an individual and personal control over the situation is often low.<sup>70</sup> The final goal for this study was to explore student feedback on ways to prevent and address racially-motivated housing discrimination experienced by Indigenous students in cities. This builds on current evidence supporting engaging individuals with lived-experience is best practice for addressing socially-motivated determinants of health.<sup>53</sup> Thus, the main research questions for this study were:

1. What are the frequency and social correlates of housing discrimination experienced by Indigenous and non-Indigenous university students?
2. What are the experiences of Indigenous and non-Indigenous university students in obtaining or maintaining housing in a small urban centre?
3. Is racially-motivated housing discrimination associated with PTSD symptomology and perceptions of university stress among Indigenous students?

4. What suggestions do Indigenous university students have to address racially-motivated housing discrimination?

## **METHODS**

### **Study Design**

Data for this cross-sectional study were derived from a CIHR-funded study led by Dr. Cheryl Currie at the University of Lethbridge. The project received ethics approval from the Human Subject Research Committee at the University of Lethbridge. Data collection for the Indigenous sample began in September 2015, and continued over 4 academic terms, ending in April 2017. Post-secondary students 18 years and older who identified as First Nations, Métis, Inuit, or Indigenous were recruited using a poster (Appendix B) displayed in various places across campus, and shared through a campus list serve for Indigenous students. Interested students were invited to contact a research assistant by email, phone, or text to learn more and arrange a time to participate. Data for non-Indigenous students was collected using the same method, from September 2017 to May 2018.

Data were collected on campus through in-person surveys. Written consent was obtained from all participants (Appendix C). A research assistant remained in the room for the duration of survey working at another desk, to answer potential questions. Given students were asked to answer question that were potentially discomforting (e.g., about experiences of racial discrimination), they were given information about psychological and cultural resources they could access upon completion of the session (Appendix D). Students were given an honorarium of \$50 and \$25 for participating in the survey and

interview components of the study respectively. All data were stored in a locked office on campus on a password-protected computer.

### **Exposure Variable**

Racially-motivated housing discrimination was operationalized by the following question: *In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting housing because of your race, ethnicity, or colour?* Response options were 0 = No, 1 = Yes. This is one of nine items measured by the Experiences of Discrimination (EOD) scale.<sup>29</sup> If participants indicated they had been exposed to housing discrimination, they were then asked: *How many times did this occur in the past year?*

Response options were 1 = once, 2 = two or three times, 3 = four or more times. There were no missing values for this question. A Cronbach's alpha is not reported because this study reports on only one of the nine EOD survey questions.

As a whole, the EOD measures the number of situations in which racial discrimination has been experienced. The EOD has been shown to be a valid and reliable measure of self-reported discrimination across racial groups, including Indigenous Canadians and Indigenous university students.<sup>4,22,29</sup> Participants who indicated they had not lived independently from their parents, owned a home, or had not moved in the last year were coded as 98. Overall 5% of participants were not at risk of housing discrimination in this study. An open-ended question also asked students if there was anything they would like to share about housing discrimination. The final 50 participants in the study were also asked what can be done to address housing discrimination within the survey.

## **Outcome Variable**

Post-Traumatic Stress Disorder: PTSD symptomology was assessed using the PTSD Checklist (PCL) Civilian Version. The PCL is a 17-item self-report measure that reflects the DSMIV symptoms of PTSD. The civilian version of this measure simplifies assessment based on multiple traumas because symptom endorsements are not attributed to a specific event.<sup>30</sup> The measure asks participants about symptoms occurring in the past month. Response options include: *1 = not at all, 2 = a little bit, 3 = moderately, 4 = quite a bit, 5 = extremely.*<sup>31</sup> A total symptom severity score (range = 17-85) is obtained by summing all 17 items. While there is no absolute method for determining the correct cut-point for the PCL, a score of 30-35 is typically used as a cut-point for more formative PTSD diagnostic testing in a civilian population.<sup>30</sup> A meta-analysis of the PCL-C demonstrated internal validity, good temporal stability, test-retest reliability and convergent validity across ethnically diverse populations.<sup>71</sup> Internal consistency for this study was excellent ( $\alpha = 0.93$ ).

## **Additional Variables**

Confounding variables include the participant's gender, age, and perceived social status. Evidence about housing discrimination in Canada identifies Indigenous people, females, those in younger age brackets, and lower income Canadians are at heightened risk for this problem.<sup>72,73</sup> For this sample, gender was coded as *0 = male* and *1 = female*. Age was coded as *1 = "18-24", 2 = "25-34", 3 = "35-44", and 4 = "45+"*. Perceived income status was coded as *1 = "upper income", 2 = "upper-middle income", 3 = "middle income", 4 = "lower-middle income", and 5 = "lower income"*.

## **Analysis Strategy**

Data were analyzed using IBM SPSS 24 and Nvivo 11.0.<sup>32,33</sup> A sequential explanatory strategy was used to guide analysis of quantitative and open-ended data. A sequential explanatory design begins with analysis of quantitative data, and follows with qualitative data to assist with the interpretation and overall understanding of quantitative results.<sup>74</sup> Researcher reflexivity was accounted for when open-ended responses were analyzed.<sup>75</sup> This study began by analyzing quantitative data and open-ended responses were then analyzed to support findings of quantitative data. In this study, participants were not directly asked if they had moved out of their childhood home, making it difficult to determine which participants were at direct risk for housing discrimination. Open-ended questions were analyzed, which indicated that 5% of the sample were living with their parents and removed from the analysis as they were not at direct risk for housing discrimination in the past year ( $n = 8$ ). An additional 42 participants owned their own home. These individuals remained in the sample given date of purchase was not ascertained in this study, and individuals may also experience housing discrimination when seeking to purchase a home.

**Research Question 1.** To examine the frequency and social correlates of housing discrimination experienced by Indigenous and non-Indigenous students, frequencies and cross-tabs were used, as well as Kendall's tau-b correlations examined associations between the frequency of housing discrimination and ordinal-level sociodemographic variables (i.e., age category, income group). Phi coefficients were used to examine associations between the frequency of housing discrimination and nominal-level sociodemographic variables (i.e., gender, Indigenous group, marital status, parental status, living with children, rent or own).

**Research Question 2.** To examine the qualitative experiences of Indigenous and non-Indigenous university students with housing discrimination, open-ended responses to the question: “*Is there anything you would like to share about housing discrimination?*” were analyzed using a thematic analysis. This began with the organization of data pertaining to each research question, followed by three rounds of coding using NVivo software. Once this was completed, individual codes were reduced into themes, which were interpreted and used to answer this research question. Finally, I mapped data using NVivo software to support my final interpretations of the themes. (See appendix E). I considered my own reflexivity during this coding process given I am non-Indigenous, have not experienced racial discrimination, and work with both Indigenous and non-Indigenous clients in a Housing First Program in Lethbridge.

**Research Question 3.** To examine whether racially-motivated housing discrimination is associated with PTSD symptomology and perceptions of university stress, these hypothesized associations were first examined using Loess curves to determine the linearity of associations. Next, two separate unadjusted and two separate adjusted linear regression models were run to examine associations between the main exposure variable (frequency of racially-motivated housing discrimination) and the main outcome variables (PTSD score, perceived university stress). Three confounders were selected *a priori* using existing literature (age, gender, income), while two confounders (parent variable and living with a romantic partner variable), were selected based on the strength of their association with racially-motivated housing discrimination. All confounders were examined for effect modification before each was included as a confounder in the model. These statistical interactions were examined using Loess curves and multiplicative interaction terms; none were found.

**Research Question 4.** To examine suggestions by Indigenous university students to address racially-motivated housing discrimination, the last 50 Indigenous participants in this sample were asked the question: “*What can be done to reduce the challenges you have experienced in obtaining or maintaining housing as a university student?*” In total, 24 participants responded to the question. These responses were also examined using a thematic analysis; beginning with organization of data pertaining to this specific question, and multiple rounds of coding to produce several themes. I again considered my own social position and work experiences during this coding process.

## **RESULTS**

### **Indigenous Sample Description**

Overall, 63.1% of the 142 Indigenous participants in this study identified as First Nations, 23.2% as Indigenous generally (without a specific affiliation), and 13.5% as Métis. As shown in Table 1, the majority of participants were female (72.0%), which is in keeping with the reported proportion of female students in most Canadian universities (Statistics Canada, 2010). The median age was 26 years ( $SD = 9.3$ ,  $range = 18-61$  years). Almost all participants (97.1%) identified as full-time (rather than part-time) university students. Most (71.1%) self-identified as low-middle to low income. Approximately half the sample were single, not living with a partner, and never married. Most participants (70.4%) were currently renting. The majority had lived within a First Nations community for some portion of their lives (78.7%). Almost half the sample had children (46.5%).

### **Non-Indigenous Sample Description**

Overall, 68.9% of the 74 non-Indigenous participants in this study identified as non-ethnic (68.9%), while 31.1% identified as having an ethnicity. Similar to the

Indigenous sample, 72% of non-Indigenous participants were female. The median age was 5 years younger than the Indigenous sample ( $M = 21$  years,  $SD = 3.4$ ,  $range = 18-33$  years). Most participants (95.9%) identified as full-time (rather than part-time) university students. The majority (55.4%) self-identified as low-middle to middle income. Most participants (81.1%) were single, not living with a partner and never married. Most non-Indigenous participants were currently renting (63.5%). Only one non-Indigenous student had children compared to the 98.6% who did not.

### **Housing Discrimination Experienced by Indigenous Students**

To examine *Research Question 1*, the frequency of housing discrimination experienced by Indigenous and non-Indigenous students was examined, as well as social correlates of this experience, and open-ended descriptions about these experiences across both groups. Overall, 17.6% of Indigenous students ( $n = 25$ ) experienced racially-motivated housing discrimination in the past year, among which 44% had experienced it once, 28% had experienced it 2-3 times, and 28% had experienced it 4 or more times. Note that the data used for this study did not ask students if they still lived with their parents. I removed 5% of the sample who self-identified as living with their parents in an open-ended question ( $n = 8$ ). However, the frequency of housing discrimination reported in this study likely remains an underrepresentation given some included in the calculation estimate may still live with parents. As shown in Table 1, Indigenous students between the ages of 25-44 years and those who were parents experienced significantly more housing discrimination. However, Indigenous students who are older and/or have children are also more likely to be living separate from their own parents, which may account for these findings. Indigenous students who self-identified as being in a lower income

category also experienced significantly more housing discrimination (Table 1).

### Experiences of Housing Discrimination

To examine *research question 2*, Indigenous students completed an open-ended question asking them to share their experiences related to housing. Responses highlighted the blunt and deliberate ways they were denied fair consideration for housing due to their race:

*"When I turned 18, it took me over 6 months to find housing. Landlords refused to rent to me because I was a "risk". The company that did rent to us ended up hiring us as staff for 5 years." (P23)*

*"Trying to find housing in Lethbridge is bad! On the phone or over email they are very polite and seem nice, but once they see you, they are quick to show the house and get you out of there. Even had a guy say he took the wrong key and just never came back!" (P9)*

*"One lady called me back to view her apartment and I went to meet her, and as soon as she [saw] me she said the apartment was taken. So I left and my sister called her, and she said the apartment was still available." (P28)*

*"Responses from landlords when applied for housing: "Don't want to rent to Indians." 'No [\*\*\*] Indians." (P29)*

### **Housing Discrimination Experienced by Non-Indigenous Students**

Overall, 2.9% of non-Indigenous students ( $n = 2$ ) experienced racially-motivated housing discrimination in the past year, among which 1 had experienced it once, and 1 had experienced it 2-3 times. Similar to the Indigenous sample, I removed participants who self-identified in an open-ended question as still living with their parents ( $n = 5$ ,

6.8% of the sample); however the estimate presented here likely remains an underestimate of the extent of housing discrimination experienced by non-Indigenous students living outside their parents homes. Given only 2 of the 69 non-Indigenous students in the sample had experienced housing discrimination, social correlates of this experience could not be statistically examined. Both non-Indigenous students who reported housing discrimination in this study identified as Asian. When asked in an open-ended question if there was anything they would like to share about their experiences of housing discrimination the students reported:

*"I look as if I identify as First Nations, Métis or Inuit (I get asked quite often), so sometimes feel as if I am discriminated against." (Non-Indigenous sample, P11)*

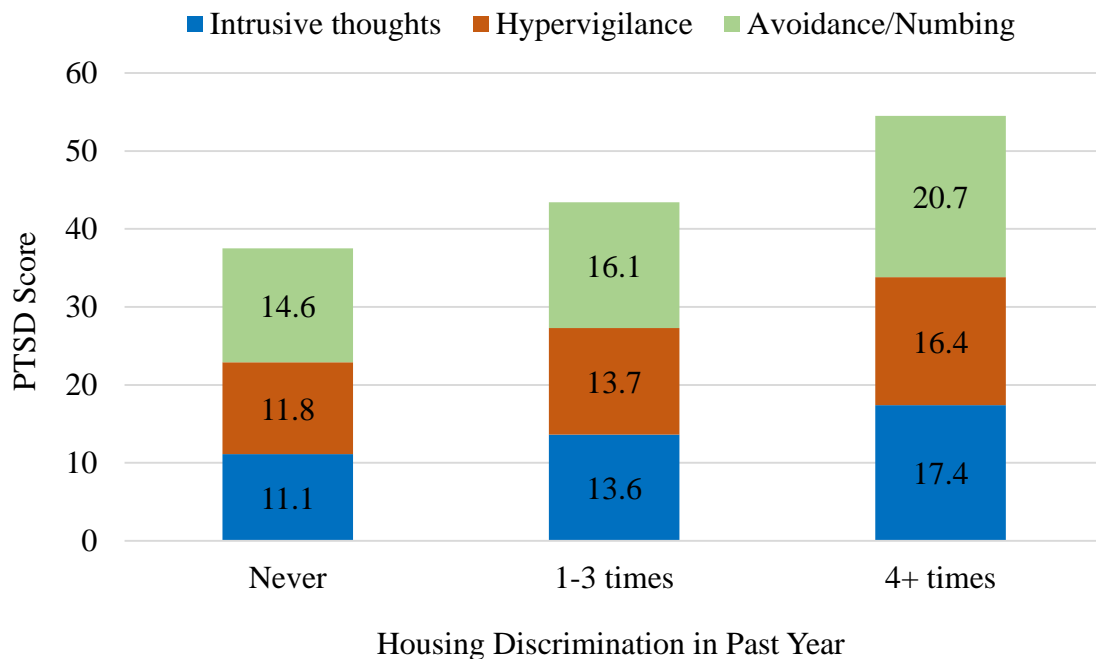
*"I currently live with my landlord who is a close friend of mine. However, this past year I have looked into moving out of the place I am currently living, and have been told that I need references or have been declined housing because I look like I am of Indigenous decent. I've had to come up with a plan to have either one or both of my parents (although I am 21) come to rental interviews with me to show landlords that I am not of Indigenous decent so they would be more likely to offer me housing." (Non-Indigenous sample, P12)*

**Table 6.** Characteristics of sample

Characteristics	Indigenous Participants			Non-Indigenous Participants	
	Total <i>N</i> (%)	12-Month Housing Discrimination <i>n</i> (%)	Correlation Coefficient ( <i>p</i> -value) <sup>a</sup>	Total <i>N</i> (%)	12-Month Housing Discrimination <i>n</i> (%)
Total Sample	142 (100%)	25 (100%)		74 (100%)	
<b>Gender</b>			0.16 (0.31)		
Female	101 (71%)	19 (18.8%)		53 (71.6%)	2 (100%)
Male	42 (29.6%)	6 (15.0%)		19 (25.7%)	0
<b>Age</b>			<b>0.27 (0.001)*</b>		
18-24 years	62 (44.0%)	3 (4.8%)		59 (79.7%)	2 (100%)
25-34 years	46 (32.6%)	12 (26.1%)		15 (20.3%)	0
35-44 years	24 (17.0%)	9 (37.5%)		0	0
45+ years	9 (6.4%)	1 (11.1%)		0	0
<b>Cultural Group</b>			0.22 (0.32)		
First Nations	89 (63.1%)	20 (22.5%)			
Métis	19 (13.5%)	0			
Indigenous	33 (23.2%)	5 (15.5%)			
NI – no ethnic grp <sup>b</sup>				51 (68.9%)	0
NI – identify with an ethnic grp				23 (31.1%)	2 (100%)
<b>Marital Status</b>			0.22 (0.07)		
Living with a romantic partner	59 (41.8%)	15 (25.4%)		14 (18.9%)	0
Not living with romantic partner	82 (58.2%)	10 (12.2%)		60 (81.1%)	2 (100%)
<b>Student has Children</b>			<b>0.36 (0.001)*</b>		
Yes	66 (46.5%)	21 (31.8%)		1 (1.4%)	0
No	76 (53.5%)	4 (5.3%)		73 (98.6%)	2 (100%)

Characteristics	Indigenous Participants			Non-Indigenous Participants	
	Total <i>N</i> (%)	12-Month Housing Discrimination <i>n</i> (%)	Correlation Coefficient ( <i>p</i> -value) <sup>a</sup>	Total <i>N</i> (%)	12-Month Housing Discrimination <i>n</i> (%)
<b>Rent or Own Home</b>			0.14 (0.44)		
Rented	100 (70.4%)	21 (21.0%)		47 (63.5%)	1 (50%)
Owned	42 (29.6%)	4 (9.5%)		27 (36.5%)	1 (50%)
<b>Perceived Income Category</b>			<b>-0.16 (0.03)*</b>		
Upper to upper-middle	9 (6.3%)	0		8 (10.9%)	0
Middle income	32 (22.4%)	4 (12.5%)		25 (33.8%)	0
Lower-middle	68 (47.9%)	12 (17.6%)		22 (29.7%)	1 (50%)
Lower income	33 (23.2%)	9 (27.3%)		19 (25.7%)	1 (50%)
<b>Housing Discrimination (past year)</b>					
Never	117 (82.4%)			67 (97.1%)	0
Once	11 (7.7%)	11 (44.0%)		1 (1.5%)	1 (0.5%)
2-3 times	7 (4.9%)	7 (28.0%)		1 (1.5%)	1 (0.5%)
4 or more times	7 (4.9%)	7 (28.0%)		0	0

<sup>a</sup>p-value below 0.05; <sup>b</sup> NI = non-Indigenous



**Figure 2.** Impacts of housing discrimination on PTSD subscale scores among Indigenous university students.

### Housing Discrimination and PTSD Symptomology among Indigenous Students

To examine *Research Question 3*, linear regression models were used to examine whether past-year housing discrimination was associated with PTSD scores and university stress. Findings indicate Indigenous participants reported a high baseline level of PTSD symptomology. As shown in Figure 1, even among those who had not experienced housing discrimination in the past year, the average PTSD symptomology score was 37.5 ( $SD = 13.3$ ). This is significant given scores of 30-35 are typically used as a cut-point for more formative PTSD diagnostic testing in a civilian population.<sup>76</sup> As shown in Table 2, the frequency of past-year housing discrimination was significantly and positively associated with increased PTSD symptomology among Indigenous students in a linear regression model adjusted for age, gender, income and parental status ( $\beta = 0.31, p = 0.001$ ). When associations between housing discrimination and PTSD subscales were

examined using partial correlations adjusted for the same confounders, housing discrimination was significantly associated with increases in each one including the PTSD Intrusive Thoughts subscale, the PTSD Hypervigilance subscale, and the PTSD Avoidance/Numbing subscale (*Pearson's r* = 0.31, 0.25, 0.22; respectively,  $p < 0.01$ ). Overall, Indigenous students who experienced housing discrimination 1-3 times in the past year had PTSD scores that averaged approximately 5 points higher than their peers who had not. Among students who had experienced housing discrimination 4 or more times in the past year, PTSD scores averaged 17 points higher than their peers who had not had this experience. Evidence and expert opinion on the PTSD Civilian Checklist highlight a 5-point change in PTSD score as a reliable indicator of difference, and a 10-20 point change as clinically important.<sup>30,76</sup>

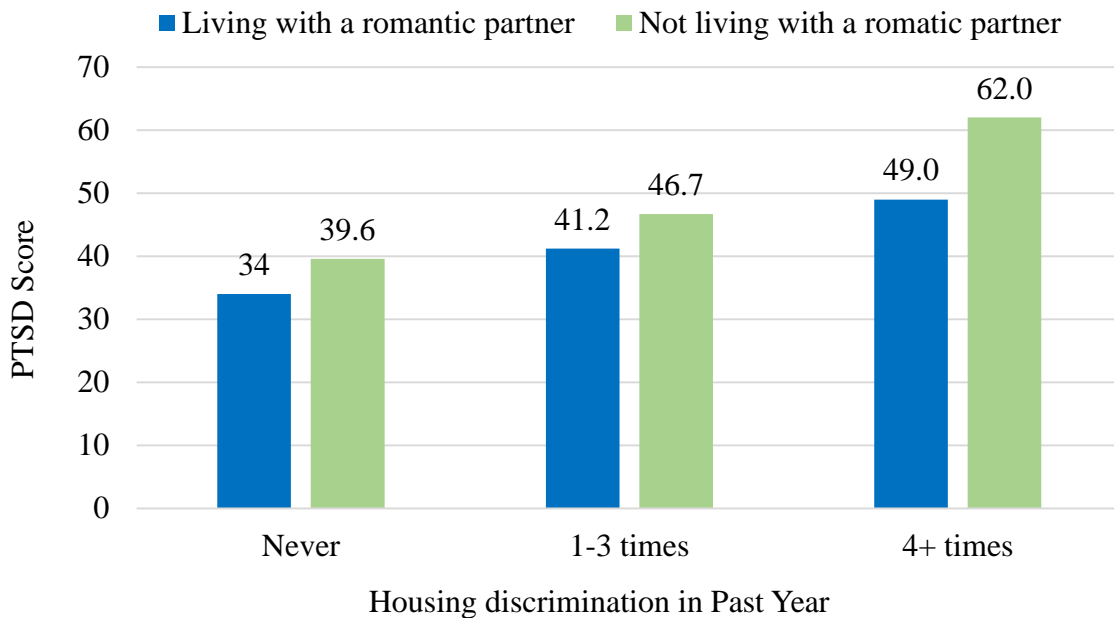
**Table 7.** Linear regression models for the direct effects of racially-motivated housing discrimination and covariates on PTSD symptomology score (N = 138)

	Unadjusted Models				Adjusted Model <i>Adj R</i> <sup>2</sup> = 0.12			
	B	SE	$\beta$	p	B	SE	$\beta$	p
Housing discrimination	<b>4.94</b>	<b>1.45</b>	<b>0.28</b>	<b>0.001</b>	<b>5.41</b>	<b>1.52</b>	<b>0.31</b>	<b>0.001</b>
Indigenous group	-3.39	2.01	-0.14	0.09	-2.98	1.95	-0.13	0.13
Gender	0.66	2.67	-0.02	-0.81	0.11	2.58	0.01	0.97
Age	0.13	0.13	0.09	0.30	0.14	0.15	0.09	0.38
Income group	<b>3.03</b>	<b>1.40</b>	<b>0.18</b>	<b>0.03</b>	1.60	1.50	0.10	0.29
Live with a partner	<b>-4.74</b>	<b>2.39</b>	<b>-0.17</b>	<b>0.05</b>	<b>-5.70</b>	<b>2.52</b>	<b>-0.20</b>	<b>0.03</b>
Have children	-0.12	2.39	-0.05	0.96	-3.88	3.00	-0.14	0.20

\*Significant results are provided **in bold**. Column 2-5 provide unadjusted estimates of each variable. Columns 6-9 provide estimates unadjusted for all variables in model.

As shown in Table 2, living with a romantic partner (married or common law) was a protective factor associated with a 5.7-point decrease in PTSD symptoms among Indigenous students in an adjusted model. As shown in Figure 2, living with a romantic

partner also served as a resilience factor for Indigenous students, blunting the rise in PTSD symptomology in the presence of racially-motivated housing discrimination.



**Figure 3.** PTSD Symptomology scores among participants living with a romantic partner and without.

### Housing Discrimination and University Stress among Indigenous Students

To examine the second component of *Research Question 3*, the association between racially-motivated housing discrimination and university stress was tested. Findings indicate that the frequency of housing discrimination experienced in the past year was statistically associated with how stressful students perceived university to be that year. All 25 Indigenous students who experienced housing discrimination in the past year (100%) rated their university experience that year as somewhat or very stressful, compared to 84.8% of students who had not experienced housing discrimination (*Phi Coefficient* = 0.18,  $p = 0.04$ ). The extent to which perceived university stress was associated with the PTSD symptomology score was also examined as a post-hoc test to

determine if these variables influenced one another; the variables were not statistically correlated.

### **Suggestions by Indigenous Students to Reduce Housing Discrimination**

To answer *Research Question 4*, the last 50 Indigenous students in this study were asked an open-ended question about what should be done to address housing discrimination; 48% of this subsample provided a response. Participants discussed methods they used to reduce their exposure to housing discrimination, and to take back some control in these difficult situations. For example, students described withholding an Indigenous last name and "*not looking Native*" when arriving to view rentals:

*"When house hunting, I will not divulge my last name over the phone because often upon hearing that I am Native, the renter will back out immediately"* (P2)

Others said they had to resort to trying to find a non-Indigenous friend or roommate to help them find housing. Several students also described how they had to conceal Indigenous cultural and spiritual practices, both in order to obtain and maintain housing. More generally, students talked about the critical need to tackle the wall of stereotypes that separated and limited their access to the housing they needed to obtain university training in an urban landscape:

*"I think not being judged on what is on the outside, because being a student is hard enough."* (P144)

*"I understand renters are trying to run their business without distractions from bad tenants but there are other methods than prejudice."* (P145)

As well, Indigenous students talked about the importance of and need, for more

Indigenous housing opportunities in the city and on campus to alleviate the stress placed on students who are trying find housing in a racially hostile environment:

*"I am currently in Treaty 7 subsidized housing, but prior to this, definitely there were a variety of landlords refusing to even [agree to] a walkthrough upon mention of my last name." (P45)*

*"...for other students struggling with this issue there should be more available and affordable housing for students. This could be something that the government could look into implementing." (P120)*

Students also discussed the role of the university related to this issue, including the need to *"have more options through the university"* for housing, and *"more resources that work with Indigenous students to maintain and obtain housing."* Not surprisingly, given almost 50% of the sample were parents, many students talked about the need for better on-campus and off-campus student housing for single mothers and for families.

## **DISCUSSION**

Overall, 17.6% of Indigenous university students experienced racially-motivated housing discrimination in the past year, compared to 2.9% of non-Indigenous students. The two non-Indigenous students who had experienced housing discrimination identified as Asian, and both provided qualitative responses indicating that they had experienced housing discrimination because property managers had assumed they were Indigenous. One non-Indigenous participant described the need to bring his parents to rental viewings to show that he was not Indigenous in order to be considered for housing.

Among Indigenous students, qualitative findings indicate that the housing discrimination they experienced was racially-motivated and deliberate. Indigenous

university students described being denied housing, and in some cases, even the opportunity to view a rental, once they revealed an Indigenous last name by phone, or presented themselves visually in person. Statements made to Indigenous students by property managers about the racially-driven reasons they were being denied housing were at times blunt and hostile. Almost a third of Indigenous participants with children experienced housing discrimination in the past year, the reasons for which remain unclear, given this was not discussed qualitatively by participants. It may be that participants with children experienced more frequent discrimination, or that students with children were more likely to have moved out of their own parents' home, and thus were more likely to have been exposed to housing discrimination. The second explanation of this finding cannot be ruled out given the data used for this study did not ask students if they had moved out of their parents home.

Study results indicate that racially-motivated housing discrimination exacerbated already high levels of PTSD symptomology among Indigenous university students. These findings corroborate previous studies documenting an association between racial discrimination experienced across a variety of situations and PTSD symptomology among Indigenous adults, as well as racial minorities more generally.<sup>4,13,22,77</sup>

Housing discrimination was most strongly associated with PTSD intrusive recollection symptoms (*Pearson's r* = 0.31). Intrusive recollection forces people to relive their traumatic experience by replaying memories of the event against their conscious will.<sup>78</sup> Experiencing symptoms of intrusive recollection is not event-specific and findings of this study demonstrate that students who were not exposed to housing discrimination were still reporting symptoms of PTSD. Participants described their experiences of housing discrimination as degrading and wounding, which may have impacted the extent

to which they could control intrusive thoughts about what happened in these situations, thus contributing to the association between housing discrimination and intrusive recollection symptoms. Further, 30% of the sample who experienced housing discrimination experienced it four or more times, and additional evidence suggests that Indigenous students face multiple forms of racism across several domains while attending university (e.g., in school, in public spaces, in stores, when seeking health care).<sup>478</sup> Thus, it is likely that participants who experienced more frequent housing discrimination in this study also experienced more frequent discrimination in other situations, which may have further contributed to symptoms of intrusive recollection, and PTSD more generally.

PTSD includes two additional subscales - hypervigilance and avoidance/numbing – each of which were also moderately associated with housing discrimination. A key aspect that differentiates PTSD from several other mental health disorders (e.g., schizophrenia and bipolar disorders)<sup>79</sup> is that PTSD includes physiological symptoms in addition to psychological symptoms.<sup>71</sup> Hypervigilance means that a person is on high alert for potential harms, even when they are not present.<sup>78</sup> Participants in this study who experienced housing discrimination also identified high levels of stress while attending university. Symptoms of avoidance/numbing often influence decisions and thought processes post-trauma in order to avoid reminders of the traumatic experience.<sup>78</sup> Students attending university in an urban centre typically require housing in order to complete their studies, thus it would be difficult for students to fully avoid memories of housing discrimination in order to secure housing while attending university. Participants reported that they wanted to avoid landlords or property managers who demonstrated racism towards them, which may have been related to avoidance/numbing symptoms of PTSD.

Research outlines multiple traumas (e.g., war, natural disasters) that impact symptoms within each PTSD subcategory.<sup>30</sup> Racially-motivated housing discrimination has not currently been associated with symptoms of PTSD, but this makes sense given the importance of the “home” in providing feelings of ontological security.<sup>20</sup> An individual’s home is where people create the deepest psychological feelings of security because it is a controllable and predictable environment.<sup>80</sup> This becomes detrimental to health when it is restricted through acts of racism, as individuals have very little control over experiencing racism and need housing to survive and feel safe. Evidence shows that less control creates more stress, which then produces an even more harmful effect on the body and further compromises ontological security.<sup>45</sup> Responses to open-ended questions indicated that students were attempting to take back some of the control they lost from being denied housing. Participants reported using “Caucasian friends” to help them find housing and had family members call back landlords who were demonstrating discrimination. Along with post-trauma support, individuals who find a way to feel good about their own actions in the face of adversity, produce additional resiliency factors against PTSD. This study did not ask participants to directly indicate what they did after experiencing housing discrimination. Open-ended responses suggest that resiliency factors were occurring and future research should explore this further.

Ethnic minorities are often subjected to life experiences that are risk factors for PTSD symptomology.<sup>41</sup> Bryant-Davis (2007), a licensed psychologist dedicated to supporting culturally-appropriate trauma recovery work; argues that a diagnosis of PTSD is too narrow for the intergenerational trauma experienced by Indigenous people.<sup>81</sup> She suggests that Complex Post Traumatic Stress Disorder (CPTSD) is a more appropriate determination for Indigenous populations with symptoms of PTSD.<sup>81</sup> CPTSD has the

same symptoms of regular PTSD but used to examine long-term trauma.<sup>82</sup> This research used a validated tool, measuring symptoms of PTSD based on the DMS IV.<sup>31</sup> Complex trauma has been recognized by the National Centre for PTSD, and expert opinion recommends that it be included in the next version of the DSM, but it did not make it into the DSMV.<sup>82</sup> With this understanding, future research examining PTSD among Indigenous populations may want to collect longitudinal data to capture long-term trauma and clarify complexity of PTSD symptomology.

### **University Stress**

Students in the present study who experienced housing discrimination rated their university experience as more stressful than those who did not. This may not have been solely related to housing discrimination as post-secondary students face many stressors while attending university such as restricted finances and pressures of academic study.<sup>3</sup> However, when asked about the experience of housing discrimination, participants stated that “being a student is hard enough” without having to deal with issues like housing discrimination. Most post-secondary students require housing while attending university, which means it cannot be ignored to avoid additional stress. Students likely found housing discrimination as very stressful because denial of housing could jeopardize their ability to achieve their educational goals. Research shows that post-secondary students search for housing in close proximity to their school or a transportation system.<sup>83</sup> It would be very difficult for students who experienced housing discrimination, especially more than once, to search for housing with additional preferences when they are being denied due to their race. Thus it is not surprising that experiences of housing discrimination impacted students’ stress levels while attending university.

### **Living with a Romantic Partner as a Resilience Factor**

Results from this study suggest that living with a romantic partner was associated with reduced PTSD symptomology generally and when examined in association with housing discrimination. These findings align with evidence that high social support post-trauma is associated with reduced PTSD symptomology.<sup>30</sup> Social supports generate a health-enabling environment through increased access to health resources along with mental and emotional support; which ultimately support feelings of ontological security.<sup>84,85</sup> Interventions aimed at reducing the likelihood of PTSD often involve improvement of social supports, which is likely contributing to the protective nature of students who were living with romantic partners.<sup>41</sup> This assumes that participants who are living with a romantic partner have more support post-trauma than participants who did not. The nature of a relationship between two-romantic partners is generally equal and supportive.<sup>86</sup> This may be why students who had children did not equally show resilience towards PTSD symptomology, as a parent-child relationship is not equal in terms of emotional support.<sup>87</sup> Strong social supports also contribute to social capital, which promotes health through social influence and control which were themes depicted in this study. Social capital includes all meaningful relationships that an individual has such as living with a romantic partner.<sup>56</sup> Student who lived with a romantic partner may have been a key component of social capital, thus inhibiting the development of PTSD symptoms.

### **Efforts to Reduce Housing Discrimination**

When asked what can be done to reduce housing discrimination, many participants identified maintaining/expanding on-campus housing options for families and single parents. This aligned with other suggestions involving the role of the university to

create a discriminatory-free environment for students to find and maintain housing. Some students discussed the ways in which they were taking back control that was lost. Individual efforts to address housing discrimination align with current evidence supporting resiliency among oppressed populations such as Indigenous students.<sup>50</sup> Others stressed the importance of tackling the stereotypes that Indigenous student's students face. These responses suggest that both individual and societal level interventions are needed to combat racially-motivated housing discrimination. Overall findings align with present evidence that recognizes the complexity of racial discrimination and the importance of addressing both individual and societal/systemic influences.<sup>88</sup>

### **Study Strengths and Limitations**

Strengths of this study include the use of a validated screen for PTSD symptomology, an item from a validated measure of racial discrimination, and the inclusion of open-ended questions to document what students were experiencing related to race-based housing discrimination and their suggestions to address this problem. This study builds on our understanding of PTSD among Indigenous populations, which has been identified as a gap in our current research of PTSD.<sup>41</sup>

Age, gender, Indigenous group, and income status were examined through loess plots as potential effect modifiers. No effect modifiers were identified. Limiting participants to students is a more homogeneous representation than a general sample of Indigenous adults, which reduced issues associated with residual confounding across factors that were not controlled for.

Limitations include use of a cross-sectional design, which precludes inferences about causation and temporal sequence, a relatively small sample of participants, and

potential response bias due to self-report measures. Overall, the frequency of housing discrimination reported by all participants in this study was likely an underestimate, as students were not directly asked if they still lived with their parents. As well, participants were not asked if they had attempted to find housing in the last year, and many Indigenous and non-Indigenous participants owned their own home and thus were likely not at risk for housing discrimination in the past year. Symptoms of PTSD were not measured in combination with evidence-based screening measures such as sleep patterns, co-occurring mental health symptoms, and cognitive/relational functioning.<sup>41</sup> Recent research demonstrates that neighborhood features are important to examine when assessing the mental health impacts of housing discrimination; however these were not examined in this study.<sup>12,89</sup> It is also important to note that Indigenous students who had not experienced housing discrimination in the past year averaged high PTSD symptomology, suggesting housing discrimination exacerbated PTSD symptoms rather than initiated them.

## **Conclusions**

Findings suggest racially-motivated housing discrimination is a common experience and significant stressor for Indigenous university students, associated with elevated PTSD symptoms and university stress, which could in turn, impact student success. Living with a romantic partner was found to buffer the adverse impacts of housing discrimination on PTSD symptomology, and may be an important resilience factor. Participants in this study highlighted the need for greater access to Indigenous student housing. Students call for action from their academic institutions and community involvement in the reduction of racial stereotyping.

## **CHAPTER 4: GENERAL DISCUSSIONS AND CONCLUSIONS**

### **INTRODUCTION**

The goal of public health is to ensure that “the conditions in which people can be healthy are met”.<sup>90</sup> Racism is a social-constructed ideology that ranks people based on phenotypic characteristics;<sup>22</sup> and negatively impacts health when demonstrated through unjust actions of discrimination.<sup>13</sup> Research suggests Indigenous students in Canada are exposed to high levels of racism in cities while completing university, which can have significant impacts on health and well-being.<sup>4</sup> Housing discrimination is a form of racism that impacts health through restricted access to goods and services.<sup>6</sup> The purpose of this chapter is to compare and contrast findings from chapter two which reviewed the impacts of housing discrimination on health and education across ethnic groups, with results presented in chapter three which focused on university stress and symptoms of PTSD among Indigenous students.

#### **Racial Discrimination and Health**

Findings from chapter two of this thesis demonstrate that depression, chronic disease, and self-reported health and mental health generally are associated with housing discrimination.<sup>12</sup> No specific forms of chronic disease were documented in the studies reviewed in chapter two, but research examining racial discrimination generally has been associated with hypertension, cancer, heart disease, type 2 diabetes, obesity, cholesterol and liver cirrhosis.<sup>5,13,47</sup> This range of health outcomes is due to the many ways in which racism impacts the stress response systems within the body. This begins with the sympathetic-adrenal-medullary axis (SAM) region of the brain which immediately responds to stressors like racial discrimination by releasing epinephrine which increases

heart rate, blood pressure, and vasoconstriction.<sup>91</sup> Chronic over-activation of SAM has been shown to result in hypertension, thus linking racially-motivated housing discrimination to higher prevalence of chronic disease.<sup>12,91</sup> The hypothalamic pituitary adrenal (HPA) axis is another region of the brain that is stimulated by stressors and responds by releasing glucocorticoids like cortisol.<sup>45</sup> Cortisol produces metabolic changes, decreased functions of the immune system, mood changes and cognitive impairment.<sup>92</sup> These responses are beneficial and healthy when they are activated in the short term, but they become detrimental to health and lead to other complications such as chronic disease when they are chronically over-activated.<sup>93</sup>

Studies reviewed in chapter two demonstrated that housing discrimination impacts depression and mental health generally, but unfortunately the studies available provided little information regarding what aspects of general mental health was being impacted. It could be assumed that overall feelings of ontological security were compromised through housing discrimination, thus making participants feel that their mental health was impacted but not defined as a specific disorder. One study from chapter two reported that housing discrimination was associated with a specific mental health disorder-higher prevalence of depression.<sup>12</sup> Symptoms of depression generate sad or irritable moods and impacts daily living activities such as sleep.<sup>79</sup> Mental health outcomes from chapter three demonstrated an association with PTSD symptoms in all three subscales, with the intrusive thoughts symptoms most strongly associated with housing discrimination. Intrusive recollection occurs when people think about experiences they do not want to recall, but their mind keeps replaying against their will.<sup>78</sup> These findings differ from chapter two because they are not as closely related to cognition as symptoms of

depression are, but they demonstrate the range of symptoms that racial discrimination may produce.<sup>79</sup>

Students from the study in chapter three shared experiences of housing discrimination such as name calling and shaming. Others talked about property managers telling them a place was taken as soon as they arrived to see it. One student recounted that a property manager said they would go get the key to a suite when they arrived and never returned. Findings from a thesis in chapter two by Nightingale (2106) similarly reported experiences of mental anguish from housing discrimination such as landlords using language barriers to trick students into unfair tenancy agreements.<sup>43</sup> Such experiences are personally humiliating, which can result in an emotional response, and the intrusive recollection of these experiences. Overall, findings from chapter two and three build on our understanding of mental health as a correlate of housing discrimination, in the form of depression and symptoms of PTSD.

### **Post Traumatic Stress Disorder**

It may initially appear surprising that racially-motivated housing discrimination was associated with symptoms of PTSD. Yet housing is one of our most basic, physiological needs, and is required to develop feelings of ontological security, which ultimately supports positive mental health and well-being.<sup>94</sup> Housing supports ontological security because it provides a safe environment that is easily controlled by the inhabitants, which limits the amount of adversity that they can be exposed to.<sup>20</sup> Being denied housing due to race was likely perceived as adversity in itself, plus compromising perceptions of security because it would be difficult for participants to know the extent to which discrimination was going to occur and restrict housing options when it was racially

motivated. The confounding impact of racial discrimination, importance of housing, and compromised ontological security may have been collectively impacting the increase in PTSD symptoms that participants demonstrated.

PTSD produces symptoms that fall into three subcategories: hyper arousal, intrusive thoughts, and avoidance/numbing.<sup>31</sup> This is unique to many other mental health disorders as these symptoms produce both psychological and physiological symptoms, as compared to mental health disorders like depression or schizophrenia.<sup>30,95,96</sup> Housing discrimination was significantly associated with each subcategory of PTSD symptoms. The difference in association for each subcategory was minimal, with intrusive thoughts slightly stronger. All subcategories of symptoms would likely impact a person's daily routine through negative thoughts or feelings about themselves and their social environment.<sup>78</sup> Data from this thesis suggests Indigenous students experienced blunt and deliberate forms of housing discrimination, which may lead to a negative emotional response when reminders of the events occur, thus the strong association to intrusive thoughts.<sup>71</sup> Overall experiences of housing discrimination may have lead to negative beliefs about their social environment, thus compromising social capital and feelings of ontological security.

It is also important to note that the temporal sequence of the association between housing discrimination and PTSD symptoms cannot be affirmed given the study design used. It may be, for example, that students struggling with PTSD were more likely to experience housing discrimination as it is well documented that those with mental health struggles experience stigma in Canadian society.<sup>97</sup> Yet it may also be argued that housing discrimination itself may have been responsible for the PTSD symptoms observed, given that experimental and prospective studies have shown experiences of discrimination can

cause symptoms consistent with PTSD. King (2005) completed an experimental study where African American females were exposed to discrimination and found that racially-motivated discrimination was a predictor of increased stress.<sup>69</sup> This was measured through a self-reported Stress-Arousal Checklist (SACL) which was completed, after participants were exposed to discrimination through an audiotape describing a discriminatory situation that the participant was asked to imagine themselves in.<sup>69</sup> This experimental study demonstrates temporal sequence between racial discrimination and symptoms of stress. Although this study did not examine symptoms of PTSD, the SACL measured symptoms of vigorous arousal, tension, and uneasiness which are similar to symptoms of PTSD such as feeling jumpy and easily startled (hyper arousal) and feeling upset from reminders of trauma (avoidance/numbing).<sup>31,69</sup> Longitudinal studies examining African American women in the United States have also shown that persistent discrimination over time (five years) will lead to the development of depressive symptoms, regardless of age, education or income.<sup>98</sup> Depressive symptoms like feelings of hopelessness and difficulty sleeping also share similarities with symptoms of PTSD such as feeling emotionally numb (avoidance/numbing) and trouble sleeping (hyper arousal).<sup>30,99</sup> Thus, there is experimental and longitudinal evidence of discrimination causing symptoms of severe mental distress. Although temporal sequence cannot be established for this cross-sectional research there is evidence to support that housing discrimination could have exacerbated PTSD symptoms on its own.

### **Protective Factors**

Findings of this study demonstrated that living with a romantic partner was a protective factor against the development of PTSD symptoms. It was not originally

theorized that living with a romantic partner would be protective, but the fully adjusted results of this research demonstrated this as a statically significant protective factor. These findings align with additional research indicating that strong social supports post-trauma are a positive aspect of the healing process and sometimes prevent the onset of developing symptoms of PTSD.<sup>80</sup> Qualitative analysis of students' experiences also showed that students who were exposed to housing discrimination utilized support from friends or family to combat their negative experiences. Quotes from students indicated that they were engaging friends and family to support their search for housing. Yang and colleagues (2018) recently replicated this finding when examining individuals who's social capital was impacted after experiencing housing discrimination.<sup>56</sup> Social capital, which captures all meaningful relationships and connections in an individual's life; has been found to promote positive health and well-being for individuals who have experienced adversity like racial discrimination.<sup>56,58</sup> Participants in this study who experienced housing discrimination were less affected when they had stability among their neighborhood because they were less likely to fall into social isolation.<sup>56</sup> It is plausible that students living with a romantic partner had more social capital through these relationships, than students who did not. This replicates Yang's (2018) findings that social supports attenuated the negative impacts that housing discrimination produces for social capital.

### ***Housing Discrimination and Education***

This thesis is framed using a public health lens, which places importance on social determinants of health, in both upstream and downstream directions. Post-secondary education is an upstream determinant of health because it increases health literacy and promotes socioeconomic growth.<sup>2</sup> Qualitative findings from this chapter two reported that

housing discrimination negatively impacts the overall university experience for students, produces additional stress, and has the potential to prohibit post-secondary education altogether. Results from data I analyzed for chapter three supported Nightingale's findings in that housing discrimination resulted in perceiving university to be more stressful. Students open-ended responses from my study reported that "being a student I hard enough" without having to worry about discrimination. University students face multiple avenues for high levels of stress, such as financial restriction and academic competition, while trying to complete their studies.<sup>100</sup> Findings from chapter two and three build on our understanding of the stressors that students who are part of an ethnic minority such as Indigenous Canadians, face while attending university.

Qualitative findings from both chapter two and three emphasized that the experiences of housing discrimination students faced were deliberate and personally humiliating, which was likely contributing to the stress they reported at university. Open-ended responses from my study in chapter three indicated the university should be more involved in supporting off-campus housing for Indigenous students and to provide a discrimination-free environment for students to find housing for themselves and their families on campus. Participants from Nightingale's study similarly reported that the university could support students experiencing housing discrimination.<sup>43</sup> However, participants called to their universities for support by providing them with educational resources on their tenancy rights rather than housing itself.<sup>43</sup>

Additional findings from chapter two emphasize the role of residential segregation/mobility, contributing to poor educational attainment.<sup>42</sup> Research relating to housing discrimination primarily began with Yinger's work in 1995.<sup>8</sup> Yinger addressed social/economic avenues that housing discrimination impacts, and residential segregation

impacting education was one of them. Findings from chapter two of this thesis demonstrate that residential segregation is still occurring nearly fifteen years later.<sup>42</sup> Participants from my study in chapter three did not directly identify residential segregation, but that they would commute into the city every day because they couldn't find housing.

### ***Housing Discrimination as a Public Health Issue***

A public health perspective recognizes efficiency in understanding risk factors, to prevent negative health outcomes from occurring in the first place.<sup>90</sup> Participant responses from chapter three additionally supported this perspective by indicating that “reducing stereotypes put in place upon a first impression” could prevent housing discrimination. There is a paradox between prevention of PTSD symptoms and prevention of housing discrimination. Engagement of cultural practices has been found to combat negative health outcomes produced through adversity like racism.<sup>50</sup> Yet there is also evidence to suggest that Indigenous students who engage in cultural practices are more likely to experience racism.<sup>4</sup> Understanding the severity of risk for each prevention mechanism may be an avenue for future public health inquiry.

### ***Strengths, Limitations, and Future Directions***

This thesis expands current knowledge of racial discrimination producing poor health outcomes through the measurement of PTSD symptomology. A strength of approach in this thesis is that it goes beyond an examination of exposure and outcomes variables, by addressing what can be done to reduce housing discrimination. It builds on current evidence supporting that engagement of individuals with lived-experience is best practice for providing tangible, and sustainable improvements.<sup>53</sup>

Additional strengths of this thesis include the use of a validated screen for PTSD symptomology, an item from a validated measure of racial discrimination. Inclusion of open-ended questions to document what students' experiences of housing discrimination and their suggestions to address this problem was an additional strength. This study builds on our understanding of PTSD among Indigenous populations, which has been identified as a gap in our current research of PTSD.<sup>41</sup>

Limitations for the scoping review methodology portion of this thesis include the number of peer-reviewers, and the long time frame it took to complete searches and write results. This increases the likelihood of additional research being published in the field, and not being captured in this study. An additional limitation is that the search had to be run twice, using different search terms, given the complex nature of this topic and the multiple fields that study housing discrimination.

A limitation is the use of a cross-sectional design, which precludes inferences about causation and temporal sequence, a relatively small sample of participants, and potential response bias due to self-report measures. Symptoms of PTSD were not measured in combination with evidence-based screening measures such as sleep patterns, co-occurring mental health symptoms, and cognitive/relational functioning.<sup>41</sup> Additional findings of this thesis demonstrate that neighbourhood features are statistically significant when examining outcomes of housing discrimination, which was not reported in this study.<sup>12,89</sup>

The research done in chapter three used a small sample size, meaning that the statistical analysis was a low-powered model. It is likely that if this study was replicated with a larger sample size, in multiple urban centres, that an even greater association would be produced.<sup>101</sup> This research was written from a public health perspective,

focusing on prevention, and participants were not specifically asked what they could/did do post-racial discrimination to support their wellness after the experiences. Future research should address social supports like living with a romantic partner or university support, to fully understand the protective nature this study suggested. Participants were not directly asked what they did after experiencing housing discrimination, as this research was done from a preventative (public health) perspective which utilized lived experience from students to address housing discrimination from happening in the first place. Future research may want to address the coping mechanisms that individuals use when they have experienced housing discrimination.

#### *Conclusions and Public Health Implications*

The findings of this thesis validate that Indigenous students in Canada experience racial discrimination in the form of housing and this is associated with symptoms of PTSD and stressful post-secondary experiences. Results imply that stronger social supports serve as a buffer for poor mental health outcomes, when experiencing discrimination finding housing. These results suggest that health education should include social supports and university housing to help address and manage experiences of housing discrimination. Participants with lived-experience identified that universities and policy makers should provide more accessible housing and anti-racism programming to prevent Indigenous populations from experiencing these negative events.

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APPENDIX A

Construct	Operationalized by:	Total (N)
<b>Outcome variable:</b> <b>Stress</b>	What has the experience at university been like for you in the past year?  Very stressful Somewhat stressful Not very stressful Not at all stressful	N = 150
<b>Outcome Variable:</b> <b>Post-Traumatic Stress Disorder</b>	The measure asks participants about symptoms occurring in the past month. Response options include: not at all, a little bit, moderately, quite a bit, extremely. The following 17 items will be measured:  1. Memories/thoughts/images (R) 2. Repeated, disturbing dreams (R) 3. Acting/feeling as if happening again (R) 4. Feeling upset at reminders (R) 5. Physical reactions at reminders (R) 6. Avoid thinking/talking/feelings (A/N) 7. Avoid activities/situations (A/N) 8. Trouble remember details (A/N) 9. Loss of interest in activities (A/N) 10. Feeling distant or cut off from others (A/N) 11. Feeling emotionally numb (A/N) 12. Feeling as if future cut short (A/N) 13. Trouble sleeping (H) 14. Irritability/angry outbursts (H) 15. Difficulty concentrating (H) 16. Super alert or watchful (H) 17. Jumpy or easily started (H)	N = 150
<b>Exposure variable:</b> <b>Housing Discrimination</b>	In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting housing because of your race, ethnicity or colour?  Yes No	N = 150

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	<p>If yes, how many times did this happen in the past year?</p> <p>Once</p> <p>Two or three times</p> <p>Four or more times</p>	
<b>Qualitative Analysis</b>	<p>What can be done to reduce the challenges you have experienced in obtaining or maintaining housing as a university student?</p>	<i>N</i> = 50
	<p>Is there anything else you would like to share about discrimination experienced getting housing?</p>	<i>N</i> = 150

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## APPENDIX B

Aboriginal Participants: Recruitment Email/Poster



# Aboriginal Stress and Health Study

Researchers at the University of Lethbridge are recruiting Aboriginal adults (18 years and older) for a study on the links between social experiences, stress, and health.

### What you will be asked to do:

- In office: Complete a questionnaire and interview, & have your blood pressure, weight, height, and waist measured. This will take about 90 minutes.
- Take home and wear a motion sensor for 7 days to measure physical activity.
- Provide a series of saliva samples so that we may examine how much stress your body is experiencing.
- All data collected will be anonymous and strictly confidential

**Where:** University Office - M3038 Markin Hall

You will receive a cash honorarium of \$125 for completing all parts of the study.<sup>1</sup>

If interested, or for more information, please contact Kat Chief Moon Riley at [kathrina.chiefmoonri@uleth.ca](mailto:kathrina.chiefmoonri@uleth.ca). You can also call or send a text message to Kat at 403-634-9366.

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<sup>1</sup> **Note:** Once some components of this study reach the sample quota, that section (e.g., wear a motion sensor) will drop off this list and the honorarium will be reduced to be consistent with that.

## APPENDIX C

Dear Sir or Madam:

You are being invited to participate in a study to better understand how social experiences influence stress in the body. Participation is voluntary and will involve the following:

- You will be asked to complete a survey about social experiences you have had in childhood and adulthood, your current levels of physical activity, and your psychological well-being. This will take about 1.5 hour. You may take a break when you would like.
- We will also collect physical measurements associated with stress and health. This includes measuring your blood pressure, weight, height, and waist measurements, and 3 saliva samples to examine how much stress your body is experiencing. You will receive a \$50 cash gift as a thank you for being in the study today.
- When you leave, we would like to invite you to take a small kit home to collect 3 samples of saliva a day over the next 2 days. We will ask if you would like to take part in this segment of the study when we are completed here today, and give you instructions. This segment of the study is also voluntary.
- When you leave we will also invite you to wear a motion sensor known as an accelerometer for 7 days. It is a small lightweight device worn on a belt and can be worn over or under your clothes. It is worn at all times except while sleeping, showering or swimming. This segment of the study is also voluntary.
- When you return the saliva samples and motion sensor you will receive a \$50 cash gift as a thank you.

You will likely not benefit directly from being in this study, however you will be making an important contribution to research that will help us understand the effects of social experiences on stress and health. If some of the questions we ask, or physical measures we would like to take make you feel uneasy, you can ask to have those questions or measurements skipped. If you feel stressed, you can talk to someone about how you are feeling after the interview. To do this, you can call the Canadian Mental Health Association line at 403-327-7905 to talk to someone about how you are feeling.

All information you provide is confidential. Only the research team will see your answers. All research assistants will be required to sign confidentiality agreements. All data will be stored on a secured computer or in a locked cabinet for 7 years. After this time, it will be destroyed along with all consent forms.

Saliva samples will be kept in a freezer in a locked laboratory at the university for 5 years, after which they will be destroyed. All saliva samples will be labeled by a number only, which cannot be linked to you. If you would prefer, we can return your saliva samples to you several months after you have completed the study, or include your

sample in a ceremony to return it to the earth in a traditional way. If you would prefer either of these options, we would link your name to your study ID on this consent form to ensure we return the correct samples to you or include the correct samples in a ceremony to return it to the earth. This form will be kept in a locked cabinet separate from the sample; your name would not appear on the sample itself. The results from this study will be reported in general terms in the form of presentations and publications. Your personal information, including your name, will be kept confidential and will not be distributed in any way.

You may also withdraw from the study at any time without a reason. If you choose to withdraw, all of the information you have shared will be destroyed.

If you have questions about this research please contact the Principal Investigator:

Cheryl Currie at [cheryl.currie@uleth.ca](mailto:cheryl.currie@uleth.ca) or 403-332-4060 at the University of Lethbridge. If you have any other questions regarding your rights as a participant in this research, you may also contact the Office of Research Ethics at the University of Lethbridge at 403-329-2747 or [research.services@uleth.ca](mailto:research.services@uleth.ca).

I have read the above information regarding this research study on social experiences and stress. I consent to participate in this study.

\_\_\_\_\_ Printed Name of Participant

\_\_\_\_\_ Signature of Participant

\_\_\_\_\_ Signature of Research Assistant

\_\_\_\_\_ Date

Optional:

Please check this box if you would like your saliva sample returned to you:

Please check this box if you would like your saliva sample included in a ceremony that will return it to the earth.

## APPENDIX D

### Debriefing Material



4401 University Drive  
Lethbridge, Alberta, Canada  
T1K 3M4

Phone 403.329.2699  
Fax 403.329.2668

<http://www.uleth.ca/hlsc>

Dear Sir or Madam:

Thank you for taking part in this study. The purpose of this study was to gain a better understanding of the relationship between social experiences, stress and health. Sometimes answering questions can make a person feel sad or uneasy. If you would like to talk to someone, free counselling is available for you on campus at **Student Counselling Services**:

Phone: 403-317-2845

Email: [counselling.services@uleth.ca](mailto:counselling.services@uleth.ca)

When: Weekdays from 8:30am -12:00pm and 1:30 – 4:00

Where: 218 Turcotte Hall

If you would like to speak to an Aboriginal Elder, **Elders Francis First Charger** and **Carolla Calf Robe** are on campus to provide cultural support and guidance to all students. You are welcome and invited to meet with them:

Phone: 403-329-2369

Email: [fng@uleth.ca](mailto:fng@uleth.ca)

When: 10:00am – 4:00pm Mondays and Thursdays

Where: Native American Students' Union Lounge, A424 and the Elder & Ceremony Room, A430 University Hall

The Canadian Mental Health Association also provides a free 24-hour distress line that is available to you anytime at **1-888-787-2880**. This number will put you in touch with someone who you can talk to about how you are feeling by phone.

If you would like information about the results of the study once completed, you are welcome to contact Cheryl Currie at [cheryl.currie@uleth.ca](mailto:cheryl.currie@uleth.ca) or 403-332-4060. We would be happy to share them with you. Thanks so much for your interest and your help today

