THE PSYCHOLOGICALLY TRAUMATIC EXPERIENCES OF RURAL REGISTERED NURSES WHO LIVE AND WORK IN THE SAME COMMUNITY

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By

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ABSTRACT

Rural RNs are exposed to a variety of traumatic and life-threatening events that involve injury, suffering, death, and dying on a daily basis, in geographical isolation, and with limited support. The events commonly involve individuals of all ages who are known to them personally, such as family, friends, or neighbors. Exposure can have a negative effect on their physical and psychological health, and place them at risk for such things as secondary traumatic stress, vicarious trauma, and post-traumatic stress disorder.

The purpose of this study was to explore how rural practicing Registered Nurses (RNs) deal with exposure to psychologically traumatic events in the context of living and working in the same rural agricultural community over time. The aims were to a) describe the psychologically distressing traumatic events experienced by rural RNs who live and work in the same rural community, b) develop a reflexive understanding of the psychological impact of exposure to distressing traumatic events on rural RNs, and to c) construct a substantive theory focusing on psychologically distressing traumatic events in the context of rural nursing practice. Charmaz's constructivist grounded theory methodology was utilized to inform the research process. Purposeful theoretical sampling of RNs practicing in six rural acute care hospitals in the western Canadian province of Saskatchewan resulted in a sample of 19 participants. Data were generated through 33 interviews (19 face-to-face and 14 telephone follow-up), and 14 reflective journals. All audiotaped interviews and journals were transcribed verbatim and analyzed using the constant comparison method.

Findings illuminated the fact that rural nurses were intertwined with trauma-related events for life because they often live and work in the same community their entire career and are embedded in the sociocultural aspects of rural community life. Participants dealt with this through a process of 'staying strong' by relying upon others, seeking inner strength, attempting to leave the past behind, and by experiencing transformational change over time. The influence of the social context illuminated the fact that it was crucial for nurses to stay strong over time in order to continue to cope and deal with traumatic events in their community in the future.

This research also highlights that current organizational psychological support is inadequate, and policies, programs, and processes do not meet the specific needs of nurses in rural practice settings. An improved response with interventions and supports that are designed to meet the unique needs of nurses in the rural practice context is required.

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DEDICATION

"If you reach for the stars, you will land on the moon" - Roberta Bondar

This dissertation is dedicated in memory of my parents Michael and Elsie. Although they did not live to see me achieve this accomplishment, their influence has made a profound impact. They have inspired me to set my sights high, always do my best in all that I do, and strive to be the best human being that I can possibly be.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1.0 INTRODUCTION AND OVERVIEW

1.1 Background to Research Project

Nursing is a demanding occupation requiring professionals to contend with unpredictable, complex work environments, and high expectations from others (Canadian Nurses Association (2015). Nursing practice also lends itself to exposure to hazardous (Terry et al., 2015) and stressful situations that may have a psychological impact on nurses, leading to potential for both physical and mental health concerns (Vasconcelos et al., 2016). Nurses who practice in rural settings may be at a greater occupational risk considering the complexity and variability of their practice and the unique challenges presented within rural settings (Hegney et al., 2015).

In Canada, 19% of the population are considered rural, with 33% of the Saskatchewan population residing outside of urban centers (Statistics Canada, 2019a). In 2015, the proportion of regulated nurses working in rural or remote areas of Canada was 11.7%, where 17.3% of the population live (Canadian Institute for Health Information [CIHI], 2016). Rural areas have a higher proportion of young and old compared to the general population (Moazzami, 2016) with increased injury and mortality rates than in urban centers (Subedi, Greenberg, & Roshanafshar, 2019).

Given the limited Canadian data on this topic, international research from countries with similar geography and population were relied upon to explore the information surrounding this issue and obtain a full understanding. In comparison to urban settings, rural communities are often under-resourced with fewer nurses (MacLeod et al., 2017) and other health professionals (Starke et al., 2017), limited diagnostic services, and limited access to specialized care (Clarke, 2016). In the United States, it was found that these independent and collective factors can influence the timeliness of services provided, the type and extent of health problems encountered, and increase the likelihood that a local nurse will provide primary care versus a physician or another health care professional (Molinari & Bushy, 2011). Nurses working in rural and remote areas typically have a broader scope of practice than their urban counterparts, commonly work in geographic isolation, make clinical decisions autonomously (Kulig,

Kilpatrick, Moffitt, & Zimmer, 2013; MacLeod, Stewart et al., 2019) and are required to have skills far beyond what is required in urban practice settings (Lee & Winters, 2012). Rural nursing embodies interrelationships and culture at the community level, and rural nurses are in constant interaction with their work and community environments (MacLeod, Kulig, & Stewart, 2019). For rural Registered Nurses (RNs), it is highly likely that their unique dual personal and professional roles will result in exposure to distressing traumatic events such as motor vehicle trauma and fatal injuries or death of someone they know personally.

Traumatic events as defined by Health Canada include extreme events that may occur in any location or form in which a "person is subjected to or witnesses; falls outside the range of normal experience; is life threatening or could result in serious injuries; exposes the person to shocking scenes of death or injuries; could lead a person to experience intense fear, helplessness, horror or other reactions of distress" (Health Canada, 2007). Rural environments report high injury mortality rates (Subedi et al., 2019) with higher mortality rates as a result of motor vehicle accidents (MVAs), occupational injuries, drowning, suicide, and fire (Burrows, Auger, Gamache, & Hamel, 2013), and slower response times (Mell, Mumma, Hiestand, Carr, Holland, & Stopyra, 2017). Mortality rates are also reported to increase with remoteness (Burrows et al., 2013) with the lowest mortality rates reported in urban communities (Statistics Canada, 2019b).

Mortality in children under the age of 4 is three times higher in rural areas than in urban centers (DesMeules et al., 2006) and the overall mortality rate increases as rurality increases (Subedi et al., 2019). Factors that place rural residents at a higher risk of death due to MVA have been associated with long distance travel, poorer rural roadways (Burrows et al.,, 2013), behaviors in seat belt use, and high travel speed (Simons et al., 2010). Delays in access to trauma care have been associated with lengthy trauma scene response times and incident discovery, which have contributed to rural trauma deaths (Simons et al., 2010). The risk of death among trauma patients in the emergency department of rural facilities has been reported to be three times that of urban centers (Fleet et al., 2019). Limited access to emergency communications and phone service (i.e., 911 access, cellular service), lack of personnel with advanced life support training, poor coordination of services, and organizational policies on trauma care destination compound the risk (Simons et al., 2010).

The most common occupational fatalities in rural settings are being run over or pinned by vehicles or machinery or crushed by machinery, entanglement, being run over by or falling from

an unmanned moving machine, being struck by a large object, and being struck or crushed by animals (Shah, Hagel, Lim, Koehncke, & Dosman, 2011). There is an increased risk of death due to fire and drowning in rural areas, and motor vehicle deaths are more than double that in urban centers (Burrows et al., 2013). More than half of these fatalities occur in a field or farmyard with 72.9% of deaths occurring at the site of injury and 18.3% en route to, or in the hospital (Shah et al., 2011). In Canada, rural fatalities of farmers over the age of 20 are nearly three times higher than that of other industries (Shah et al., 2011). This rate has been associated with the nature and diversity of farming practices, and the fact that the farm is used as both a place of work and recreation activity (Shah et al., 2011). Additional factors such as fatigue, tasks being completed over longer periods of time, weather and mechanical breakdown (DesMeules et al., 2006) and people operating equipment well into their senior years (Canadian Agricultural Injuries, 2011), may place rural individuals at greater risk of injury or death. For rural nurses, the rural hospital acute care emergency department is commonly the first point of contact where exposure to the suffering of others from trauma occurs, and where advanced care is provided in the form of resuscitation, diagnostics, and coordination of specialized care, including transportation to a higher level of care facility (Trauma System Accreditation Guidelines, 2011).

To date, little is known about the impact of exposure to distressing traumatic events on the psychological and physical well-being of rural RNs who live and work in the same rural agricultural community, and/or the internal conflicts they experience in an attempt to reconcile or deal with the effects (Opie, Lenthal et al., 2010). According to Adriaenssens, De Gucht, and Maes (2012), the negative effects of exposure to trauma are unavoidable and can have a powerful impact and cause damage to personal health.

Nurses who live in the communities in which they practice may be more vulnerable to the effects given the isolated nature of their practice, high level of work and community engagement, close-ties to their community, lack of privacy and anonymity, and limited debriefing opportunities and supportive interventions to help them cope. Rural nurses care for people often known or familiar to them, from all ages and circumstances that have been involved in trauma-related events. Exposure can be distressing and disturbing, may have a negative impact on their overall psychological and physical health (Missouridou, 2017), and should be considered an occupational hazard (Terry et al., 2015). The unique social context of having dual relationships with individuals in the community may create additional challenges as these nurses are

intertwined as both community members and health care providers. It is also troubling that organizations and leadership do not commonly recognize the psychological impact of exposure to trauma on nurses and their families, nor offer preventative measures to mitigate the risks (Scott et al., 2009).

To date, limited research has been dedicated to this topic although the evidence available suggests that trauma can have a significant psychological impact on nurses. Nurses in rural and remote practice settings are at greater risk (Hegney et al., 2015) to the repercussions of psychologically traumatic events and the cumulative or long-term effects such as secondary traumatic stress (STS) (Adriaenssens et al.,, 2015a), vicarious trauma (VT) (Bercier & Maynard, 2015), compassion fatigue (CF) (Cieslak et al., 2014), burnout (Adriaenssens et al., 2015b) and post-traumatic stress disorder (PTSD) (Hensel, Ruiz, Finney, & Dewa, 2015).

In a recent thematic analysis of open-ended questions on a pan-Canadian survey of nurses working in rural and remote areas, Jahner, Penz, Stewart and MacLeod (2020, in press) found that 32% of 3,822 regulated nurses had experienced an extremely distressing health care incident in the past two years. The types of events clustered into three themes related to death/dying and traumatic injury; violence or aggression (experienced or witnessed); and failure to rescue or protect patients/clients. Although some nurses felt well supported within their work setting, the majority (65%) indicated that they did not receive psychological support from the leadership in their organization. These themes emerged from brief responses on a quantitative survey, suggesting that qualitative research is needed to provide a deeper understanding of the impact of psychologically traumatic situations that rural nurses encounter and the formal and informal organizational supports in rural workplaces.

1.2 Statement of the Problem

Rural nurses often live and work in the community throughout their lifetime, therefore it can be difficult to separate themselves personally and professionally from the traumatic events occurring in their communities. Nurses are legally required to uphold confidentiality which can underpin their ability to debrief with family and friends and limits their ability to deal with the effects in rural and remote work environments. As a result, nurses commonly rely on sharing their experiences and debriefing with peers, and a large portion suffer in silence while continuing to provide care to other patients (Manitoba Nurses Union, 2015). In addition, there is a lack of recognition of traumatic impact by health care leaders or immediate and appropriate

organizational response or support following events. In rural communities, professional treatment options may be limited or absent and nurses may have difficulty getting the necessary time off of work to travel to address their mental health needs in urban centers.

1.3 Purpose of Study and Specific Aims

The purpose of this study was to explore how practicing rural RNs deal with exposure to psychologically traumatic events in the context of living and working in the same rural agricultural community over time. The constructivist grounded theory (CGT) approach (Charmaz, 2014) was selected as the qualitative method which best fit the study purpose and to explore the social processes over time for rural RNs who have experienced psychologically traumatic events in the context of their rural nursing practice.

The specific aims of this study were to:

1) Describe the psychologically distressing traumatic events experienced by rural RNs who live and work in the same rural community;
2) Develop a reflexive understanding of the psychological impact of exposure to distressing traumatic events on rural RNs;
3) Construct a substantive theory focusing on psychologically distressing traumatic events in the context of rural nursing practice.

1.4 Significance of Research

Over the course of my nursing career, I have lived and worked in a variety of rural and urban centers, and recognized the importance of this topic from my own experiences and observations of the psychological manifestations of the impact of traumatic events on peers, and the urban-rural disparities in leadership's understanding, recognition, and management of events as an occupational hazard.

The insights from this study may enhance understanding of the type of traumatic events experienced and the impact of exposure to distressing traumatic events from the perspective of rural RNs. Findings may be relevant to administrators and policy makers, and influence decisions to promote the health and safety of rural RNs through proactive and preventative strategies that improve their psychological health and wellbeing and the quality of their personal and professional lives. Increased understanding of these experiences may also have implications for health care organizations, leadership, educators, clinicians, and government, and inform

occupational health and safety practice and policy to support rural nursing practice. This study may also contribute to nursing knowledge and provide a focus for further research inquiry.

1.5 Organization of the Dissertation

This dissertation has been prepared according to the College of Graduate and Postdoctoral Studies (CGPS), University of Saskatchewan requirements, and follows the manuscript style format to present the research for publication. Each chapter is arranged in a manner that aligns with specific research journal publication guidelines and is consistent with CGPS requirements. The first chapter includes the introduction, which provides background information, the study purpose, highlights how the research will contribute to the rural nursing practice, and puts the study into context to guide the reader. The second chapter consists of an integrated literature review that has been published in the *Online Journal of Rural Nursing and Health Care* titled: *Psychological Impact of Traumatic Events in Rural Nursing Practice: An Integrative Review.* This manuscript presents the evidence on the psychological impact of caring for others who have experienced a traumatic event in the context of rural nursing practice. The manuscript answered three questions: a) what terms are used to describe the impact of exposure to traumatic events on rural and/or remote nurses, b) what are the specific physical, mental and/or emotional outcomes of experiencing traumatic events for rural and/or remote nurses, and c) what contextual factors from the perspective of rural nursing practice are not being addressed in the literature. The integrative review screening process identified a total of 475 articles during the keyword search. After further screening, a total of nine rural nursing focused articles on how practicing rural RNs deal with exposure to psychologically traumatic events in the context of living and working in the same rural agricultural community over time were selected/identified. The search strategy used Whittemore and Knafl's (2005) review method to evaluate the quality of the articles, and is presented in a flow chart (Figure 2.1). The research critique process followed the framework of Loiselle and Profetto-McGrath (2011) and is outlined in Table 2.1. The manuscript is reprinted with permission, and the only changes are that it has been formatted to align with CGPS dissertation format requirements, and two citations were clarified.

The third chapter contains a manuscript titled *The Psychologically Traumatic Experiences of Rural Registered Nurses Who Live and Work in the Same Community.* This manuscript outlines the study methodology and presents the major findings using Charmaz's (2014) constructivist grounded theory method. The manuscript is structured according to the

journal guidelines of the *Journal of Clinical Nursing.* A model is used to present the social context of the study and outlines four linking sub-processes that represent how nurses deal with exposure to traumatic events in the community in which they live and work over time (Figure 3.1). A table depicts the main patterns of the sub-processes of staying strong and representative quotes (Table 3.1).

The fourth chapter contains a manuscript titled *Promoting a Culture of Safety for Rural Nurses After Exposure to Traumatic Events: Policy Implications.* This manuscript contains a research report that builds on the grounded theory study findings. The chapter outlines strategies, recommendations, and policy implications at the organizational, technological, and training levels with a focus on workplace health and safety. This manuscript is structured according to the journal guidelines of *Rural and Remote Health.* Table 4.1 presents the recommendations and policy implications to address the psychological impact of traumatic events in rural nursing practice.

The fifth chapter provides a summary of the study findings, contributions the study has made to the current literature, recommendations for future practice, relevance to clinical practice, and implications for future research. It also outlines the study limitations and presents the overall conclusion.

The final section of the dissertation contains the research proposal documents that were submitted to the University of Saskatchewan Behavioural Research Ethics Board and were utilized to conduct the research. University of Saskatchewan Ethics Approval was attained through the Advisory Committee on Ethics in Behavioral Science prior to commencing the study, and an Ethics Approval Letter was received providing operational approval for each of the rural settings within the Saskatoon Health Region (now Saskatchewan Health Authority) that fit the inclusion criteria for the recruitment procedures. The documents that were distributed to the recruitment collaborators at each site include the *Recruitment Collaborator Email Template* (Appendix A) and *Introduction Letter to Recruitment Collaborators* (Appendix B). These documents introduced the study and requested collaborator support with participant recruitment. In addition, the *Recruitment Poster* (Appendix C) and *Pamphlet Explaining Study* (Appendix D) were provided for circulation at each site. These documents outlined the purpose and details of the study and provided the research team contact information. Additional documents included are the *Consent to Participate in the Study* to affirm participant understanding of the procedures

and their rights as a participant (Appendix E) and *Transcriptionist Confidentiality Agreement* to ensure the transcriptionist used to transcribe the audio recordings is held in the strictest confidence (Appendix F). Finally, for purpose of data collection, a *Demographic Form* (Appendix G), Interview Guide (Appendix H), Revised Interview Guide (Appendix I), and *Reflective Journaling Activity* (Appendix J) were utilized.

CHAPTER 2.0 Manuscript 1 - PSYCHOLOGICAL IMPACT OF TRAUMATIC EVENTS IN RURAL NURSING PRACTICE: AN INTEGRATIVE REVIEW

Citation: Jahner, S., Penz, K., Stewart, N. J. (2019). Psychological impact of traumatic events in rural nursing practice: an integrative review. *Online Journal of Rural Nursing and Health Care, 19*(1), 105-135. https://doi.org/10.14574/ojrnhc.v19i1.523 Reprinted with permission.

2.1 Relationship of Manuscript 1 to the Dissertation

Manuscript one describes the findings of an Integrative Review of the literature regarding the negative psychological impact of caring for others who have experienced a traumatic event in the context of rural nursing practice. The framework used followed the methodological strategy of Whittemore and Knafl (2005) to examine a diversity of research and methods, ensure a thorough literature search strategy was conducted, provide the primary sources and evaluation of the literature, and present a clear analysis and results. A variety of terms were identified to describe the rural geographical context and there was a lack of consistency in the terms used to describe the psychological impact of trauma. The main concepts linking trauma exposure in nurses were Post Traumatic Stress Disorder (PTSD), secondary traumatic stress (STS), compassion fatigue, and vicarious trauma (VT). The literature revealed a lack of evidence on the specific types of traumatic events that may impact rural and remote nurses, or the type of distress they experience. Furthermore, the integrative review highlighted concerns that rural, remote and isolated nurses may be at greater risk of the negative psychological effects of traumatic events over time and that exposure may have long-term consequences. Overall, there is a lack of evidence in this topic area and further research is required to better understand the psychological impact of traumatic experiences on nurses in the rural work setting, over time. The manuscript was prepared in APA format (Sixth edition, 2010) to follow the journal guidelines of the *Online Journal of Rural Nursing and Health Care*, and was published in April, 2019. Although the journal is an open source journal, permission was received from the Editor in Chief of the journal to include the manuscript in this dissertation (Appendix K). The Table and Figure numbers were modified to be consistent with the numbering system in the dissertation. As such, Table 1 is now 2.1, and Figure 1 is now 2.1. In addition, two in-text citations were edited for clarity.

2.2 Abstract

2.2.1 Background. Rural and remote nurses who practice in acute care often deal with traumatic injury and death in isolated practice with limited psychosocial support. The majority of research in this area has been conducted within urban nursing populations or non-nursing disciplines. Caring for others who have experienced a traumatic event may place rural and remote nurses at a greater risk of negative psychological effects over time.

2.2.2 Purpose. This integrative review will explore the evidence related to the potential negative psychological impact of caring for those who have experienced a traumatic event in the context of rural nursing practice.

2.2.3 Method. An integrative review of four health and social science databases was conducted using the framework by Whittemore and Knafl (2005). The main search terms included rural and remote nursing, vicarious trauma, secondary traumatic stress, post-traumatic stress disorder, compassion fatigue, trauma, and burnout. Articles published between 2006 and 2017 were identified and critiqued based on their scientific merit and applicability to rural nursing practice.

2.2.4 Results. Nine publications were found regarding rural and remote nurses' exposure to traumatic events, and the potential personal and professional impact of exposure. While occupational stress was evident within rural and remote practice, there is a lack of clarity on the traumatic stressors of greatest concern. Most notable was the limited application of a rural and remote nursing lens to explore specific events linked to trauma, and the diversity of concepts used to describe the impact of these experiences.

2.2.5 Conclusion. There are few rural and remote studies that have explored the psychological impact of caring for others who have experienced traumatic events. Further research is necessary to explore the specific psychological impact experienced by rural and remote nurses being exposed to traumatic events over time and the types of programs necessary to better support them to continue in their practice.

2.2.6 Keywords. rural, remote, nurses, trauma, vicarious trauma, secondary traumatic stress, post-traumatic stress disorder, compassion fatigue, burnout

2.3 Background

A traumatic event is defined by Health Canada (2007) as an extreme event that may occur in any location or form in which a "person is subjected to or witnesses; falls outside the range of

normal experience; is life threatening or could result in serious injuries; exposes the person to shocking scenes of death or injuries" and/or "could lead a person to experience intense fear, helplessness, horror or other reactions of distress" (Health Canada, 2007, p.1). Nurses who practice in rural and remote communities may be confronted with a higher incidence of traumatic injuries and death related to the environment (DesMeules et al., 2006; Peek-Asa, Zwerling, & Stallones, 2004; Shah, Hagel, Lim, Koehncke, & Dosman, 2011). Higher rural-remote mortality rates occur as a result of diverse farming practices (Shah et al., 2011), motor vehicle accidents (Simons et al., 2010), and delays in response time, incident recovery, and trauma care (Gonzalez, Cummings, Mulekar, & Rodning, 2006; Simons et al. 2010). There is concern that those who provide care for people who have experienced a traumatic event, may themselves be at risk for negative, transformative, and permanent psychological and physical consequences (Ford & Courtois, 2009; McCann & Pearlman, 1990; Pearlman & Saakvitne, 1995). There are many factors that place rural nurses at a higher risk and potentially make them more vulnerable to the impact of distressing traumatic events over time. Nurses in rural practice provide care for a broad range of people living in "sparsely populated areas" which "host most high risk occupations" (Winters, 2013a, p.58). They commonly work in isolation with limited support, and are expected to manage a diversity of complex patients across the lifespan (Kulig, Kilpatrick, Moffitt, & Zimmer, 2015; LeSergent & Haney, 2005). Dealing with higher rates of trauma and death is also complicated by the fact that many rural nurses both live and work in the same community, where limited anonymity and blurring of personal/professional boundaries is often the case (Lauder, Reel, Farmer, & Griggs, 2006; Misener et al., 2008). With personal knowledge of their community members, rural nurses are commonly immersed in all aspects of community life and are part of both formal and informal social networks (Nelson & Park, 2012). Given these dual or overlapping relationships, rural nurses are more likely to be intimately involved in traumatic events and witness to the suffering of their community members (Nelson, Pomerantz, Howard, & Bushy, 2007; Winters, 2013b). The literature exploring the potential psychological impact of formal care providers being exposed to trauma describes constructs such as vicarious trauma (Beck, 2011; Bercier & Maynard, 2015; Cieslak et al., 2014; Cohen & Collens, 2013; Dominguez-Gomez & Rutledge, 2009; Graham, 2012; Hensel, Ruiz, Finney & Dewa, 2015; Izzo & Miller, 2010; Mealer & Jones, 2013; Sabo, 2008; Sinclair & Hamill, 2007; Von Rueden et al., 2010), secondary traumatic stress (Adriaenssens, De Gucht, & Maes, 2015; Beck, 2011; Bercier

& Maynard, 2015; Cieslak et al., 2014, Dominguez-Gomez & Rutledge, 2009; Graham, 2012; Hensel et al., 2015; Izzo & Miller, 2010; Meadors, Lamson, Swanson, White, & Sira, 2010; Mealer & Jones, 2013; Von Rueden et al., 2010), compassion fatigue (Beck, 2011; Bercier & Maynard, 2015; Cieslak et al., 2014, Dominguez-Gomez & Rutledge, 2009; Graham, 2012; Hensel et al., 2015; Izzo & Miller, 2010; Meadors et al., 2010; Mealer & Jones, 2013; Sabo, 2008), burnout (Adriaenssens et al., 2015; Cieslak et al., 2014, Graham, 2012; Izzo & Miller, 2010; Meadors et al., 2010; Sabo, 2008), and post-traumatic stress disorder (Adriaenssens et al., 2015; Beck, 2011; Cieslak et al., 2014, Graham, 2012; Hensel et al., 2015; Mealer & Jones, 2013; Von Rueden et al., 2010). Although distinct from one another, these constructs are at times, used interchangeably, with overlapping conceptual definitions and/or varied use across occupational disciplines in mainly urban populations.

2.4 Integrative Review Method

A review of the published literature related to the psychological impact of exposure to traumatic events among rural nurses was conducted using Whittemore and Knafl's (2005) five stages of problem identification, literature search, data evaluation, data analysis, and presentation. This framework was chosen to guide the review as it allows for the incorporation of a variety of research designs including experimental and non-experimental research to develop a more comprehensive understanding of a particular phenomenon (Whittemore & Knafl, 2005).

2.4.1 Problem identification stage. A key initial aspect of an integrative review is to identify the background problem and the purpose of the review (Whittemore & Knafl, 2005). As was highlighted earlier, nurses who practice in rural and remote acute care settings may be at a higher risk for exposure to traumatic events in the context of their geographical isolation. Given the limited access to psychosocial support within these settings, they may be at risk for negative psychological effects over time. The terms/constructs used to describe the impact of this exposure are varied, with much of the research conducted within occupational groups other than nursing, and/or within urban practice settings. The specific research questions that guided this review were:

1. What terms/constructs are used to describe the impact of exposure to traumatic events for rural and/or remote nurses?
2. What are the potential occupational outcomes of experiencing traumatic events for rural and remote nurses?

3. What types of traumatic events are rural and remote nurses being exposed to, and which of these have the greatest impact?
4. What contextual factors are not being addressed in the literature from the perspective of nurses who provide care in rural and remote settings?

An additional purpose of this review was to inform key stakeholders regarding the potential occupational consequences of being exposed to traumatic events, which may guide the development of psychosocial and supportive interventions within a rural/remote context. Studies for this review were selected that focused on rural and remote nurses, and restrictions were not placed on having a clear definition of rural as a variety of terms have been used to describe the context of rural nursing, such as rural, remote, and isolation (Kulig et al., 2008; MacLeod, Kulig, Stewart, Pitblado & Knock, 2004; Misener et al. 2008).

2.4.2 Literature search stage. The second stage of the review process is the literature search stage which consists of rigorous, well-defined strategies to ensure that all relevant literature on the topic is included (Whittmore & Knafl, 2005). Search terms were chosen for this review based on those commonly used in the literature to describe the negative psychological consequences of being exposed to trauma (Adriaenssens et al., 2015; Beck, 2011; Bercier & Maynard, 2015; Cieslak et al., 2014, Cohen & Collens, 2013; Hensel et al., 2015; Izzo & Miller, 2010; Mealer & Jones, 2013; Sinclair & Hamill, 2007; Von Rueden et al., 2010). A comprehensive search of four electronic databases included a) Cumulative Index to Nursing and Allied Health Literature [CINHAL], b) Medline, c) PsychINFO, and d) Cochrane Library, with articles published between the years 2006 and 2017 targeted to capture the most recent literature. Keyword search categories included 'vicarious trauma', OR 'post-traumatic stress disorder', OR 'secondary traumatic stress', OR 'compassion fatigue', OR 'burnout', OR 'nurses', OR 'rural and remote.' The terms were combined with 'AND' for a more comprehensive search. The term 'nurse(s)' was then searched against other trauma related terms as major subject headings of 'post-traumatic stress disorder,' 'secondary traumatic stress,' 'compassion fatigue,' and 'burnout.' Additional search terms were found by harvesting keywords from articles with the major subject headings including 'trauma,' 'psychological stress,' 'occupational stress,' 'stress disorders,' 'mental health personnel,' 'psychosocial factors,' and 'mental health.' Each were explored using 'OR' with the search terms 'vicarious trauma,' 'post- traumatic stress disorder,'

‘secondary traumatic stress,’ ‘compassion fatigue,’ and ‘burnout.’ Phrase searches were then explored in pairs with ‘OR’ and up to all 5 concepts by title and abstract.

Finally, to ensure that all considered publications were relevant to rural and remote practice, the search terms ‘rural health care personnel,’ ‘rural nursing,’ ‘rural health nursing,’ ‘rural health care delivery,’ ‘remote nursing,’ ‘rural,’ and ‘remote’ were also explored. To further enhance the search, the subheadings of ‘trauma’ and key word ‘nurse’ were explored using the process of truncation to identify more suffixes. This comprehensive search strategy provided a thorough historical overview and ensured that all relevant literature was retrieved (Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009). Articles and Literature Reviews were included if: (a) they focused on the psychological impact of exposure to traumatic events, (b) included nurses in the sampling frame, (c) included a rural and/or remote focus, (d) the research design was either qualitative, qualitative, or mixed method, (e) the language of publication was English, and (f) the publication date ranged from 2006 to 2017. Articles were excluded if they were: (a) non-empirical, (b) unpublished dissertations or theses, or (c) focused strictly on urban practice settings.

Figure 2.1 outlines the search strategy and screening process where a total of 475 articles were initially identified during the keyword search, with two additional articles discovered through a search of the publication reference lists. Following removal of 3 duplicates, 474 abstracts were screened using the established inclusion/exclusion criteria. There were 407 publications that were excluded related to not having a rural/remote focus, not published in English, they focused on traumatized populations (e.g., mothers of sexually abused children), the area of research was not relevant as it had been conducted in unique environmental and socioeconomic conditions (e.g., Gaza strip, Rwanda genocide), the human service worker did not include or differentiate nurses from other health care practitioners, or they were newsletters/editorials. The remaining 67 articles were read in depth and screened for their applicability, further excluding articles focusing on midwives, coping, or those that employed a weak research design or were of poor quality overall. A total of nine rural nursing focused articles were subsequently selected for final review (see Hegney, Eley, Osseiran-Moisson, & Francis, 2015; Kenny, Endacott, Botti, & Watts, 2007; Lenthall et al., 2009; Terry, Lê, Q., Nguyen, & Hoang, 2015; Singh, Cross, & Jackson, 2015; O'Neill, 2010; Opie, Dollard et al., 2010; Opie et al., 2011; Rose & Glass, 2009).

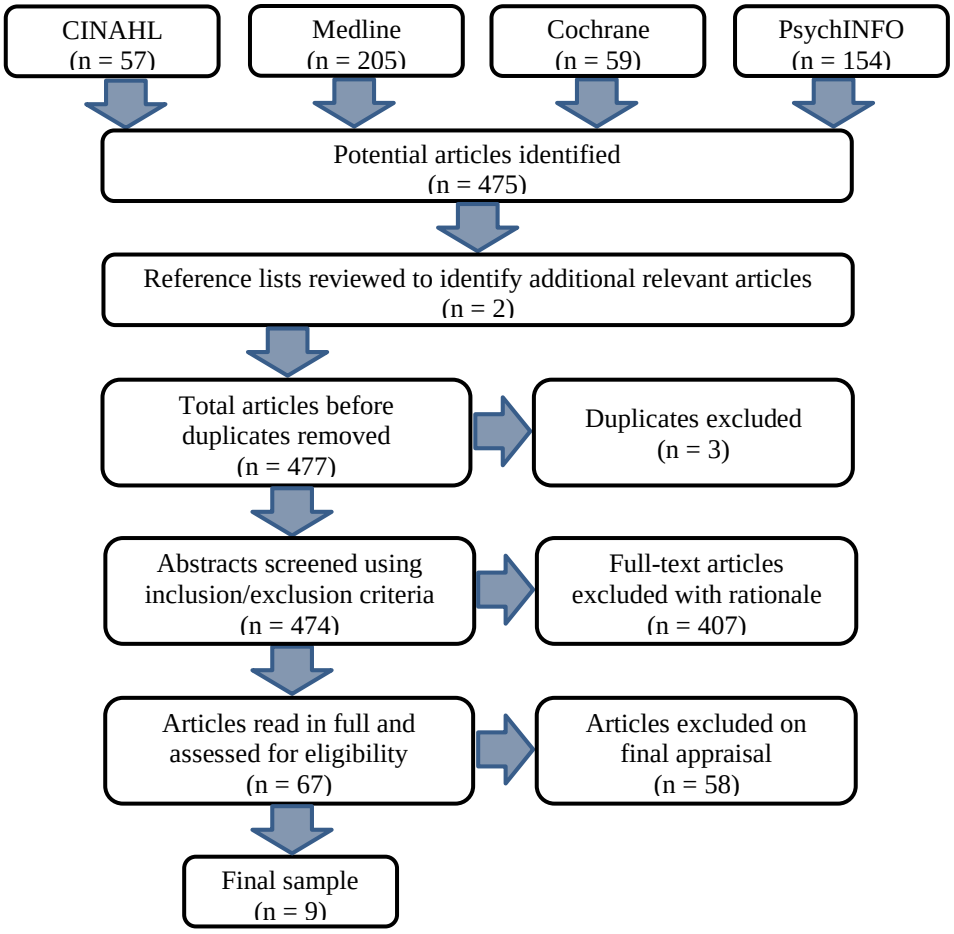

Figure 2.1 *Search Strategy*

2.4.3 Data evaluation stage. In addition to using Whittemore and Knafl's (2005) review method to evaluate the overall quality of each article, the research critique process outlined by Loiselle & Profetto-McGrath (2011) was also used to further systematically evaluate the nine articles chosen for review. Articles were reviewed based on substantive and theoretical dimensions, methodology, interpretation of findings, presentation, and writing style (Loiselle & Profetto-McGrath, 2011). The nine articles included in the final review outlined the significance of the problem (i.e., rural nurses may be at risk for negative psychological effects related to trauma exposure) or identified an important issue that was relevant to one or more of the four original research questions outlined. Each provided a clear study design that fit well with the research problem or purpose of the study, sound methodological approach, setting, and data collection method. There was congruence between the study purpose/research questions and study designs chosen. The sampling design was consistent with the method chosen and sample

sizes and response rates were clearly identified. The use of standardized tools and data collection methods supported the data quality. See Figure 2.1 for the search strategy.

Research findings, interpretation, implications and recommendations were made explicit. All articles contributed meaningfully to the current body of knowledge on the topic and have the potential to improve nursing practice. Of the nine articles, two utilized qualitative methods including an emancipatory methodology (Rose & Glass, 2009) and a narrative inquiry with a phenomenological approach (Terry et al., 2015). Five of the studies employed a cross-sectional design with survey questionnaires and use of standardized scales and both univariate and multivariate statistical analyses (Opie, Dollard et al., 2010; Opie et al., 2011; Singh et al., 2015; Hegney et al., 2015). Three studies used a thematic approach including a comprehensive literature review that presented patterns using a thematic analysis (Lenthall et al., 2009), a review article that outlined themes (although a thematic analysis approach was not made explicit) (O'Neill, 2010), and a study that specifically used a thematic analysis (Kenny et al., 2007). None of the research was conducted using a mixed method approach or longitudinal design for research over time. Despite some limitations, overall inclusion was based on the article strengths, merit, contribution to understanding, and whether they aligned with the aims of this review.

2.4.4 Data analysis. According to Whittemore and Knafl (2005), the data analysis stage involves the process of categorizing and summarizing the main conclusions identified about the phenomenon being studied. Due to the paucity of research in this area, the authors used their research questions to guide the analysis and summarization of content. A rural lens was used in this review with a specific focus on identification of the (a) specific terms used to describe the psychological impact of exposure to traumatic events over time, (b) potential occupational outcomes of experiencing trauma over time, (c) specific types of traumatic events that may be of concern in in rural/remote settings, and (d) gaps in the rural/remote literature and further research directions.

2.4.5 Review presentation stage. The final stage in the review process is data presentation, which involves the provision of explicit details from each of the primary sources summarizing the final conclusions within the review (Whittemore & Knafl, 2005). Table 2.1 presents the nine relevant articles according to their: (a) author, starting with the most recent year of publication, and country (b) purpose (c) sample, (d) design, (e) data collection method(s), and (f) key findings relevant to the review.

Table 2.1

Summary of the Findings from Literature Reviewed

Author Year Country	Purpose	Sample	Design	Data Collection	Findings Relevant to Research Questions
Hegney et al. (2015) (Australia)	Compare the well-being & perception of the practice environment of nurses in community, acute & long-term care across geographical settings	Registered nurses, enrolled nurses, and assistants N=1608 (urban n=1008; rural n=382; remote n=238)	Quantitative Cross-sectional survey method	Scales measuring depression, anxiety, stress, resilience, professional quality of life, perceptions of the practice environment	**Key terms/constructs:** Secondary Traumatic Stress (STS), Burnout (BO), Compassion Fatigue (CF), Compassion Satisfaction (CS); • STS was associated with burnout • Lower levels of STS in remote nurses, compared to urban or rural • No differences in stress, anxiety, depression, CS, BO, or resilience across geographic locations • Professional practice environment viewed positively by nurses across geographic settings and urban nurses rated nursing foundations for quality care higher than rural or remote nurses • Overall, 20% of nurses reported CF • Contributing factors, such as exposure to trauma, not identified
Singh *et al.* (2015) (Australia)	Compare the frequency and intensity of Burnout in rural versus urban nurses	Mental health nurses in rural or urban N=319	Quantitative Cross-sectional survey design	Scale measuring 3 aspects of Burnout (e.g., Emotional Exhaustion)	**Key terms/constructs:** Burnout (BO), Emotional Exhaustion (EE) • No difference in the level of BO in rural or urban nurses • Potential contributing or causal factors were dealing with emotional and behavioural disturbances vs. trauma exposure • Men experienced higher levels of depersonalization than women • Higher levels of emotional exhaustion in younger participants

Table 2.1 Continued

Author Year Country	Purpose	Sample	Design	Data Collection	Findings Relevant to Research Questions
Terry *et al.* (2015) (Tasmania)	Examine the safety of the workplace processes	Rural community nurses (N=15)	Qualitative Narrative inquiry with Phenomeno-logical approach, Thematic analysis	Semi-structured interviews	**Key terms/constructs:** Burnout (BO), Compassion Fatigue (CF) • Death & tragedy potential contributing factors in BO and CF • Geographical, environmental, and organizational workplace health and safety challenges • Emotional demands, responsibilities and expectations, social issues, and safety concerns are linked to psychological distress and emotional exhaustion • Lack of replacement staff to take leave may influence ability to access debriefing support and time away for psychological support
Opie *et al.* (2011) (Australia)	Assess and compare workplace conditions in two nursing populations	Remote and urban nurses in health centers and hospitals N=626 (remote n=349; urban n=277)	Quantitative Cross sectional survey design	Questionnaires measuring Burnout, Work Engagement, Nursing Stress, and Job Demands & Resources	**Key terms/constructs:** Psychological distress (PD), Emotional exhaustion (EE) • Higher levels of workplace PD and EE in urban nurses than remote nurses • High levels of stress in both remote and urban groups • Higher work engagement and job satisfaction in remote nurses • No difference between groups in job demands, job resources, or PD related to conflict with nursing colleagues • Workload correlated to EE • Contributing factors such as exposure to trauma are not identified

Table 2.1 Continued

Author Year Country	Purpose	Sample	Design	Data Collection	Findings Relevant to Research Questions
O'Neill *et al.* (2010)	Examine mental health service access in northern communities	Articles on northern isolated circumpolar communities 62 articles and 2 databases included in this review	Themes are outlined but Thematic analysis not explicit	Literature Review	**Key terms/constructs:** Secondary trauma (ST), Secondary traumatic stress (STS), Vicarious Trauma (VT), Compassion Fatigue (CF), Burnout (BO) • Empathic engagement with client's trauma over time may have profound effect on practitioners • Confusion in definition of terms with ST and CF emphasizing emotional responses; while VT focuses on changes to the provider's cognitive schema and perception over time, including sensory experiences • Embedded practitioners identified emotional, cognitive, and sensory disruptions and dedication and commitment were protective factors • Understanding northern cultures essential for competent practice • Contextual issues in northern mental health practice include isolation with challenges for both insider and outsider practitioner roles (e.g., visibility, lack of anonymity, exposure to intergenerational trauma)
Opie, Dollard *et al.* (2010) (Australia)	Examine the workplace demands and resources of remote nurses	Remote and urban nurses in health centers (N=349)	Quantitative Cross-sectional survey design	Questionnaire measuring Burnout, Work Engagement, Nursing Stress, and Job Demands & Resources	**Key terms/constructs:** Psychological distress (PD), Emotional Exhaustion (EE), Burnout (BO) • Contributing factors were high levels of occupational stress • PD and emotional EE were linked to emotional demands, staffing, workload, violence, responsibilities, expectations, isolation, intercultural factors, and social issues • Identified need to enhance workplace support and interventions to address stress and BO and reduce turnover such as improving employee assistance programs and debriefing

Table 2.1 Continued

Author Year Country	Purpose	Sample	Design	Data Collection	Findings Relevant to Research Questions
Rose & Glass (2009) (Australia)	Explore the emotional wellbeing of nurses who provide palliative care	Rural and urban community health nurses (N=15)	Qualitative Emancipa-tory Method	Semi-structured interviews Purposive sampling Reflective journaling	**Key terms/constructs:** Emotional strain (ES) • Workplace not always conducive to healing, increasing emotional strain • Emotional interactions increase risk of harm and strain on a nurse's well-being • Psychosocial aspects of care have a personal and professional impact • Strategies needed that promote emotional intelligence, foster self-care, and focus on balance
Lenthall *et al.* (2009) (Australia)	Explore stressors experienced by remote area nurses	Remote Primary Health Centers 26 studies included in this review	Meta data-bases analyzed: Thematic analysis	Literature Review	**Key terms/constructs:** Post-Traumatic Stress Disorder (PTSD), Vicarious Trauma (VT) • Exposure to violence and **t**raumatic incidents in the workplace increases the risk of developing PTSD and VT • Identified need for education, training and orientation
Kenny *et al.* (2007) (Australia)	Identify issues rural nurses face in providing psychological care to patients with cancer	Rural hospitals (N=19)	Qualitative Descriptive approach Thematic analysis	Focus group interviews Field notes	**Key terms/constructs:** Emotional toil (ET) • Impact on emotional well-being identified into 3 themes: task vs. care, supportive networks, and having dual relationships • Difficult to achieve balance between tasks vs. care • Support system needed that focuses on debriefing and forum to reflect, discuss, and receive support • Advantages and disadvantages to dual relationships • Fatigue and emotional exhaustion have a major impact on own well-being • Live and work in same community creates a supportive bond

2.5 Results

The review process yielded nine studies, which will be presented with headings that represent the four research questions.

2.5.1 Conceptual terms defining the psychological impact of trauma exposure. In relation to our first question for this integrative review, the nine articles identified a variety of conceptual terms used to describe the psychological impact of exposure to distressing events on nurses in rural, remote, and isolated nursing practice environments. Those identified were diverse in nature and included emotional toil (Kenny et al., 2007), emotional strain (Rose & Glass, 2009), psychological distress (Opie, Dollard et al., 2010; Opie et al., 2011), emotional exhaustion (Opie, Dollard et al., 2010; Opie et al., 2011; Singh et al., 2015), burnout (O'Neill, 2010; Opie, Dollard et al., 2010; Singh et al., 2015; Terry et al., 2015; Hegney et al., 2015), compassion fatigue (O'Neill, 2010; Terry et al., 2015; Hegney et al., 2015), secondary trauma or secondary traumatic stress (STS) (O'Neill, 2010; Hegney et al., 2015), vicarious trauma (Lenthall et al., 2009), and post-traumatic stress disorder (PTSD) (Lenthall et al., 2009). Although these concepts have been measured in studies involving nurses practicing in urban settings (Adriaenssens et al., 2015; Beck, 2011; Bercier & Maynard, 2015; Cieslak et al., 2014, Cohen & Collens, 2013; Hensel et al., 2015; Izzo & Miller, 2010; Mealer & Jones, 2013; Sinclair & Hamill, 2007; Von Rueden et al., 2010), they have not commonly been examined in the context of rural and/or remote nursing practice. This was made evident in this review with identification of only one study that referred to the psychological impact of exposure to trauma in the rural environment (Hegney et al., 2015), one study that focused on trauma in the remote environment (Lenthall et al., 2009) and one that highlighted trauma exposure in circumpolar isolated areas (O'Neill, 2010).

On review, there was a lack of consistency in the use of terms, with differing conceptual definitions, and/or diverse constructs being used interchangeably. For example, emotional toil was described as the result of practicing in an emotionally challenging role that impacts a nurse's psychological well-being (Kenny et al., 2007). It was considered a key issue in providing psychological care to others and influenced by supportive networks, dual relationships, and achieving balance between tasks and care (Kenny et al., 2007). Emotional strain occurred when opposing social forces created an inner tension or strain between the nurse's personal expectations of their professional practice and what is valued in the practice setting (Rose &

Glass, 2009), and emotional exhaustion was described as the result of job demands that cause stress when personal energy is expended (Opie, Dollard et al., 2010; Opie et al., 2011). Although the above concepts each have unique aspects, all are characterized by intense emotional feelings, and suggest the importance of attending to the competing personal and professional demands that many nurses in rural and remote practice may experience.

O'Neill (2010) described burnout as a gradual process that begins with high levels of job stress in situations that are emotionally demanding, while Singh et al. (2015) suggested that burnout involves mental and emotional exhaustion with increasing intensity which results in a sense of a lack of personal accomplishment. Burnout was also found to be related to workload fluctuations (Terry et al., 2015), limited resources, and lack of support (Opie, Dollard et al., 2010). While burnout was described as the potential outcome of emotional exhaustion (Opie et al., 2010; Opie et al., 2011; Singh et al., 2015), the literature included in this review does not clarify whether exposure to traumatic events may lead to rural nurses experiencing burnout over time due to high levels of stress or emotional exhaustion.

One concept identified as a consequence of working empathically with others who have experienced trauma was compassion fatigue, which led to lower work capacity, loss of interest, or intensified emotional responses to being empathetic (O'Neill, 2010). Compassion fatigue was noted to be commonly experienced by nurses (Hegney et al., 2015) and similar to vicarious trauma as it results in cognitive changes over time (Terry et al., 2015). O'Neill (2010) also highlighted the concept of secondary trauma or secondary traumatic stress as having a sudden onset and occurring when there is a connection or engagement between the caregiver and the trauma experience of the client and may result in symptoms of PTSD in the caregiver. Lenthall et al. (2009) described PTSD as being influenced by high demands and low resources, which overlaps with the constructs of emotional toil, emotional strain, emotional exhaustion and burnout. Lenthall et al. (2009) suggested that remote nurses may be at greater risk for PTSD with increased exposure to traumatic incidents in the workplace.

Vicarious trauma was also highlighted in the literature, and was viewed as cumulative in nature with gradual and permanent cognitive changes through the incorporation of the client's traumatic event (O'Neill, 2010). The range of effects can be detrimental as changes can be physical and/or psychological such as distortion in the areas of safety, trust, control, self-esteem, and intimacy, and may result in sensory changes (e.g., physical sensations, intrusive imagery) as

well as symptoms of PTSD (O'Neill, 2010). PTSD and vicarious trauma are both influenced by a high demands and low resource context in the work setting and like emotional toil, emotional strain, emotional exhaustion and burnout; are intensified by competing personal and professional expectations. It is evidence in this review that vicarious trauma, emotional toil, emotional strain, emotional exhaustion, compassion fatigue, and burnout share dimensional aspects, as they all focus on cumulative effects that may occur over time.

Those concepts that are specifically linked to trauma exposure are PTSD, secondary traumatic stress (STS), compassion fatigue, and vicarious trauma. In regard to viewing the above concepts through a rural lens, we have determined that while they are often described as unique constructs in the literature, they are difficult to distinguish from one another, as all but STS is characterized by gradual onset, creation of internal turmoil, require a considerable amount of personal energy to be expended, and become an occupational stressor as a direct result of external job demands. Overall, the concepts outlined in the reviewed literature vary from a behavioral, emotional, physical, and cognitive perspective; are not well defined within a rural context; and commonly overlap with each other in terms of conceptual clarity. It is evident that rural and remote nurses may be vulnerable to the detrimental effects of exposure to trauma in their work environment, and there is a need for a higher degree of conceptual clarity to better capture their unique experiences.

2.5.2 Potential occupational outcomes related to trauma exposure. The occupational outcomes explored in the cross-sectional studies were diverse and measured using a variety of standardized scales (Hegney et al., 2015; Opie, Dollard et al., 2010; Opie et al., 2011; Singh et al., 2015) and newly developed scales such as the RAN (remote area nurses) Specific Job Demands Scale developed by Opie, Dollard et al. (2010). Key concepts examined were occupational stress, work engagement, general health and burnout. Standardized scales included the Nursing Stress Scale (Opie, Dollard et al., 2010 and Opie et al., 2011), General Health Questionnaire (Opie, Dollard et al., 2010 and Opie et al., 2011), Maslach Burnout Inventory (Opie, Dollard et al., 2010 and Opie et al., 2011; Singh et al, 2015), Utrecht Work Engagement Scale (Opie, Dollard et al., 2010 and Opie et al., 2011), Maslach and Jackson Burnout Inventory (Singh et al., 2015), Job Content Questionnaire (Opie, Dollard et al., 2010 and Opie et al., 2011) and RAN-Specific Job Demands Scale (Opie, Dollard et al., 2010). Other concepts related to workplace well-being were measured using the Depression, Anxiety scale and Professional

Quality of Life Scale, Connor-Davidson Resilience Scale, Professional Practice Environment Scale, and Nursing Work Index (Hegney et al., 2015).

Five of the publications included in this review focused on the workplace environment (Hegney et al., 2015; Lenthall et al., 2009; Opie, Dollard et al., 2010; Opie et al., 2011; Terry et al., 2015) of which three identified stress as a significant occupational issue (Lenthall et al., 2009; Opie, Dollard et al., 2010; Opie et al., 2011), with one suggesting that workplace psychological stress is considered hazardous (Terry et al., 2015). Other studies explored the potential factors influencing nurse's health and safety, and emotional well-being (Terry et al., 2015; Rose & Glass, 2009; Kenny et al., 2007), and underscored a variety of negative emotional responses experienced by nurses who provide care to others (Kenny et al., 2007; Rose & Glass, 2009; Terry et al., 2015), specifically within the context of traumatic events (O'Neill, 2010). In addition, a number of work processes within rural geographical settings were identified as unsafe, impractical, or unsustainable, and safety concerns were linked to psychological distress (Rose & Glass, 2009; Opie, Dollard et al., 2010; Opie et al., 2011; Terry et al., 2015).

Overall, the dominant themes surrounding the occupational wellbeing of nurses in rural and remote settings included compromised workplace health and safety, occupational demands and job stress, and a lack of formal psychological support. Key areas of concern centered on organizational constraints (e.g., high workloads, burnout, lack of supervision, interprofessional conflict/bullying), the physical work environment (e.g., unsafe or hazardous state of client homes, unpredictable behaviour of animals, exposure to cigarette smoke), challenging client behavior (e.g., abuse, violence), and the geographical challenges of working in remote settings (e.g., travel distance, personal and professional isolation, inconsistent cellular access/communication).

2.5.3 Traumatic events and related stressors within a rural context. Unfortunately, this review revealed a clear lack of evidence on the specific types of traumatic events that may impact rural and remote nurses, which is of great concern. Psychological distress was linked to the physical, geographic, and organizational environments in which rural nurses work, the emotional demands of working with patients (Terry et al., 2015), management of life-threatening conditions, and challenges of dual relationships (Kenny et al., 2007). However, it is difficult to conclude to what degree or severity of exposure to traumatic events rural and

remote nurses may be experiencing, and what psychological impact these may have on them personally and professionally over time. Nurses in rural and remote settings were found to have a broad and complex scope of practice and commonly confronted with job stress, high job demands, and a hazardous work environment as a result of violence, death, and tragedy (Terry et al., 2015). In rural settings, personal and professional boundaries were blurred (O'Neill, 2010), as individuals commonly knew one another or had personal relationships in the community (Kenny et al., 2007). This was supported by Terry et al. (2015) who found that workplace health and safety was particularly challenging in rural and remote areas where death and tragedy are common, and burnout or compassion fatigue are seldom identified as areas of concern. For nurses who are embedded in their community, dual relationships were found to have both advantages and disadvantages (Kenny et al., 2007). High visibility and community scrutiny were identified as concerns as nurses in these settings are highly invested in the communities they serve. On the flip side, O'Neill (2010) suggested that rural nurses' dedication and commitment may act as protective factors. However, there is still concern regarding the opposing risk factors that exist in rural and remote settings such as the lack of access to mental health services, limited collegial support (Kenny et al., 2007), and reduced access to relief staffing to be able to participate in debriefing sessions or to take a personal leave of absence for mental health reasons (Terry et al., 2015).

2.5.4 Contextual factors not being addressed in the literature. A variety of terms were used in the reviewed literature to discuss the geographical context of rural living or non-urban nursing practice. Although geographical terms related to rural, remote, or isolated setting were noted, no study clearly defined 'rural.' An article by Kenny et al. (2007) categorized hospitals according to their size and range of services from A-E with the large urban hospitals represented as 'A' to the smallest hospitals represented as 'E'. Two articles used the Australian Institute of Health and Welfare (ARIA+) score to determine the level of remoteness and access to services by applying a range from 0-15 (Opie, Dollard et al., 2010; Opie et al., 2011). In a study by Hegney et al. (2015), the Australian Standard Geographical Classification was used to identify rural, remote, and major cities based on workplace postal code, and a study conducted in the northern isolated wilderness and minimally populated area was described as circumpolar (O'Neill, 2010). Lastly, Lenthall et al. (2009) characterized remote by geography, professional and social isolation, and the remote nature of practice and

defined the primary care nurse sample as "specialist practitioners that provide and coordinate a diverse range of healthcare services for remote, disadvantaged or isolated populations" (p. 208).

On review of the constructs through a rural lens, it was determined that there was overlap in the terms used to describe the psychological impact of working in rural and remote practice settings. The lack of definition and clarity of the terms related to rural and remote geographical settings to describe their unique nature is concerning. None of the reviewed literature focused solely on the impact of rural nurses being exposed to traumatic events. However, both review articles recognized the impact of exposure to traumatic events on those working in isolated and remote practice settings (Lenthall et al., 2010; O'Neill, 2010). While several articles focused on the context of rural nursing practice, only two studies discussed the potential impact over time (O'Neill, 2010; Singh et al., 2015). In addition, information on potential occupational outcomes of experiencing traumatic events for rural and remote nurses was limited although all of the articles noted general occupational health concerns related to working in rural, remote, or isolated settings.

Overall**,** a lack of evidence was found relating to the distress experienced by rural or remote area nurses, with the review highlighting concerns that rural, remote and isolated nurses may be at greater risk of experiencing a variety of negative psychological effects as the result of interactions with their work environment, and being exposed to traumatic events. There is a potential negative impact on personal well-being, psychological distress, and compromised psychological safety which may develop into conditions such as post-traumatic stress disorder and vicarious trauma (Lenthall et al., 2009).

In summary, very little rural and remote literature exists, there is a lack of a clear definition of rural, and most of the research to date has been conducted within countries other than North America. To better understand the impact of traumatic events on rural and remote nurses, additional research using interpretive methodologies (e.g., grounded theory, interpretive description, phenomenology) focusing on the meanings and experiences of individuals is necessary. This will assist in determining what specific traumatic events are most impactful within a rural and remote context from a broader perspective (e.g., Canadian, North American), and what conceptual outcomes are consistent with these experiences when considering the unique nature of rural and remote nursing practice.

2.6 Discussion

In this analysis, diverse terms emerged to describe the negative psychological effects of varied experiences encountered by rural, remote, and isolated nurses in the work setting, and the impact on their sense of personal and professional wellbeing. Through this review, it was also determined that much of the research has been carried out in Australia and Tasmania, with limited study in the context of rural and remote practice in North America (i.e., Canada, United States). In addition, it is difficult to determine the relevance of the findings to rural and remote practice settings from a broader, global perspective. This is especially concerning as the majority of rural nurses live in their primary work community (MacLeod et al., 2017) and experience unique aspects of nursing practice as a result of being embedded as both health care professionals and essential members of their communities (Kenny et al., 2007; O'Neill, 2010). There is a need to more fully explore the potential impact of exposure to trauma on rural and remote nurses, while recognizing the dual personal and professional roles nurses play, and attending to the potential cumulative effects over time. As was noted earlier, vicarious trauma is the only conceptual outcome that captures both the cumulative nature of the impact and results directly from exposure to traumatic events, and as such, may best describe the experiences of nurses who live and work in rural communities and are exposed to trauma over time.

The review also highlighted that high levels of psychological distress may have a negative and detrimental impact on the occupational wellbeing of rural and remote nurses, which is a significant workplace health and safety issue. More specifically, there was an impact on a nurse's sense of safety and well-being, challenges related to job demands and responsibilities, and concerns regarding a lack of availability of and access to formal psychological support. The evidence emphasized the need to develop better management strategies aimed to address more effective organizational support, increased clinical supervision, and implementation of practice models that include psychosocial interventions to reduce psychological distress and address safety concerns (Kenny et al., 2007; Rose & Glass, 2009; Opie, Dollard et al., 2010). Remarkably, only one study suggested the need for an organizational strategy to address workplace stress by developing a support system focused on debriefing (Kenny et al., 2007).

This review also supported our concern that nurses who practice in rural, remote, and isolated settings are confronted with a variety of traumatic events as a result of their daily work, which may have negative psychological effects. The extensive rural and remote area practice experience of the first author of this review, validates that those events involving serious injury and/or death are often viewed as having a negative impact, especially when considering the personal connections felt through various community ties. While death, dying, tragedy (Kenny et al., 2007; Terry et al., 2015), and violence (Hegney et al., 2015; Lenthall et al., 2009; Opie, Dollard et al., 2010; Opie et al., 2011; Terry et al., 2015) were commonly noted to have a negative psychological impact, the specific types or nature of the traumatic events or circumstances surrounding events were not described in the reviewed literature. There is concern that the psychological impact of exposure through a single event or through cumulative events was not reported and reflects a lack of awareness about the types of events or circumstances surrounding the traumatic events with the greatest negative impact.

Overall, this review revealed that exposure to traumatic events has a negative psychological and physical impact on nurses although there is limited research on the impact on nurses from a rural perspective and none on the long-term implications. While there were many parallels in the findings of the studies from the rural, remote, and isolated contexts, none adequately addressed the research questions posed or clarified the terminology used to describe the negative psychological impact of caring for those who have experienced a traumatic event in the context of rural nursing practice over time. In addition, there was minimal discussion on the physical impact or outcomes of exposure to traumatic events with the exception of stress, sensory changes, and fatigue. Overall, reports of the specific physical, mental and emotional outcomes of exposure to traumatic events for rural nurses were found to be limited. There is a gap in knowledge regarding this specific topic area and the global extant literature, and more consideration must be given to the complexities of rural nursing practice and the potential impact of exposure to traumatic experiences over time.

2.7 Conclusion

In summary, the psychological response of exposure to the trauma of others has been explored from various discipline specific foci within the context of urban health care delivery. However, there is less evidence exploring key issues related to trauma exposure from the perspective of nurses in rural and remote area practice. The limited literature available beyond

the context of rural practice in Australia or strictly northern settings highlights numerous conceptual gaps in the research. It is clear that further study is necessary to identify the types of traumatic events that rural and/or remote nurses most commonly face in the workplace, the potential psychological and physical effects of exposure over time, and to distinguish between the types of trauma in relation to degree of negative impact on rural nurses in an effort to better support their psychosocial wellbeing and foster healthy rural and remote work environments.

CHAPTER 3.0 Manuscript 2 - THE PSYCHOLOGICALLY TRAUMATIC EXPEREINCES OF RURAL REGISTEREED NURSES WHO LIVE AND WORK IN THE SAME COMMUNITY

3.1 Relationship of Manuscript 2 to the Dissertation

The second manuscript outlines the methodology of the study overall and describes the major findings regarding the psychologically traumatic experiences of rural registered nurses (RNs) who live and work in the same community. The manuscript was prepared following the journal guidelines of the *Journal of Clinical Nursing.* There is little research that has explored the psychological and physical impact of caring for others who have experienced traumatic events in the rural and remote context, and therefore a limited understanding of what is required to support nurses who have been affected. Charmaz's (2014) constructivist grounded theory methodology was chosen to conduct a qualitative study to determine the key concerns of rural nurses who have been exposed to trauma-related events, and how they deal with them. Findings highlight what is required to support and improve RNs' psychological health, including current management practices.

3.2 Abstract

3.2.1 Aims and objectives. This study explored how Registered Nurses (RNs) in rural practice deal with psychologically traumatic events when living and working in the same rural agricultural community over time.

3.2.2 Background. Rural RNs who are exposed to trauma may be at a high risk for psychological distress (e.g., secondary traumatic stress, vicarious trauma, post-traumatic stress disorder), especially in the context of isolated practice and slower emergency response times.

3.2.3 Design and methods. Charmaz's constructivist grounded theory was the chosen methodology for this qualitative study. Purposeful theoretical sampling was used to recruit 19 RNs from six rural acute care hospitals. Thirty-three interviews were conducted with 19 face-to-face and 14 follow-up telephone interviews. In addition, 14 reflective journals were returned by participants. Data were transcribed verbatim for analysis.

3.2.4 Results. Participants were exposed to a multitude of trauma-related events, with their main concern of being intertwined with these events for life. They dealt with this by *staying strong*, which included relying upon others, seeking inner strength, attempting to leave the past behind, and experiencing transformational change over time. Being embedded in the community left them linked with these trauma-related events for life. Staying strong was a crucial element to their ability to cope and to face future events.

3.2.5 Conclusions. The psychological implications of trauma-related events when working and living in rural acute care practice settings are significant and complex. Findings highlight the need for organizational support and processes, and may contribute to improved psychological services and management practices.

3.2.6 Relevance to clinical practice. Learnings outline contributing factors that impact the mental health of rural RNs, identify gaps in organizational support, and points to the need for policies tailored to meet the psychological and safety needs unique to rural nurses.

3.2.7 Keywords. Constructivist Grounded Theory, Vicarious Trauma, Secondary Trauma Stress, Post-Traumatic Stress Disorder, Rural Nursing

3.2.8 Impact statement.

- Reveals the multitude and complexity of trauma-related events that rural nurses are experiencing
- Contributes to our understanding of the impact of exposure to trauma-related events on rural nurses and the process of staying strong over time
- Outlines the lack of formal debriefing practices and mental health support needed to meet the unique needs of nurses in rural practice settings
- Provides a direction to assist rural nurses to recover from trauma-related experiences

3.3 Introduction

There is increased awareness of the impact and long-term consequences of exposure to psychologically distressing traumatic events for nurses (Dominguez-Gomez & Rutledge, 2009; Mealer & Jones, 2013; Missouridou, 2017). However, there is limited research exploring these events and their impact in rural and remote practice settings. Rural and remote nurses are commonly exposed to diverse and challenging situations such as traumatic events (Lenthall et al., 2018), are required to have skills and knowledge to make decisions and practice at levels beyond those expected in urban centers (Lee & Winters, 2012), carry enormous responsibility

(Kulig et al., 2008), often in geographic and professional isolation (MacLeod et al., 2004) and with limited support (Stanley & Stanley, 2019). Exposure to trauma-related events has the potential to negatively affect their psychological and physical wellbeing (Opie, Dollard et al., 2010) and may place them at risk of psychological harm.

3.4 Background

Nurses in general are exposed to a variety of situations of human suffering such as life-threatening or traumatic events experienced by their care recipients, which may negatively affect their physical and mental health (Dominguez-Gomez & Rutledge, 2009; Missouridou, 2017). A traumatic event is defined as "an extreme event that may occur in any location or form in which a person is subjected to or witnesses; falls outside the range of normal experience; is life threatening or could result in serious injuries; exposes the person to shocking scenes of death or injuries and/or could lead a person to experience intense fear, helplessness, horror or other reactions of distress" (Health Canada, 2007). The 'consequence of caring' for nurses impacted by traumatic events can have long-term ramifications and has been described using a variety of terms such as secondary traumatic stress (STS) (Adriaenssens et al., 2015a; Bercier & Maynard, 2015), vicarious trauma (VT) (Bercier & Maynard, 2015; Cieslak et al., 2014), compassion fatigue (CF) (Bercier & Maynard, 2015; Cieslak et al., 2014), burnout (Adriaenssens et al., 2015b; Cieslak et al., 2014) and post-traumatic stress disorder (PTSD) (Hensel et al., 2015; Mealer & Jones, 2013).

For rural nurses, there are unique aspects that may make them more vulnerable to psychological distress than their urban counterparts. Rural and remote areas have higher mortality rates than urban centers (Karunanayake et al., 2015) with higher rural mortality rates due to trauma (Gomez et al., 2010), most commonly as a result of motor vehicle accidents (MVAs), occupational injuries, drowning, suicide, and fires (Peek-Asa et al., 2004). Nurses in rural settings often manage these situations with little or no physician support for extended periods prior to physician arrival, or rely on physician direction by telephone, caring for patients largely alone (Baker & Dawson, 2013). Additional factors that may amplify the risk includes limited organizational support and minimal supervision, lack of ongoing education, and practicing outside of limits of training and beyond scope of expertise (Misener et al., 2008). This is further compounded by a sense of professional responsibility and accountability.

Nurses in rural practice settings often have personal knowledge of or relationships with those they provide care for and are commonly embedded in all aspects of the community and its social networks (Nelson, & Park, 2012). In addition, there is limited anonymity, therefore personal, professional, and ethical boundaries are often blurred (Misener et al., 2008). It is common for nurses in these settings to work in isolation and provide an extensive range of care, with minimal support, to a variety of individuals across their lifespan (Kulig et al., 2015), and face a variety of physical and psychological occupational health and safety challenges with insufficient support (Terry et al., 2015).

The combined aspects of having close rural connections with overlapping community relationships, the likelihood of being involved in a variety of trauma-related events of people they know, obligation and duty, the significant role of nurses in rural practice, and limited debriefing opportunities, may leave rural nurses more vulnerable and at greater risk of cumulative psychological and physical effects over time. There is a lack of research on how rural nurses deal with the psychologically traumatic experiences they encounter in rural nursing practice, and concern that those who have encountered traumatic events may be at greater risk of cumulative and everlasting psychological and physical effects.

The purpose of this study was to examine how rural nurses deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community over time; an issue that has been largely ignored. The specific aims of the study were to a) describe the psychologically distressing traumatic events experienced by rural RNs who live and work in the same rural community, b) develop a reflexive understanding of the psychological impact of exposure to distressing traumatic events on rural RNs, and c) construct a substantive theory focusing on psychologically distressing traumatic events in the context of rural nursing practice.

3.5 Method

3.5.1 Design. Charmaz's (2014) constructivist grounded theory methodology was chosen for this research to develop an understanding of the social processes by which rural nurses deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community over time. The qualitative research design situates the research in the natural environment and incorporates the societal and cultural aspects of how individuals formulate their world based on their own experiences and relationships (Charmaz, 2014).

Ethical approval for the study was obtained through the University of Saskatchewan Advisory Committee on Ethics in Behavioral Science (BEH: 17-192) and operational approval was obtained in each of the rural settings by the regional Research Ethics Board.

3.5.2 Setting. The study took place in Saskatchewan, a western Canadian province with a total population of 1,174,462 (Statistics Canada, 2019a). The health region selected for the research included rural hospitals that provided acute care services in communities that fit the Rural and Small Town (RST) definition of having a population of "individuals in towns or municipalities outside the commuting zone of larger urban centres (with 10,000 or more population)" (du Plessis, Beshiri, Bollman, & Clemenson, 2001). The geographical setting primarily included the industries of farming, ranching, and mining, where residents rely on single lane highways and secondary gravel roadways.

3.5.3 Sample. Participants were 19 RNs who were working in six rural acute care hospitals and resided in the same rural community. Purposeful theoretical sampling (Charmaz, 2014) was used for this study to select participants based on the following inclusion criteria: a) have current licensure as an RN with the Saskatchewan Registered Nurses Association (SRNA); b) provide direct patient care in a rural acute health care facility in the health region within the past year; c) work full-time or part-time; d) live in the rural community where they practice; e) have current or recent experience in rural nursing practice; f) speak English fluently. This study was not open to other nursing designations (e.g., Licensed Practical Nurses, Registered Psychiatric Nurses) as RNs hold a distinctive in-charge nursing role in rural acute care hospitals, work independently, and are responsible for managing and commonly leading when dealing with trauma-related events.

Prior to recruitment, study information was shared with and support was obtained from the Directors of Integrated Health Services who oversee the rural health care facilities of each of the targeted rural settings. Once all operational approvals were obtained, telephone contact was made with each of the six rural site managers and/or representatives designated by the organization to discuss the research project, arrange individual hospital presentations, and identify local recruitment collaborators who had knowledge of the nurses in acute care practice. Study packages were mailed to each site for local distribution and included a letter introducing the study, pamphlet outlining the purpose and details of the study, examples of interview questions, researcher contact information, and a recruitment poster. Electronic duplicates were

offered, and provided if requested. Local recruitment collaborators were asked to disseminate the packages to potential participants who expressed interest and met criteria. This approach ensured that no participants were approached directly by the researcher and that participation remained voluntary. Recruitment presentations were conducted at rural sites that expressed interest to boost study engagement and answer questions.

During the initial phase of the research, seven participants who met criteria contacted the researcher to enroll in the study and were interviewed. The initial interview data were analyzed for ideas and patterns, and the main concerns of participants began to emerge. As the theory developed, theoretical sampling was used to further explore, refine, compare with new and existing data, identify gaps, and elaborate on the ideas and patterns that arose (Charmaz, 2014). The theoretical sampling process in grounded theory directs the researcher where to go based on data analysis (Charmaz, 2014). As more details and observations about the nurses' experiences emerged and theoretical direction became clearer, the original interview guide was modified and refined to conduct a second group of interviews to clarify relationships and refocus on what was most relevant (Charmaz, 2014). Recruitment collaborators were asked to help identify additional potential participants to fill the gaps in the ongoing analysis. Another five participants were enrolled with this process and an additional seven participants self-enrolled in response to the original recruitment efforts. The second group of interviews searched for further contrasts and focused on refining the tentative categories, sub-processes, and theory development until theoretical saturation was reached or no new information was collected to validate the theory (Charmaz, 2014).

Theoretical sampling also helped identify four negative or contrasting cases that arose from the analysis of data from the full sample and contradicted the pattern identified (Charmaz, 2014), all of whom expressed that they found it hard to manage and challenging to move forward from previous traumatic events. All four had independently sought out professional support and had been diagnosed with PTSD which helped to inform the developing theory. Of these, one was able to move forward over time, and continue nursing practice although they moved into a leadership role, one dealt with it by transitioning to part-time work, one could no longer provide direct daily nursing care and therefore moved into a supervisory role, while the other recently went on sick leave and is no longer able to continue nursing practice.

3.5.4 Data collection. The research was conducted between November 2017 and May 2018 in six rural acute care hospitals across the health region. The primary source of data was collected through open-ended face-to-face interviews using a semi-structured interview guide, followed up with open-ended telephone interviews approximately two weeks later; a reflective journal exercise completed by participants approximately one to two weeks following the first interview; and researcher field notes and memos. Charmaz (2014) supports using a variety of data gathering approaches to further ideas with multiple views and strengthen the study. A total of 33 interviews were conducted which included 19 initial face-to-face interviews and 14 follow-up telephone interviews of RNs from six rural acute care facilities who lived and worked in their home community. Two RNs chose not to participate in the second interview noting that historical memories and emotions were triggered by the initial interview, and three RNs stated they had nothing more to add. Interviews were conducted at a time and location agreed upon by both parties. Face-to-face interviews ranged from 90 - 150 minutes, and follow-up telephone interviews ranged from 30 - 45 minutes.

Prior to the interview, participants were reminded that participation was voluntary, the consent form was signed, an overview of the study was provided, and all were reminded that they could stop the interview or withdraw from the study at any time. A demographic form was completed to provide social and contextual information and was useful in establishing initial rapport. Participants were informed of the potential risk of the interview triggering an emotional response and memories of past events and were informed that Employee and Family Assistance Program (EFAP) was available to them at each data collection point, and at the time of study closure. The initial interview guide focused on a) the most psychologically impacting traumatic experiences of RNs, b) how they dealt with the event, c) types and level of supports in place, and d) the impact of time.

Interviews were audio-taped and recorded for primary data, field notes were used to note subjective and descriptive details and created the basis for memos which documented the developing ideas, relationships, and categories (Charmaz, 2014). Participants were asked to document their thoughts and experiences through reflective journaling approximately two weeks following the first interview as an additional source of data (Charmaz, 2014) and to assist in developing a more in depth understanding of their experiences (Charmaz, 2014). Journaling instructions included reflecting on: a) what stood out most from a recent exposure, b) historical

exposures not discussed during the interview process, c) how they were supported by peers, and d) perceptions of leadership or organizational support. Prior to the second interview, process consent was obtained and the initial consents were reviewed to ensure accuracy. The second interview provided nurses an opportunity to clarify or contribute additional information from the initial interview and to inquire about whether an emotional response was triggered from the interview. All participants were informed that they could request a summary of the study findings.

3.5.5 Data analysis. Audiotaped interviews and reflective journals were transcribed verbatim, then cleaned for non-verbal utterances and reviewed for accuracy. The reflective journal entries outlined similar accounts of the nurse's experiences that were noted in the interviews. The written journal entries and audi-taped interviews were transcribed verbatum then were analyzed together using initial, focused and theoretical coding, consistent with constructivist grounded theory (Charmaz, 2014). Data were analyzed concurrently using the three main phases of coding (i.e., initial, focused, theoretical) in constructivist grounded theory (Charmaz, 2014). The initial phase of coding was conducted line-by-line and incident-by-incident to find connections and meanings, outline participant actions, and to identify processes and consequences using a constant comparison approach (Charmaz, 2014). Key points were re-visited, refined, and grouped into common codes and concepts to capture relationships and descriptions, and focus on patterns identified to form categories and to determine what may be further explored during the interview process (Braun & Clarke, 2006). These systematic actions centered around confirming and clarifying findings, and moving back and forth between inquiry, coding, and tentative categorizing, to identify properties within the categories. Focused coding was then used to integrate notable categories and revise the interview questions for further data collection (Charmaz, 2014). Lastly, theoretical coding was used to outline the relationships between categories and finalize the emerging theory.

Trustworthiness of the research was enhanced through the criteria of credibility, originality, resonance, and usefulness (Charmaz, 2014). Credibility was supported initially by the shared experiences of the primary researcher as a rural nurse and reciprocity with participants, which created a sense of comfort, familiarity, and authenticity. It was further supported by gathering in-depth information through interviews, journals, field notes, and memos, and by using the participant's own words in the analysis (Charmaz, 2014). Originality was demonstrated

by examining areas that had not been previously examined to gain insight and a broader understanding (Charmaz, 2014). Resonance was achieved by receiving validation of the importance and meaning of the research to participants during follow-up interviews (Charmaz, 2014). Finally, usefulness was achieved by providing practice recommendations and other intervention strategies designed to inform Occupational Health and Safety policies and improve the psychosocial support of nurses in rural practice settings.

3.6 Results

3.6.1 Sample. Of the 19 participants enrolled in the study, 18 were female and one was male. Ages ranged from 25-64 years. Five participants were degree-educated and 14 had a diploma as the highest educational attainment. Three participants noted that they also worked part-time in another nearby rural acute care hospital and four noted that they had previous experience working in northern remote nursing practice. The communities in which the participants were practicing were located at a distance of between 70–210 km from the nearest urban centre. The range of years worked in rural acute care was 3.5–34 years; 13 being employed full-time and six part-time. During theoretical sampling, a diversity of participants was sought, focusing on a range of ages, sex, and varied years of nursing experience from those new to the nursing profession to nurses with rural nursing expertise.

3.6.2 Social context of staying strong for rural RNs. The experiences of rural nurses were constructed through an interactive and inductive process and by interpretation of the data in the social context of participants and from the nurses' understandings in their broader environment (Charmaz, 2014). In this study, the sociocultural and physical context were intertwined with the emerging theory and revealed deeply rooted personal connections and community interrelationships present in rural nursing practice, with nurses having difficulty separating themselves entirely from the traumatic experiences encountered. As outlined in Figure 3.1, the thick orange perimeter represents the social context of the study which includes the accepted realities of nursing practice in rural settings and the nurses' perceptions of being embedded in the communities in which they worked. The social context of the study surrounds the process of staying strong with four linking sub-processes representing how nurses deal with exposure to traumatic events in the community in which they live and work, over time. Table 3.1 outlines the main patterns of the grounded theory sub-processes of staying strong and representative quotes.

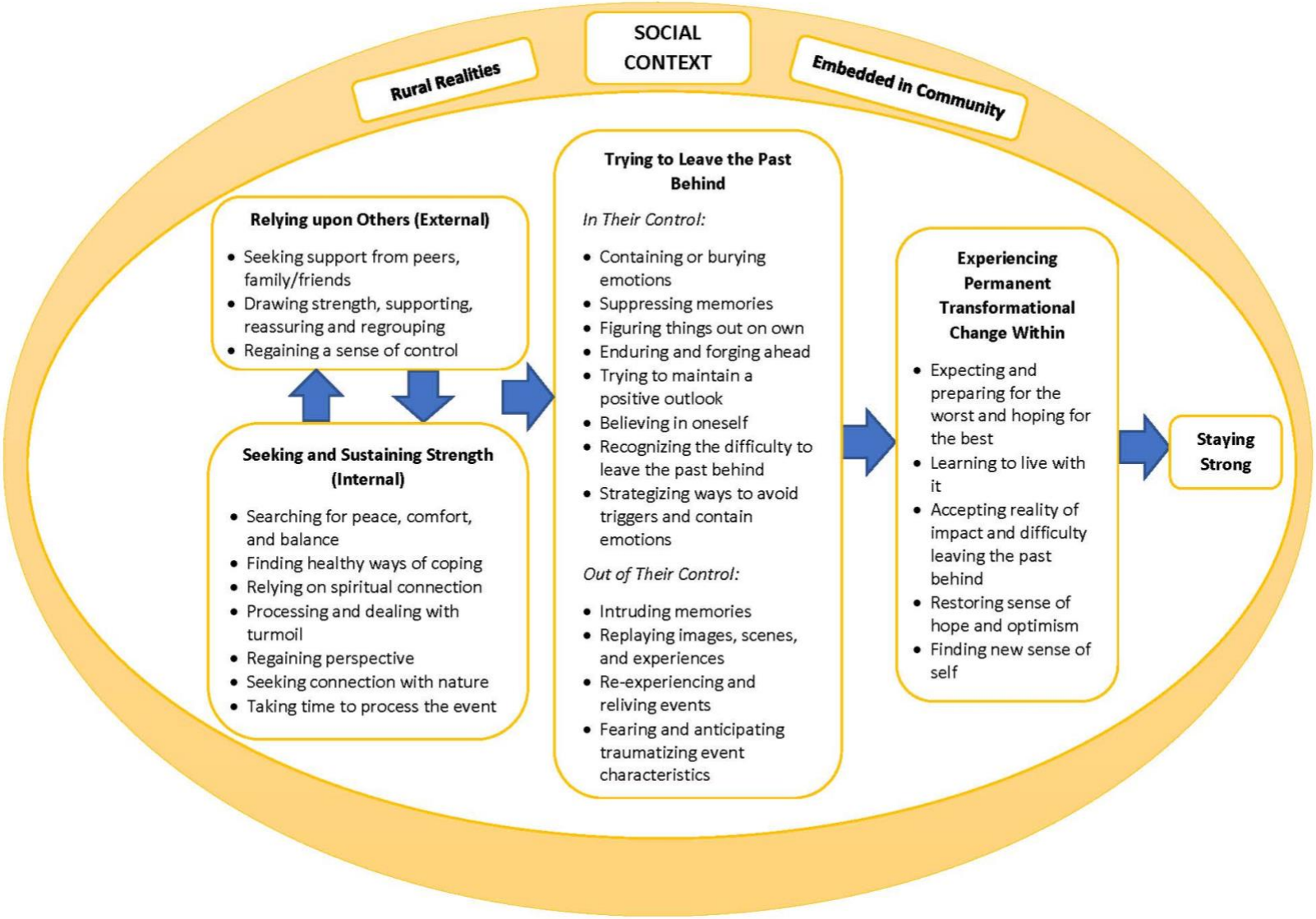

Figure 3.1 *How Rural Nurses Deal with Exposure to Distressing Traumatic Events*

Table 3.1

Main Patterns of the Grounded Theory Sub-Processes of Staying Strong and Representative Quotes

Category	Representative quotes
Pattern 1: Relying on Others	"Informal debriefs…found really those almost to be the most beneficial because you just sort of went through everything again, hashed everything, and so at the end of the day you knew that you didn't do something bad, that it wasn't your fault."
	"Sometimes think we can do it all by ourselves then we realize well, no we need help. We can't, we need help from coworkers."
	"Everybody is just so supportive and everybody's right with you and everything's good and we talk about things."
	"The LPN was really great and she kind of took over for me. She could see that I was…dumbfounded…blank …you're not crying, you're not angry, you're not doing, but she could see that. She was just like, 'I'm going to finish your medications for you this morning.'
	"Whoever you're working with, we would talk…you know for an hour after whatever just to discuss what had happened, what we could have done differently."
	"You help each other through those times because it isn't easy."
Pattern 2: Seeking and Sustaining Strength	"I do…yard work…long walks with the dog, just avoid the idle times, because I find the idle time for me is often not a good time"
	"I…say a prayer every time I go to work"
	"You learn how to deal with them differently [over time] and how you internalize it."
	"We are expected to be the caregivers, not the care receivers. And so, when it comes to, "Do you need somebody to help you, to look after you, to talk to you?" The answer is usually, "No. This is just what we do. We keep going."
	"I had the [other] nurse tell me, if this is too much for you, step aside…you don't need to help me wash her up, I get it if this is too much for you…I was…no I'm no wimp of course I have to be here, of course I have to help you. I'm not going to let you wash this little girl up yourself, you…put on a, the brave face and do what you have to do… what if would have said oh this is too much for me, then who was going to do that…you really don't have a choice…There's nobody else. There's me and you so, if we both decided to leave then who's responsible for this? It's the stress that almost pushed me over the edge, and, I've had to, really shake myself to bring myself back."

Table 3.1 Continued

Category	Representative quotes
Pattern 3: Trying to Leave the Past Behind	"You stuff it down because you have to because you're going to the next room to deal with a crying child, or a frightened parent, or a scared Alzheimer elderly patient."
	"You just kind of put everything in the back of your head. And then maybe a week later, so you're at home and you drop something. And then you cry because you held it off for a week. So it just kind of bubbles up at random times and it might not even be related to what you're doing, because you didn't get to properly grieve when it happened."
	"I have do not resuscitate on my arm. Dead is dead…Lives ruined, smashed, and shattered…I just don't want my kids to have to deal with that…my kids just know me so thoroughly that, we have talked about this so much because of what I've seen, because of what I've been through. I just wouldn't want anybody I love to go through that…It changed my outlook on CPR."
	"It makes it a little bit easier to put things into their little boxes in my mind…like, the robot motions, the things that you do for everybody, and then we can deal with the emotion after. But I've gotten better at kind of putting my emotions aside in order to deal with the things that need to be dealt with at that moment."
	You're able to numb it out or you can put it behind, because you have to move forward. That doesn't stop you, but it doesn't go away, either. I guess this is the career path that I'm in."
	"You always have that image in your head"
	"You think you're over, or past, or through things…it's that these feelings resurface that…I remember that surprising me 'cause I thought, where's that coming from where's that thought coming from. I haven't felt that, you know, for so many years, like it's, that kind of the rawness of the emotion that goes with that kind of a loss…what is this?"

Table 3.1 Continued

Category	Representative quotes
Pattern 4: Experiencing Permanent Transformational Change	"I have since had pediatric patients and…I don't touch them really…I had this little one and I was just so afraid to pick them up, I never picked her up the whole shift… my oldest sister is expecting her first one and I am a little terrified of being an auntie, of having a little one in my life that I would be responsible for…it could happen to any family. And you know, it's like I said, terrifying to think that it could happen again or that you could possibly relive it in some way."
	"I am a little blinded to how it affected me…I had this one terrible, traumatic experience and now I hate kids…I don't want the possibility of another child dying on, on my behalf… now fearing the future with pediatrics, which I should not be."
	"Definitely it has continued, to affect you in the way where, it becomes you."
	"Things still stay with me."
	"I couldn't shake it…you thought about it all the time. You could see it all the time."
	"It's made me a more compassionate, empathetic person…more sensitive to what they're going through personally…a lot more compassionate to people's pain and suffering, and what they go through. And I think it's made me strong. I think it has given me some strength at the same time, to be supportive to people, to be able to give people support through tough times."
	"It changes who you are."

The realities of working in a rural setting for the participants included perceptions of having minimal onsite support and isolated practice, lack of resources when required, limited or absent physician support, EMS transport challenges or deficits, and the requirement to be capable and competent to deal with any health care scenario presented, regardless of the patient's age or circumstance. Inadequate leadership support and understanding were also viewed as the realities of working in rural settings as nurses usually did not receive the support required following traumatic events and perceived themselves as less of a priority than nurses in urban settings. For example, if debriefing was provided, it was commonly delayed, limited, or the providers lacked skillsets to debrief or were insufficiently prepared. In addition, little guidance beyond the EFAP program telephone number was offered, no follow-up was received after events, and staff relief or coverage immediately following incident involvement was non-existent given the lack of available resources in rural practice settings. Being embedded within the communities in which they lived and worked was also part of the social context of the study. The rural nurses expressed a sense of professional obligation, loyalty, and duty to the community, which contributed to a high burden of responsibility during both work and off-duty hours. This was especially difficult and created a sense of failure when interventions or outcomes were unfavorable or nurses were unable to provide appropriate care to other patients while being actively involved with traumatic events. The ability to stay strong was further complicated when situations in their personal life created instability (i.e., marital breakdown, family illness, personal health changes).

3.6.3 Trauma-related events experienced. The most common trauma-related events noted by nurses were a result of motor vehicle, occupational, agricultural, industrial, and recreational vehicle accidents, child abuse or neglect; and, violence-related incidents. Traumatic births, drownings, suicides, fires, violence and abuse, and injury/death caused by animals were also shared as most significant. The types of incidents found most impacting were described as death and dying, and injury loss that were visually disturbing or gruesome in nature (i.e., de-gloved or severed limbs, leaking brain matter, self-inflicted gunshot wounds) and/or those in which they had a personal relationship or association. One nurse stated, "I was thinking, my son is this age, and I can't believe nobody came…that broke my heart." Nurses noted that events which had the most profound impact on them were situations with individuals that were young (e.g., infants, children, adolescents) at the time of injury or death, disturbing circumstances

around the death or loss, severity of traumatic injuries, exposure to a high number of trauma-related events and deaths, suspicious nature of death, and family or loved ones in attendance during treatment and/or resuscitation efforts. In addition, physical violence, aggression, and threats, either witnessed or experienced, instilled fear, anxiety, sense of vulnerability, and lack of control of the situation. Vulnerability was more extreme when working alone, especially at night, when there was more than one individual expressing threats, and when alcohol or drugs were involved.

3.6.4 Main concern - being intertwined with traumatic events for life. The main concern for rural RNs was recognizing that they were 'intertwined with the traumatic event for life'. The impact of the experiences was influenced by the interrelationships and emotional connections nurses have with people in the community and specific characteristics of past encounters and current events with negative psychological impact. The complex dynamic of living and working in the same community inhibited their ability to put the past behind them. The community connections presented constant unexpected reminders that led to the nurses to relive the trauma-related experiences, which became an obstacle to moving forward. One nurse explained "I was an emotional disaster, and then again…you see grandma at the Co-op getting groceries…because we have that bond…it's in your face, because she works at the home hardware, so every time I walk in there, I see her, and I think of her." Nurses are embedded in their community and describe it as their home, although they may feel isolated with few or no employment options elsewhere to avoid constant reminders of the events. The ramifications of exposure to traumatic experiences are far-reaching, long-term, and inescapable for rural nurses as they will continue to deal with ongoing trauma-related events in the workplace and will continue to deal with individuals directly involved and/or known to them in the community. These factors cause ongoing underlying turmoil and contribute to the profound negative effects on their psychological, physical, spiritual and social well-being, and ability to cope.

3.6.5 Social process - staying strong. The rural nurses acknowledged the psychological impact of exposure to traumatic events in their work and dealt with being intertwined with the events for life through the social process of 'staying strong.' Figure 3.1 outlines the theoretical model of 'staying strong' and highlights four linking sub-processes which are 'relying upon others,' 'seeking and sustaining strength,' 'trying to leave the past behind (including what was in and out of their control),' and 'experiencing permanent transformational change within.' Nurses

were actively involved in ‘staying strong’ by choosing a forward focus regardless of previous, current, and compounding events encountered over time. In this diagram (Figure 3.1), the arrowhead illustrates the directional relationship with the left to right arrows showing the direction of how nurses move toward staying strong over time. The interchanging arrows between the sub-processes of nurses relying upon others externally, and seeking and sustaining strength internally occurs soon after the event, and reflects how these processes occur concurrently to make sense of, and deal with, the immediate impact of traumatic events. In an effort to move forward, nurses immerse themselves in their work and daily lives, harness inner strength through means they find most helpful to them individually, and attempt to suppress the painful memories and leave the past behind. Despite these strategies, disturbing and intrusive memories and emotions often resurface involuntarily. Over time, nurses undergo a transformational change and growth within themselves, and develop a sense of becoming stronger. Nurses realize that they cannot leave the past behind and that they have been permanently affected by the trauma-related events, leading to a new sense of self. One nurse shared that [she] was “able to move past the situation although [felt] impacted for life.” Detailed descriptions of the sub-processes are outlined below.

3.6.5.1 Relying upon others (external). The first sub-process related to how nurses deal with exposure to distressing traumatic events was ‘relying upon others’. Nurses report a lack of immediate formalized support from their organization and therefore seek out and rely on informal support from their peers, family and friends. One nurse stated “we can't handle it all by ourselves sometimes,” while another stated, “we try to help each other, but are not professionals in this field.” Immediately or soon after the event occurs, nurses will often informally and briefly share their experience with one another. Frustration is also expressed about the inability to even share information or debrief with peers who were not immediately and directly involved in the same events because of workplace confidentiality. The acknowledgement of each other’s turmoil and grief seems to help them deal with the impact immediately following the event and help cope long after events occur. One nurse stated [you] “draw your strength from each other” and another noted, “I think there’s a lot that suffer in silence.” Nurses rely on, entrust, and confide in one another to find comfort and seek reassurance, and because peers who share similar experiences are seen to have greater insight and understanding. One nurse stated that they otherwise, “don't have that understanding…because…it's so foreign” and “have no idea what you're talking

about.” Supporting one another strengthens their relationships and deepens their connections, “you become like a family because you're the only ones that know what you've been through.” Dialogue and reflection among peers immediately following events helped validate their feelings, was seen as a safe and supportive environment, was described as therapeutic, offered timely psychological support, and was perceived as integral to healing.

Beyond emotional support, many nurses rely on peers for performance feedback and guidance because they second-guess and doubt themselves and their actions, with one stating “you've done your best, you always wonder is there something else I could have done.” Participants did not feel or see themselves as strong in the immediate aftermath of the traumatic event, however, the process of sharing and debriefing with peers is an immediate and informal avenue that allows nurses an opportunity to release, regroup, and regain a sense of control. The peer relationships are their primary support that fosters overall workplace bonds and were what sustained them through the most difficult times. Nurses also seek support from family and friends describing them as a key source of emotional safety, security, and comfort. The challenge arises with the inability to share details of their experiences as they risk identifying patients/families and breaching confidentiality. One nurse stated, “this secrecy, this dome of silence over us is just crazy sometimes…we can't even talk about this stuff.”

3.6.5.2 Seeking and sustaining strength (internal). In addition to the external process of relying on others, the rural nurses also emphasized a necessary and co-occurring internal sub-process of ‘seeking and sustaining strength.’ This involved a process of self-reflection in their search for a sense of peace, comfort, and balance from their emotional dissonance and turmoil. The participants identified a variety of actions/activities they used to help them process their experiences internally, counterbalance adverse emotions and thoughts, mitigate impact, and restore a sense of well-being. Some drew strength from their faith or through prayer and spiritual connection, others by connecting with nature and the environment, and some through interactions and relationships with animals. One nurse stated, “if I didn't have my faith I don't think I would have survived”, another noted that they say a “prayer every time I go to work”, and another stated they found it through “mother nature strength.” A number of reflective and general activities were utilized by the nurses, which helped them in seeking and sustaining strength. Some focused on healthy practices which included listening to music, meditating, exercise, and journaling, or by connecting and embracing nature through activities such as

gardening or walking. Many nurses relied on the commute to work which allowed them time to psychologically prepare for what may be encountered during their upcoming workday (or shift). Other nurses used the commute back home to regain perspective and make sense of their experiences, rationalize, and unwind from the day's events. One nurse stated, "I like the drive to work, because it…gets you prepared" and another stated "it's a time for me to reflect back on the shift, and off load any junk or at least attempt to." One nurse stated that she sat in the parking lot and, "stayed up for hours in the dark alone after the shift was over trying to sort it all out."

3.6.5.3 Trying to leave the past behind. The nurses were 'trying to leave the past behind' which was a very complicated and difficult sub-process fueled by a rollercoaster of emotions. It entailed aspects that were both within their control and other aspects that they perceived as being out of their control. As nurses recalled the graphic descriptions and vivid details of trauma-related events, they had to try not to be consumed by the intrusive traumatic memories and visual reminders. Memories or flashbacks remained just below the surface and arose easily, and the distress associated with them was quickly reactivated. Many arose out of nowhere and without warning or conscious involvement. The prompting or triggering of memories often occurred by unexpected contact with individuals in the community who were associated with previous traumatic events, while attending social activities, or through re-exposure to new traumatic events that had similar characteristics to a previous impacting event. Nurses re-played or re-lived the memories over again, with one nurse stating, "it happened 25 years ago, I still think about it today" and another stated, "it's almost 5 years ago, and it's still one of the first things you think of" while another stated "I couldn't shake it…see it all the time."

3.6.5.3.1 In control. The process of 'trying to leave the past behind' involved nurses taking time to figure things out on their own and take active steps to try to control the emotional impact of their memories tied to the traumatic events. Rather than confront painful memories, most nurses found it more helpful to bury their emotions and suppress the past. Suppressing the painful memories involved packing or pushing the memories away when they surfaced. For example, one nurse stated, "if you don't pack it down, you don't have the capacity to move forward," while another stated "you don't want to bring it up, you want to fight through." Nurses tried not to dwell on the negative emotions related to past experiences, to maintain a positive outlook and reconcile or make peace in order to move on and forge ahead. Nurses also felt that they had no choice or alternative to burying the past. One nurse stated, "we're just forced to

move on in the rural site…we have no other option" and another noted "you must get on to the next thing, there's always one thing after another, always something else that's got to be dealt with so you put it to the back somewhere…to get through your shift. Might hit you at the end the shift or a few days later." For a few nurses, there was fear and apprehension of what might happen if they allowed themselves to open up and grieve or express their emotions openly. One stated, "[you] don't want to start grieving at work, because then you don't know where that's going to lead, so you just kind of button everything up and keep going."

3.6.5.3.2 Out of control. Moving toward 'staying strong' was impeded when memories surfaced that were out of the nurses' control. Intrusive memories crept into the nurses' consciousness, with some re-living the sensory experiences associated with the past events. Graphic images and scenes of the events replayed in their minds, along with the intense emotions (i.e., fear, anxiety) once tied to the experiences. Nurses stated, "you just cry the first few weeks, every time you close your eyes, you could see…replay it" and "you always have that image in your head." Exposure to smells or scents, sounds, and visual reminders inside or outside of the work-setting also triggered a profound psychological and/or physical response to specific past events (i.e., features of children's shoes and clothing, blood dripping off the stretcher). One nurse stated, "I'll never forget that smell…if I'm shopping or I'm outside or doing something, I'll … get a whiff of that…you are instantly drawn back into that little trauma room…that vision of that little girl on that blood-soaked pillow." Aspects of PTSD such as reliving the trauma and re-experiencing past events were noted among some which contributed to increased fear and anxiety in anticipation of potential future events. One nurse stated, "I hate dealing with kids now, I don't want a pediatric patient…I don't want to see anything worse than that," and another stated "absolute terror that it's your child that's gonna be coming through the doors." Other nurses described their fears or sense of terror about incoming injured with one stating, "they didn't tell us where they were coming from and I remember thinking, I had to phone my babysitter and just make sure everybody was okay there without breaking confidentiality…what if it's my kid."

3.6.5.4 Experiencing permanent transformational change within. As nurses continued to move toward staying strong, they felt that they had experienced a process of inevitable transformational change within themselves. This sense of transformation that they experienced involved recognizing, acknowledging, and coming to terms with how much of a psychological and emotional impact the experiences had on them personally and professionally. One nurse

noted that exposure to traumatic events have, “affected me for the rest of my life…it’s an accumulation.” Nurses respond by mentally preparing for and expecting the worst-case scenarios and hoping for the best at work to safeguard themselves to cope. Some nurses envision potential clinical scenarios based on learnings from previous experiences in hopes of achieving better outcomes if faced with similar future events. One nurse described the damage to relationships with family and friends as, “you have to mentally prepare yourself for what comes through that door…anything…anybody…even your own family.” Through this process, nurses also begin to develop an acceptance and perspective that they have no choice but to live with what they are feeling, and to endure and remain strong.

For some nurses, the impact is far-reaching, can be debilitating, and influences their world views and perspectives, and some of the decisions they make in their personal lives. One nurse stated, “you don’t get emotionally attached ever to anybody. I don't hug anyone. I don't touch anyone. I don't get near anyone.” The self-protective mechanism allows nurses to remain optimistic and find pleasure in the ongoing patient-nurse relationships. For other nurses, the transformation has made them more compassionate and understanding, and more mentally prepared for future events. Some also describe a sense of pride that they are able to deal with almost anything that comes through the hospital door and serve their community. This restores their sense of hope and optimism for future events having positive outcomes. Through this process, nurses find a new sense of self and are able to experience joy in their work. As nurses moved forward, they accept that being intertwined with the traumatic events for life is their new reality, and their ability to strive toward staying strong helped them prepare for and guard themselves from similar future events.

3.7 Discussion

The study reveals an array of challenges faced by nurses while working in rural acute care practice settings and presents a developing substantive theory of how rural nurses move toward staying strong and deal with their main concern of being intertwined with traumatic events for life. The findings provide a unique contribution to the literature regarding the occupational health and safety, risk management, and health and well-being of rural nurses, as well as the influence on patient safety. The complex community connections, personal associations, and transparency within the community, adds to the sense of social responsibility

and accountability for actions and clinical outcomes. This context fuels the determination to contain their emotions, endure, and forge ahead.

3.7.1 Defining staying strong. In this study, rural nurses manifest the concept of 'staying strong' by drawing upon internal resources and inner strength. The concept is similar to research on resilience by Kulig and Botey (2016) which outlines the significance of individual characteristics to deal with and overcome adverse experiences. Rural nurses in this study were able to persevere, although they were unable to fully recover and commonly suffered in silence. Nurses perceived the delayed release of emotions until the end of their work shift or until being alone as having strength. Staying strong is also seen as their only option in rural settings given the lack of organizational support, isolation, inability to take time off work following impacting events to address mental health needs, and because of their strong sense of community commitment. As noted in others studies, rural nurses are attached and committed to their community because it is their home, commonly having family ties (Kulig et al., 2009), with extensive social connections and a sense of social responsibility (Paré, Petersen, & Sharp, 2017).

Nurses also noted limited opportunities to pursue work elsewhere and have resigned themselves to the fact that they must remain strong and persevere in spite of profound sufferings in order to continue in nursing practice and to deal with future events. In addition, nurses drew strength from one another and felt more mentally powerful with the support of their peers. Overall, most nurses did not deal with unresolved feelings to move toward staying strong but instead internalized their emotions to regulate and manage them, choosing not to deal with feelings that arose from the past, and remaining focused on moving forward to leave the past behind. This finding is supported by a study by Cecil and Glass (2015) who found nurses to have high levels of emotional awareness and self-regulation. Austin et al. (2009) found that nurses struggle with processing emotions when there are negative patient outcomes. A study by Missouridou (2017) also demonstrated that a masked emotional response may be a symptom of a nurse being overwhelmed and hiding personal trauma.

3.7.2 Relying upon others (external). The importance and significance of relying on others was a prominent sub-process of staying strong. Sharing among peers as an informal debriefing method was a predominant, integral, and beneficial factor in helping nurses navigate through traumatic experiences and situations. This finding supports a study by Shore (2014) who found that verbalizing their experiences enabled nurses to have an outlet. Research by

Moszczynski and Haney (2002) also noted that nurses felt validated when they shared their feelings with one another. Although the interaction is brief and often spontaneous and unstructured, it provides nurses an opportunity to take a step back from the event, and as described by Ullström, Sachs, Hansson, Øvretveit, and Brommels (2014), lifts the emotional burden. Nurses briefly engage in meaningful discussion with people they trust in a supportive environment and try to regroup (Copeland & Liska, 2016). The effectiveness of a peer support strategy was supported in previous studies by Dukhanin et al. (2018) and O'Hagan, Cyr, McKee, and Priest (2010) and aligns with best practice guidelines prepared by the Registered Nurses' Association of Ontario (2017) who note peer support to be an effective component to support recovery from trauma-related experiences. A peer support system is particularly important for rural nurses to draw strength and regain a sense of control given the lack of local mental health support available in rural centers (Canadian Mental Health Association, 2019), inadequate professional debriefing, and barriers in sharing experiences with family and friends due to confidentiality (Moszczynski & Haney, 2002).

3.7.3 Seeking and sustaining strength (internal). The sub-process of seeking and sustaining strength is a reliance on self in which nurses draw upon inner strength to find peace, comfort and balance, maintain control, and remain strong over time. Nurses in this study sought ways to achieve this by using or developing healthy self-care habits, for example, spending time embracing nature, nurturing spiritual connections, interacting with animals, and music. Through these methods, nurses are able to process and better deal with internal turmoil. This finding resonates with research by Lundman et al. (2010) who also noted that inner strength can be found through a variety of means including contact with nature and by having spiritual connections. Findings are further supported by Keng, Smoski, and Robins (2011) who found that self-care strategies such as mindfulness-oriented interventions that acknowledge previous experiences support overall psychological health while Rao and Kemper (2017) note that nurses who are focused on mind-body habits develop protective factors against stress and improve well-being. The ability to stay strong and manage their emotions is a critical component that enables nurses to protect themselves and maintain a sense of control. Overall, the ability to rely on inner strength is integral for nurses to manage and overcome immediate and ongoing episodes of trauma-related events and sustain a fulfilling career in rural nursing practice.

3.7.4 Trying to leave the past behind. Trying to leave past traumatic experiences behind is an essential sub-process in a nurse's ability to move toward staying strong and entailed aspects within and out of their control. Most nurses attempt to leave the past behind by controlling their emotions and suppressing memories as a way to deal with them, although research suggests this approach may have a detrimental effect on mental and physical well-being (Patel & Patel, 2019) as expressing emotions is necessary for personal and professional growth. Nurses in rural practice often live and work in the same community their entire lives and develop community relationships and interconnections, which makes contact with individuals connected to past traumatic events and dealing with future traumatic events inevitable. Nurses attempt to avoid contact or engaging in conversations in the community to avoid re-experiencing elements of past traumatic events and will strategize ways to ward off these triggers. Being embedded in the community is one aspect that makes it difficult for nurses to move forward as there are ongoing reminders of past events and they live in constant fear and anticipation of future events (Yonge, Myrick, Ferguson, & Grundy, 2015). In general, nurses recognize the difficulty in leaving the past behind, although they do so by keeping things to themselves, dealing with emotions on their own, forging ahead, and maintaining a positive outlook.

For many nurses, some aspects are out of their control as they are inundated with memories of past traumatic experiences, persistent emotional connections, and sensory reminders of past events (i.e., visual scenes, smells that trigger memories). The cumulative exposure and nature of their work places nurses at increased risk of developing secondary traumatic stress or PTSD and suffering from their negative effects which may inadvertently impact patient care (Mealer & Jones, 2013) and extend to interactions in their personal lives (Mealer, Burnham, Goode, Rothbaum & Moss, 2009). Exposure to traumatic suffering may also elicit deep emotions in nurses from past personal experiences (Missouridou, 2017) and empathetic engagement in the trauma of others may place them at risk for vicarious trauma (Tabor, 2011). In this study, several nurses were unable to move past the events. These nurses re-experienced symptoms triggered by cues associated to past events, and were diagnosed with and suffering from the debilitating long-term consequences of PTSD.

3.7.5 Experiencing permanent transformational change within. The psychological changes identified by rural nurses following traumatic events is supported by previous research by Bremner (2006) who found the psychological impact of trauma to be lifelong, with negative

and permanent changes in the brain. The changes or transformative process for some nurses occurs immediately, while for others, changes are manifested later, or over time. The transformation for several nurses influenced the ability to function in previous nursing roles as they could no longer deal with patients and trauma, while others remained strong and were able to continue in nursing practice. Many characteristics of this process are reflective of trauma-induced disorders such as PTSD or VT. Nurses with PTSD may exhibit a variety of changes such hypervigilance, hyperarousal, and avoidance (Mealer & Jones, 2013) or be preoccupied with fear and changes in their worldview (Daniels et al., 2011) while those experiencing VT may undergo a transformation of the self and altered perspective following traumatic experiences (Tabor, 2011). These findings are in contrast to a study by Malhotra and Chebiyan (2016) who reported positive changes from transformation and subsequent post-traumatic growth despite psychological impact. In response to traumatic events, nurses may experience both challenging and hopeful or positive transformational change, find meaning, and develop a new sense of self (Malhotra and Chebiyan, 2016).

Findings of the current study revealed that through the process of transformational change, nurses develop an awareness and begin to expect and prepare for the worst scenarios yet hope for the best, learn to live with their experiences, and come to accept the overwhelming and life-changing realities of their impact. Mealer and Jones (2013) found that nurses recognize that they have been permanently and profoundly affected by the traumatic events encountered and the long term and devastating outcomes, yet develop ways to transcend beyond the experience to successfully provide care to others. Over time, nurses develop a new sense of self and their sense of hope, meaning, and optimism is gradually restored and they acknowledge and accept that their experiences will continue to haunt them throughout their lives and that that they will never be free of the past.

3.7.6 Relevance to clinical practice. Study insights from the perspective of rural nurses will improve transparency and move toward acknowledging these realities in rural settings. Findings will enhance understanding of the risk of psychological impact related to exposure to trauma-related events as a result of their work, and may reduce stigma around nurses' mental health needs, highlight physical safety concerns, and inform administrators, policy-makers, educators, and government of the potential long-term mental health effects such as PTSD, STS, and VT. New approaches and strategies that are proactive and preventative have the potential to

influence the long-term impact of trauma-related events on nurses and improve their quality of life. These include education regarding trauma informed care, formal peer support training and programs, utilization of current technologies, and consistent, adequate, and timely debriefing by mental health professionals utilizing technology to provide a more immediate response. Additionally, relief from duty to address their own mental health needs, incident investigations with follow-up, and changes to Occupational Health and Safety practices and policies that are tailored to rural nurses' practice will help to identify and address the psychological impact of trauma-related events and support quality nursing practice.

Overall, this research highlights important factors that impact rural nurses in acute care practice, recognizes the impact is not limited to nurses and may extend to other staff and patients not involved, and contributes to understanding the complexities they face. Findings will assist leaders to identify areas to improve workplace wellness, and to develop, engage, and integrate more effective strategies by redesigning processes to better support nurses' psychological health to address broader system factors that enhance the psychological and physical safety of nurses and the safety and quality of patient care. The findings will help leaders and educators identify and better understand what causes psychological impact, the consequences of exposure, and assist in designing processes suited to the specific needs of nurses in rural practice settings. Improved and pro-active work-related interventions are required to address current occupational health standards to mitigate the risk of long-term impact. This can be achieved through the implementation of policies, procedures, and standardized practices that reduce psychological trauma.

3.8 Conclusion

This study addresses a gap in the literature and reasserts the magnitude of the impact of trauma and the range of challenges faced by nurses in rural acute care settings. It has illuminated factors that contribute to nurses' suffering, culture of endurance, long-term implications, and consequences of caring for others impacted by trauma. The influences of the social context and workplace support reflect how deeply personal, professional, and community lives are intertwined and how crucial these elements are to a nurse's well-being. Rural nurses play a crucial role in providing trauma care in rural communities, under difficult circumstances, and do so at a great personal cost. In spite of these complex elements, their fortitude does not waver, and they remain committed to providing care to their community. The process of 'staying strong'

explains how they deal with the detrimental psychological consequences of traumatic events and reveals an opportunity for leaders to utilize learnings to explore ways to address the psychological and physical health and safety of nurses in rural practice.

CHAPTER 4.0 Manuscript 3 - PROMOTING A CULTURE OF SAFETY FOR RURAL NURSES AFTER EXPOSURE TO TRAUMATIC EVENTS: POLICY IMPLICATIONS

4.1 Relationship of Manuscript 3 to the Dissertation

The third manuscript builds on the main findings of the grounded theory of 'staying strong' and provides recommendations and policy implications at the organizational, technological, and educational levels to enhance the workplace health and safety of nurses in rural acute care practice settlings. The manuscript was prepared following the journal guidelines of *Rural and Remote Health* and builds on the original grounded theory study findings. Recommended strategies for individuals and organizations, the application of current technologies, and educational strategies to better support and improve the psychological wellbeing of rural nurses are all outlined. These include organizational policies, programming, and processes that meet the unique needs of nurses in the rural practice setting and may enhance the workplace health and safety.

4.2 Abstract

Recurrent exposure to traumatic events is an inherent part of rural nursing practice and may have detrimental psychological consequences. Rural practice is unique as nurses often work in professional and geographical isolation with limited resources, minimal support, and lack of resources to deal with a variety of complex trauma-related events, death and dying of all ages, and commonly involves care for people who they know personally, such as a family member or friend. They often live and work their entire career in the same community, and therefore are linked to the trauma-related circumstances for life. There is an increased recognition of the psychological impact of trauma-related events, repercussions over time, and the importance of addressing the mental wellbeing of nurses in rural practice and as part of providing quality care. Although individual and organizational strategies are required to support and improve the psychological wellbeing of rural nurses, current organizational policies, programs, processes, and supports are inadequate and not designed to address the unique needs of these nurses. Efforts

must extend beyond the adaptation and application of urban models of intervention and support, taking into account the challenges of access to mental health services in rural settings. A comprehensive and relevant response must recognize the unique context of rural nursing practice, the significance of trauma-related events in these settings, and the impact on rural nurses' psychological well-being. A grounded theory study on the psychologically traumatic experiences of rural registered nurses who live and work in the same community revealed the magnitude and complexity of the psychological impact of trauma-related events. The deep personal inter-connections that develop while living in the community where one works compound the psychological impact and their experiences have profound negative long-term ramifications. These experiences may contribute to the development of trauma-induced disorders such as secondary traumatic stress (STS), vicarious trauma (VT), and/or post-traumatic stress disorder (PTSD). The study further revealed the commitment of nurses to their community and how they strive to stay strong regardless of the traumatic events that they encountered or the impact of these experiences. Nurses rely upon one another for debriefing and psychological support, find ways outside of work to achieve a sense of peace, comfort, and balance following events, and have difficulty leaving the trauma-related experiences behind. Nurses undergo a transformational change because of their traumatic experiences and perceive being affected as inevitable. How nurses deal with it may also be compounded by events occurring in their personal life. Furthermore, access to mental health specialists and treatment options were limited or absent, and participants identified the need for proactive and preventative strategies/ interventions, increased organizational support, and improved and standardized management practices and processes to lessen the impact of trauma. Building on the findings of the above grounded theory study, this article provides recommendations and policy implications at organizational, technology, and training levels that will better support the health and safety of rural nurses working in rural acute care practice environments.

4.3 Keywords: Constructivist Grounded Theory, Vicarious Trauma, Secondary Trauma Stress, Post-Traumatic Stress Disorder, Rural Nursing, Occupational Stress, Safety Culture, Policy

4.4 Introduction

Rural nurses are exposed to workplace trauma are intertwined with the traumatic events for life when they live and work in the same community. Nurses deal with this through a process of 'staying strong' and undergo an internal transformation over time.

The psychological consequences of being involved in traumatic events vary but may result in a range of trauma-related conditions such as Secondary Traumatic Stress (STS) (Adriaenssens et al., 2015a), Vicarious Trauma (VT) (Cieslak et al., 2014), and Post Traumatic Stress Disorder (PTSD) (Mealer & Jones, 2013). The impact of traumatic events has become more prevalent in the nursing profession in recent years (Hinderer et al., 2014; Missouridou, 2017). STS can develop from repeated exposure to traumatic events, death, and violence and affect capacity to provide care (Morrison & Joy, 2016) while VT has an insidious onset with cumulative and permanent effects over time, and can disrupt one's mental, physical, and emotional state (Tabor, 2011). PTSD can also be cumulative, and results from direct and indirect traumatization (Mealer & Jones, 2013). Given that nurses comprise the largest health care work force (Canadian Institute for Health Information [CIHI], 2018), the majority of nurses are female (Canadian Nurses Association [CNA], 2019), and the rate of PTSD is 2 to 3 times higher in females (Christiansen & Hansen, 2015), PTSD is an important consideration for the profession. Approximately 1 in 4 nurses will experience PTSD at some point in their career and up to forty percent are currently experiencing and suffering the consequences (Manitoba Nurses Union [MNU], 2014).

Rural nurses may be at increased risk of the adverse psychological effects of trauma (Hegney et al., 2015) given that their geographical distance can delay access to urban trauma service supports, there is an absence of advanced life support, and limited options for transporting out (Simons et al., 2010). Nurses commonly work alone (Williams, 2012) and deal with emotionally complex events (e.g., motor vehicle accidents, occupational injuries) (Dominguez-Gomez & Rutledge, 2009) and violence (Opie Lenthall et al., 2010). Security measures are often inadequate (Canadian Federation of Nurses Unions, 2017) and/or there is limited local protective or police services available (Government of Canada, 2019). In addition, nurses in rural practice commonly have deep interconnections and relationships within their community, higher levels of work engagement (Opie, Dollard et al., 2010), and frequently care for people they know (MacLeod, Kulig, & Stewart, 2019). A grounded theory study on the traumatic experiences of rural registered nurses who live and work in the same community found that nurses who are traumatized suffer significant, complex, and detrimental psychological repercussions (Manuscript 2). The above study revealed that rural nurses are dealing with the impact of traumatic events on their own and strive to 'stay strong' by relying upon others, seeking and sustaining strength, trying to leave the past behind, and are experiencing permanent

transformational change within. This manuscript builds on the findings outlined in Manuscript 2, and presents opportunities at organizational, technology, and training levels to better support the health and safety of rural nurses working in rural acute care practice environments.

4.5 Recommendations and Policy Implications

The following five specific recommendations and policy implications have been summarized in Table 4.1.

4.5.1 Organizational recommendations.

4.5.1.1 Recommendation 1: Create an organizational framework to protect and promote the psychological safety and well-being of rural nurses.

4.5.1.1.1 Background. The psychological needs of rural nurses following traumatic events are currently minimized or overlooked and the organizational response is inadequate, leaving nurses to suffer, endure, and deal with the impact and consequences on their own (Manuscript 2). Rural nurses are challenged with heavy workloads, high level of responsibility, community expectations, a broad scope of practice, violence, and compromised safety (Lenthal et al., 2009). These nurses routinely encounter traumatic events (Adriaenssens, Gucht, & Maes, 2012), are more at risk of occupational issues than urban nurses (Franche et al., 2010), and lack access to supports and services commonly offered to nurses in urban centers (Hunsberger, Baumann, Blythe, & Crea, 2009; Williams, 2012). Rural nursing is complex (MacLeod et el., 2004) and may be seen as "less sophisticated" by urban nurses (Zibrik, MacLeod, & Zimmer, 2010, p. 28), and current policies, procedures, and management practices are urban-focused despite the unique nature of rural practice (MacKinnon, 2012).

An organizational culture and shared belief that reflects an awareness and prioritizes the psychological safety of rural nurses is needed. Increased acknowledgement and transparency are required to ensure that nurses are not suffering the adverse effects of trauma alone and in silence. A psychological safety and well-being framework with a commitment to protect rural nurses through preventative actions and wellness promotion must be a priority. This includes processes that enable nurses to identify the onset of symptoms in themselves and peers, to recognize and report situations that place them at risk, and to provide the most appropriate response if affected.

4.5.1.1.2 Policy implications.

1. Engage health care leaders at all levels to support workplace initiatives tailored to meet the psychological safety needs of rural nurses.

2. Develop, adopt, and strengthen policies, procedures, and processes through consultation between health care leadership and rural nurse representatives to enhance a culture of psychological safety, and provide recommendations for protective actions and responses that align with rural nurses' needs.
3. Collaborate and participate in process improvements to ensure representatives are engaged in all practice and process changes (includes incident reporting, investigation, management, and follow-up of work-related incidents and traumatic events).
4. Utilize available data or implement strategies towards the collection of data, that is attributed to workplace factors to support organizational decision-making and guide solutions (i.e., trends in absenteeism, job turnover, retirement, work accommodation, return to work, disability, workers compensation claims).
5. Implement work relief/coverage processes to reduce barriers to immediate access for psychological screening and assessment and to evaluate for capacity/impaired function to provide safe patient care.
6. Ensure accessible, effective, and timely mental health treatment options, and sufficient mental health resources.

4.5.1.2 Recommendation 2: Cultivate and strengthen trauma informed care principles in rural settings.

4.5.1.2.1 Background. Currently, there is a lack of appropriate and relevant organizational policies, practices, procedures, and standards designed to protect rural nurses dealing with trauma-related events, leaving them vulnerable to the impact of trauma on their mental health. Nurses and health care leaders must be informed about factors that contribute to compromised psychological health and on how to reduce psychological hazards and risks.

A trauma informed system, organization, and strategy that focuses on engagement, health and safety of workers, and ability to respond to the symptoms of trauma is less vulnerable to the impact (Arthur et al., 2013). In recent years, the shift toward ensuring a culture of safety in healthcare has been heavily influenced by legislative and regulatory bodies who hold employers more accountable for behavior that leads to injury, and for failing to provide or maintain a psychologically safe work environment (Shain, Arnold, & GermAnn, 2012). For example, the Canadian Human Rights Tribunal (Canadian Human Right Tribunal, 2016) *and* Commission

(Canadian Human Rights Commission, 2008) affirm that workers with mental health concerns must be accommodated, and Workers Compensation laws hold that psychological injury because of one's work allows for compensation. In addition, labour laws protect the mental and physical health of workers, which may require employers to remove or relocate individuals from areas deemed dangerous or perceived as hazardous or threatening due to physical or psychological risk.

Furthermore, the Occupational Health and Safety Act (OH&S; Section 2(p) (iii)) outlines the duty of employers to protect workers from factors that are detrimental to their health. (Government of Saskatchewan, 1993). OH&S laws affirm that employers must make every reasonable effort to prevent injury to a worker's mental health (Shain et al., 2012), and the Canadian Center for Occupational Health and Safety [CCOHS] (2020) work legislation and Mental Health Commission of Canada (MHCC) National Standards (2013) reinforce the importance of psychological health in the workplace.

4.5.1.2.2 Policy implications.

1. Develop, adopt, and embed policies and procedures that reflect trauma informed practices and approaches in rural settings (i.e., staff development, debriefing, self-care, mental health support). OH&S legislation can be utilized as a foundation for development and to address all aspects of concern with an emphasis on prevention and early intervention.
2. Strengthen alignment with the MHCC Standards, recommendations, and staged implementation model on psychological health and safety in the workplace. Utilize the resources as a guideline and the tools provided to engage commitment and policy development and for a systematic approach to develop workplace practices.
3. Design an in-service to introduce and educate rural nurses and health care leaders at all levels of the organization about trauma informed systems. Establish minimum training requirements to gain the skills and competency required to understand the widespread consequences of trauma, how to respond to the needs of nurses involved in trauma-related events to achieve optimal outcomes, and to understand employer/employee expectations.

4. Utilize in-servicing as an opportunity to recruit nurses interested in becoming local peer trainer-leaders and entice organizational leaders interested in taking lead roles in program development and delivery.
5. Incorporate trauma-informed (TI) care into new employee orientation to include peer support access, a process to identify impact in self and in others, self-care strategies, and incident reporting processes (i.e., critical incidents, violence).

4.5.1.3 Recommendation 3: Establish a rural Critical Incident on-site Peer Support Program (CIPSP).

4.5.1.3.1 Background. Rural nurses are confronted with a range of psychologically, emotionally, and physically demanding situations, violence and abuse, tragedy and traumatic events, and death and dying with inadequate or no situational or structured support and follow-up, therefore they tend to rely on one another for mutual support and debriefing (Manuscript 2). The cumulative repercussions of these events can have profound and long-lasting psychological effects (Guitar & Molinaro, 2017), and nurses may not function normally, potentially hindering the quality of care they provide to patients (Adriaenssens et al., 2012). Strengthening informal support by developing rural nurses into formal peer supporters in the clinical setting would provide nurses an immediate and consistent outlet to discuss the circumstances of events and help to deal with the aftermath. Peer support provides the supportive relationships of others with similar experiences (Sunderland, 2013), offers effective early intervention (Roberts, Kitchiner, Kenardy, Lewis, & Bisson, 2019), may reduce the negative effects (Wahl, Hultquist, Struwe, & Moore, 2018), strengthens cohesion (Kanno & Giddings, 2017), and can be available where nurses live and wherever they are in the process of recovery (Forchuk, Virani, & Soloman, 2016). Research supports the effectiveness of a peer support strategy (Dukhanin et al., 2018) although not all nurses have the skills or the personal characteristics to provide it, and those that are capable may not be readily available when support is required.

A formal Critical Incident on-site Peer Support training program that is focused on developing qualified peer providers would enable the development of competencies in the application of supportive interventions and provide an immediate, standardized, and coordinated response. Skills would be developed to recognize and identify at-risk colleagues, provide or arrange the most appropriate supports, resources, and follow-up (i.e., formal debriefing, risk screening, Employee and Family Assistance Program, staff relief).

4.5.1.3.2 Policy implications.

1. Establish a rural-focused trauma response team with expertise to include a crisis response lead, healthcare leader decision-makers, and rural nurses who express interest in becoming trained peer supports. Secure the necessary resources for training locally, establish rural-specific policies, procedures, and protocols, and monitor and measure the effectiveness of the new program. Nurses who self-identified could become informal leader peer trainers or peer-to-peer supports.
2. Enable nurses to obtain initial and ongoing training and certification through Peer Support Accreditation and Certification (Canada) (2016) to ensure standards in training are met and as part of a continuous education program to maintain skills.
3. Create a crisis management plan that includes processes for peer trainers on early identification of nurses who may require intervention or support, establish a confidential referral mechanism to notify the trauma response team and inform the site manager.
4. Develop a simplified incident reporting system and utilize peer trainers to ensure Occupational Health and Safety incident reporting occurs.
5. Coordinate relief for nurses experiencing trauma from work obligations through staff scheduling to address mental health needs.

4.5.2 Technological recommendation.

4.5.2.1 Recommendation 4: Improve mental health support in rural settings using innovative technology.

4.5.2.1.1 Background. The current organizational response for psychological support to rural nurses following trauma-related events is based on urban models of delivery where interventions and supports are available and quickly accessible. Rural on-site debriefing is often provided by unskilled professionals and delayed or absent as mental health specialists are primarily located in urban centers (Manuscript 2). Psychological support services can be enhanced by building on current audio-visual and smartphone technology and advancements to provide confidential face-to-face support and make services more accessible, timely, and efficient, and by adopting self-management apps as an adjunct to conventional care. This approach could expand local capacity, expedite referrals to appropriate specialists, and eliminate the barrier of distance, travel, and geographical isolation. Psychological support and debriefing

would be centered on the philosophy that the appropriate care and services be offered in the right place and time and be tailored to circumstances encountered (Saunders & Carter, 2017).

4.5.2.1.2 Policy implications.

1. Create a twenty-four-hour on-call service that offers face-to-face video access to a dedicated trauma response team and mental health specialists with skills to triage and identify nurses in distress and provide direction to locally trained peer support leaders. These dedicated experts would coordinate follow-up outreach once immediate needs are addressed, mobilize a high-risk assessment team to travel to conduct timely on-site debriefing, arrange private in-home or smartphone virtual sessions, facilitate follow-up with a range of mental health specialists as required (e.g., crisis counsellor, psychotherapy), coordinate relief coverage with staff scheduling for nurses to attend appointments, and provide long-term follow-up.
2. Create standard policies, procedures, and processes that ensure appropriate referrals, necessary measures, confidentiality, and timely consultation with qualified professionals; maximizing distance technology for management and follow-up.

4.5.3 Training recommendation.

4.5.3.1 Recommendation 5: Integrate trauma informed approaches in nursing education curricula including a focus on rural nursing practice.

4.5.3.1.1 Background. Current nursing educational programs provide limited education regarding the psychological impact of trauma which leaves nurses ill-equipped to recognize and deal with it in practice (Wheeler, 2018). Nurses' exposure to workplace trauma at some point is likely, and it is of greater importance for those working in rural settings, therefore it is necessary to acquire TI competencies to protect their psychological wellbeing. Education is an essential component to enhance stakeholder knowledge of how trauma influences the health care system, integrate and strengthen ongoing practice, support nurses experiencing crisis, and assist in creating a higher functioning, informed, and safer work environment.

4.5.3.1.2 Policy implications.

1. Integrate TI approaches into all undergraduate nursing curriculum to enhance knowledge and skills to prepare nurses to deal with trauma in practice, support others in crisis following trauma-related events and acquire competencies applicable to rural settings.

2. Train RN students in TI care by practicing in a clinical learning environment using an interactive learning approach (i.e. simulation).

4.6 Summary

This report highlights that the psychological safety of rural nurses is a collective responsibility of administrators, policy makers, and organizations, and states the importance of adequately preparing nurses, educators, and health care leaders in becoming trauma informed. It provides useful and achievable strategies and a direction to respond, presents an opportunity to design a rural-specific traumatic event preparedness approach, and offers concepts to transform the current systems of support. Effective policies, procedures, and processes that are proactive, preventive, and responsive will help to address current Occupational Health concerns and legislative accountabilities, ensure the most appropriate organizational response, and achieve protective measures for rural nurses' psychological health. A supportive work environment and culture of safety can be maintained by fully integrating the identified strategies, and has the potential to mitigate the psychological impact of traumatic events, enhance the workplace health and safety and well-being of rural nurses, and support safer patient care.

4.7 Acknowledgements

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Table 4.1

Recommendations and Policy Implications to Address the Psychological Impact of Traumatic Events in Rural Nursing Practice

Recommendations and Policy Implications	Importance	Literature to support
ORGANIZATIONAL		
RECOMMENDATION 1: Create an Organizational Framework to Protect and Promote the Psychological Well-being of Rural Nurses		
Engage health care leaders	• Contribute to a healthy organization • Work effectively and collaboratively • Create a supportive organizational climate • Unify vision and values	Al-Sawai (2013)
Develop, adopt, strengthen, and design current policies and procedures	• Effective and synergistic practices and processes • Adequate instruction to identify risks, report incidents, and outline as requirement of nurses • Cultivate a safer environment to include reporting and receiving clinical mental health intervention	Government of Newfoundland (2019)
Collaborate and participate in process improvements	• Empower and engage in quality improvement in practice • Adherence to policies and processes • Demonstrate understanding of organizational expectations • Monitor, report, and revise	Wilson, Berwick, & Cleary (2003).
Utilize data to guide decision-making and solutions	• Assist in program decision making • Meet program goals and objectives • Evaluate effectiveness • Identify areas of improvement and make modifications • Guide practices	U.S. Department of Health and Human Services (2017)
Implement a staffing relief model	• Address inadequate preparation for coverage when required • Appropriate and safe management of patient needs • Protect and support nurses	Terry et al., (2015)
Ensure accessible, effective and timely mental health treatment options	• Reduce wait-time • Increase access • Reduce stigma • Improve physical, social, and mental health status • Improve diagnosis and treatment • Quality of life • Reduce barriers to care	Canadian Association of Mental Health (2016)

Table 4.1 (Continued)

Recommendations and Policy Implications	Importance	Literature to support
RECOMMENDATION 2: Cultivate and Strengthen Trauma informed Care Principles in Rural Settings		
Develop and adopt policies and procedures that reflect the organizational commitment	• Support prevention and early intervention • Effective practices and processes • Promote consistent practices	Mental Health Commission of Canada (2020)
Strengthen alignment with the Mental Health Commission of Canada National Standards	• Guideline for thorough and systematic approach • Maintain a mentally healthy workplace • Provide supports, guidance, and strategies • Enhance safety and psychological well-being	Mental Health Commission of Canada (2020)
Introduce concept of Trauma Informed principles and systems into the current work culture	• Gain skills, competency, and understanding • Increase capacity to prevent and adequately respond • Achieve optimal outcomes • Understand employer/employee expectations • Guide policy and process change • Demonstrate value of nurses to organization	Center for Substance Abuse Treatment. Building a Trauma informed Workforce (2014)
Engage local nurses and health care leaders in lead Trauma Informed roles	• Support program development and the response strategy • Gain support and empower collective participation • Shared commitment • Foster collaboration	Squires et al., (2010).
Orientate new employees to Trauma Informed systems including workplace responsibilities	• Knowledge and understanding • Shape perceptions and attitudes • Encourages a psychologically safe climate • Strengthen capacity to deal with and respond to traumatic events	Center for Substance Abuse Treatment. Building a Trauma informed Workforce (2014)
Ensure compliance with Occupational Health and Safety legislation	• Comply with legislative requirements • Focus on preventing harm to nurse's psychological health • Promote psychological well-being • Provide option for Workers Compensation for psychological (mental health) injuries	Government of Saskatchewan (1993)
Ensure alignment with National Standards outlined on Psychological Health and Safety in the Workplace	• Provide guidance, tools, and resources for organizations to promote mental health • Focus on prevention of psychological harm as a because of result of workplace factors	du Québec, B. D. N., & Canadian Standards Association. (2013)

Table 4.1 (Continued)

Recommendations and Policy Implications	Importance	Literature to support
RECOMMENDATION 3: Establish a Rural Critical Incident On-Site Peer Support Program (CIPSP)		
Create a rural team with expertise in crisis response	• Build local capacity with visible and accessible resources • Create a safer environment and robust safety culture • Promote seeking help • Identify work relief/resource needs • Provide real-time therapeutic intervention: crisis intervention and prevention in an effective manner • Mitigate impact to mental health	Cyr, Mckee, O'Hagan, & Priest (2016)
Enable rural training, education, and awareness	• Ensure standards in peer support education are met • Enable nurses to obtain the skills to recognize and respond in a standardized, coordinated and supportive manner • Mechanism to identify nurses impacted by trauma and respond effectively • Foster sense of self-efficacy and control • Promote communication without fear of stigma or judgement • Increase capacity to better serve nurses impacted by trauma • Inform treatment and management options	Johnson (2019)
TECHNOLOGICAL		
RECOMMENDATION 4: Improve Mental Health Support in Rural Settings using Innovative Technology		
Create twenty-four-hour face-to-face access to a team of trauma specialists or mental health experts	• Improve Access and expand local capacity • Triage and outreach once connected • Assessment of immediate needs • Identify nurses in immediate distress • Provide direction to local peer support leaders • Follow-up, or facilitate for services as required	Registered Nurses' Association of Ontario (2017)
Create standard policies, procedures, and processes for referrals and consultation	• Link with qualified professionals • Effective practices and processes • Cultivate a safe environment • Adequate instruction to identify risks, report incidents, and outline as requirement of nurses	World Health Organization (2000)

Table 4.1 (Continued)

Recommendations and Policy Implications	Importance	Literature to support
Maximize technology for debriefing, care, management, and follow-up	• Address emotions linked to traumatic event(s) • Receive trauma informed care regardless of barriers • Provide timely intervention • Increase access for assessment, treatment and management • Attend to individual needs promptly • Provide chronic management/treatment strategy	Bjorn (2012)
TRAINING		
RECOMMENDATION 5: Integrate Trauma informed Approaches in Nursing Education Curricula including a focus on Rural Nursing Practice		
Promote and maintain trauma informed principles	• Develop understanding of trauma informed principles and trauma competencies • Integrate and nurture concepts of psychological safety • Integrate trauma informed principles throughout all levels of organization • Educate RN students to increase understanding of trauma informed care • Psychological safety embedded in future practice • Create a higher functioning, informed, and safer work environment	Wheeler (2018)

CHAPTER 5.0 DISCUSSION

5.1 Overview of Study Findings

The purpose of this research was to provide an in-depth understanding of the psychological impact of exposure to traumatic events on rural nurses who care for others in the context of living and working in the same rural community. The RNs who were interviewed described a range of extremely distressing traumatic experiences and their main concern was the realization that they were intertwined with these traumatic events for life. In the substantive theory that was constructed (Charmaz, 2014) on how rural and remote nurses deal with exposure to distressing traumatic events (Figure 3.1), the main social process was staying strong.

5.1.1 The interconnection with traumatic events for life. The constructivist grounded theory study made evident the severity and range of negative psychological symptoms and physical responses experienced by nurses following exposure to traumatic events. The findings not only highlight the cumulative effects of trauma over time, but also uncovered the complexities of dealing with them while living and working in the same community. Rural nurses are embedded into the sociocultural and physical context of their communities, which was viewed as a blessing and curse. Nurses found strength in being part of the broader community network, although they felt a deep sense of responsibility and accountability when caring for members of the community. Nurses' commitment and loyalty to their community leads to a culture of endurance and tolerance, where they generally conceal their emotional pain, hide their distress, and bury their emotions.

A key finding in this study and the main concern of rural nurses was their inability to fully separate from traumatic events when living in the community they practice. The interconnections and interactions throughout the community following events are constant reminders of the traumatic events and often cause high levels of anxiety, turmoil, and re-traumatization. For rural nurses, specific locations or situations, particular people or associations, and a variety of sensory stimuli, can provoke or trigger flashbacks to memories and feelings throughout their entire lives. The ongoing reminders incite a range of responses and commonly lead them to re-experience symptoms from past traumatic events. This finding was consistent

with previous research which indicated that people who have previously experienced traumatic stress are at risk of re-traumatization in certain settings or circumstances (Schock, Böttche, Rosner, Wenk-Ansohn, & Knaevelsrud, 2016), and was supported by Durand, Isaac, and Januel (2019) who identified that negative stimuli from trauma are encoded in the brain and can influence the memory processes and emotions. Reminders can be a major vulnerability for nurses and generate greater symptom development, manifesting as hyperarousal, hypertension (McCubbin et al., 2016), cardiovascular disease (Burg & Soufer, 2016), which can place nurses' physical health at risk. Pre-trauma functioning can also influence the physiological response (Bomyea, Risbrough, & Lang, 2012), and the pathophysiology may be intensified because of biological risk factors or with co-existing or stressful life events occurring in their personal lives (Mayo et al., 2017). For rural nurses where the community is their home, this is an unavoidable dynamic, as they cannot escape the triggers that accumulate locally over their lifetime. These nurses are destined for years of persistent exposure which is complicated by the fact that employment opportunities are limited for nurses who wish to avoid the reminders and desire to work elsewhere.

5.1.2 Staying strong over time. The nurses in this study dealt with being integrated with the traumatic events through the main process of 'staying strong', which has four interconnected subprocesses: a) relying externally upon others, b) seeking and sustaining strength internally, c) trying to leave the past behind, and d) experiencing permanent transformation change within. These nurses relied on both internal and external factors occurring synonymously to control how they felt and dealt with their experiences.

Internally, nurses try not to be consumed by the traumatic events by drawing on their inner strength and by seeking ways they find most helpful to them individually. Some nurses draw strength from the solitude of travelling to and from work. This is commonly used as a time to reflect, gain perspective, rationalize, and help put the events experienced at work into perspective. Others found that spending time outside on their farm, gardening, or walking outdoors, calmed their mind, shed their burdens, and relaxed them. This approach helps them to deal with the impact of their experiences and brings them peace, comfort, and balance. These findings were supported by Caddick & Smith (2014) who identified that ecotherapy and physical activity positively influenced psychological well-being while Poulsen, Stigsdotter, Djernis,

Sidenius (2016) found that harnessing the healing powers of the environment as a nature-based therapy buffered the impact of PTSD.

Externally, nurses find strength in relying upon the informal support of others, such as peers, family, and friends. Similar to research by Scott et al. (2009), the nurses in this study commonly seek out the support from someone who can relate to the human impact, is trusted, and in whom they feel safe to confide. Nurses also endeavor to control and suppress painful memories, leave the past behind, and restore a sense of well-being. This finding is supported by Mealer and Jones (2013) who identified that nurses used mechanisms of avoidance as an emotional regulation strategy to minimize distressing traumatic experiences. As evidenced in this study, the internal and external processes occurred concurrently to make sense of, and deal with their turmoil in the immediate aftermath of the traumatic events. For these nurses, aspects of the emotional response that are out of their control cause them to spontaneously re-experience intense feelings from repressed traumatic events along with the infiltration of unwanted intrusive images linked to memories of the past. This supports a study by Missouridou (2017), who found that nurses became emotionally overwhelmed and were often immersed and distracted in self-reflection and re-evaluation about events, causing them to not think clearly. In rural settings, this is complicated by the fact that nurses bear the weight and responsibility for the simultaneous care of all other patients' care needs in the hospital, with no time or back up relief staff to regroup and deal with the after-effects of the events. This is further compounded by self-judgment, feelings of inadequacy, and second-guessing oneself (Scott et al., 2009). In this study, there was also concern about the repercussions to their reputation in the community and a strong desire to maintain or restore personal integrity.

This study also found that over time, nurses continue to be tormented and cannot leave past events behind. They recognize the permanent effects on themselves, and that they are entwined with previous traumas for life. There is a fundamental shift as they acknowledge and come to terms with the unfavorable internal transformation they have experienced because of their traumatic experiences. This characteristic was supported by Missouridou (2017), who identified that trauma exposure leads to an intense emotional response in nurses that sometimes exceeded their ability to deal with it.

The ability for nurses to stay strong within the social context of their professional role in the community and personal lives as community members requires them to rely upon others and

their own internal strength, try to move forward by leaving their past experiences behind, and acknowledge and accept that their experiences have changed them permanently. Staying strong is also central for nurses to be able to deal with the fear and anticipation of subsequent or future traumatic events and contributed to their ability to cope, build their resilience, and continue to safely provide care to other patients.

This study highlights the magnitude of the impact of traumatic events on the psychological health of nurses while also revealing the contrast to urban centers where a broader network of supports are available, debriefing systems and supportive processes are more commonly in place (Elhart, Dotson, & Smart, 2019), and there are more nurses working (MacLeod et al., 2017).

5.1.3 Nature of support. In recent years, health care organizations have implemented steps to protect the mental health of workers by enhancing policies to increase workplace psychological safety (Samra, 2017). In this study, gaps in organizational support were identified. Specifically, steps to meet the psychological and safety needs of nurses were not evident in practice, creating an illusion of progress. The current rural organizational response is inadequate, inappropriate, inconsistent, or non-existent, and the processes that are in place are inefficient as the delivery model does not meet the specific needs of rural nurses. Findings also suggest that there is a lack of understanding regarding the severity of the impact of trauma on rural nurses, the short-term and long-term consequences, how traumatic events influence their ability to function, and the cascade of events that can place nurses and their patients at risk. These findings are supported by Christodoulou-Fella et al. (2017) who found that the overall health of healthcare professionals was compromised by moral distress and secondary traumatic stress as a because of their work environment and compromised care.

Overall, it is clear that nurses in rural practice are not receiving the support they require and this study illuminated the fact that nurses deal with their anguish on their own. The lack of organizational-level action or immediate formalized support provided to nurses in the aftermath of traumatic events, leaves them feeling helpless, powerless, and alone in addressing this issue. This finding was supported by Scott et al. (2009) who found a large portion of nurses affected by trauma currently suffer in silence, while Missouridou (2017) describes a nurse's response to trauma as a psychological injury, suffering in crisis from a "silent wound" (p. 110). To address the lack of psychological safety of rural nurses, a commitment is required at the highest levels of

government and health care organizations (Manitoba Nurses Union [MNU], 2017). These institutions must bear greater responsibility in establishing protective and responsive strategies to address known psychological risks in the workplace. There is also a need to embrace a comprehensive, collaborative, and multifaceted approach by nurses, educators, and employers to develop processes that better prepare nurses, enhance workplace wellness, and contribute to improved psychological services and management practices (Gilbert & Bilsker, 2012). Other studies have identified the importance of a management strategy with a skilled response (Healy & Tyrrell, 2013) that provides the support, validation, and the reassurance required (Clark & McLean, 2018) and builds resilience and coping strategies in nurses (Ramalisa, du Plessis, & Koen, 2018). A proactive, preventive, and responsive approach will also align with occupational health standards and comply with legislative responsibilities, while mitigating the potential traumatic impact on nurses and ensure quality and safe patient care. This can be achieved by building understanding through the development, enhancement, and integration of psychological health and safety policies, procedures, and standardized practices that are tailored to the unique aspects of rural nursing practice. To begin, organizations must take greater responsibility and focus on more robust and effective upstream strategies and trauma intervention programming. Leaders must be educated and engaged in supporting nurses by identifying, addressing, monitoring, and following up from traumatic events and by ensuring that nurses are supported in ways that sustain them.

5.2 Recommendations for Future Practice

Five key recommendations were outlined in this study, beginning with a recommendation regarding the development of a rural-focused organizational framework that protects and promotes the psychological well-being of rural nurses and that is cultivated and strengthened at all organizational levels. An integrated approach is supported by Gilbert & Bilsker (2012) in the Mental Health Commission of Canada's *Psychological Health & Safety Action Guide for Employers*. Similar to the framework proposed by Bowen & Murshid (2016), the second recommendation focused on the integration and advancement of trauma informed care principles into the existing organizational response and at the clinical level to increase understanding, enhance safety, enhance the response, and build capacity. Trauma informed care has been increasingly recognized as a successful response to trauma within healthcare and as an effective strategy to prevent re-traumatization (Fleishman, Kamsky, & Sundborg, 2019). A trauma

informed system focuses on increasing trauma-related knowledge by informing and educating others (Sweeney, Filson, Kennedy, Collinson, & Gillard, 2018), building self-efficacy, strengthening coping skills, and preparing nurses to recognize a change or 'warning' signs in others (Molitierno, 2018). A trauma informed approach that is ingrained in the healthcare system and nursing practice may also foster resilience in nurses impacted by trauma, minimize re-traumatization (Menschner & Maul, 2016) and be preventative through early recognition, assessment, and intervention (Center for Substance Abuse Treatment, 2014).

A third recommendation developed from the findings of this study was the establishment of a formal peer support program structure to assist front line nurses who are vulnerable to psychological trauma. Early intervention by trained peer supports that are skilled in conducting risk assessments would identify nurses requiring support, intervene as appropriate, initiate the referral process for assessment, and provide ongoing surveillance of nurses potentially affected at a local level. There is evidence that early psychological intervention following trauma exposure may reduce the incidence of long term consequences such as PTSD among people exposed to traumatic events (Qi, Gevonden, & Shalev, 2016) and promotes recovery (Tehrani & Hesketh, 2018). Organized participation at the grassroots level may be the most effective way to create a broadened network of support, quickly mobilize required resources, and strengthen local efforts. A structured rural critical incident peer support program fosters a culture of support, can provide practical and timely initial on-site debriefing, and can activate a formalized debriefing process with experts. This approach would be responsive, accessible, and effective. The finding was supported by Dukhanin et al. (2018), who found that nurses who have had similar experiences and trained in debriefing are better able to provide support.

Although rural nurses typically rely on their peers for support, they may lack the necessary skills and knowledge to respond to traumatic event exposure in terms of identifying nurses in need (Stokes, Jacob, Gifford, Squires, & Vandyk, 2017) or having processes in place to attain assistance when needed (Cyr, Mckee, O'Hagan, & Priest, 2010). Rural nurses prefer to share their experiences with someone who can relate to them or comprehend the personal impact of difficult events (Dukhanin et al., 2018). This reciprocal sharing strengthens their relationships, deepens their connections and sense of team cohesiveness, and reinforces the bonds between them (Forchuk et al., 2016). Overall, harnessing the existing support of peers with enhanced skills would offer immediate, reliable, safe, therapeutic intervention to debrief with those who

have training, insight, and understanding. Training and skill-building in critical incident debriefing would build knowledge, confidence, and enable nurses to better monitor one another. In addition, it can provide an opportunity to strengthen resiliency and ensure that nurses who have been exposed to trauma or are in crisis are offered an immediate opportunity to debrief and regroup. This approach supports a key objective outlined by the Mental Health Commission of Canada in 2013 (MHCC, 2013) to promote and protect mental health at work, which has been reasserted as an important focus for 2020 (MHCC, 2020). The concept is to provide frontline health care responders with the skills to assist themselves and their peers after experiencing a traumatic event. This can be achieved by integrating psychological safety training into every workplace, as guided by the MHCC National Standards for Psychological Health and Safety in the Workplace document *The Road to Psychological Safety* (Shain et al., 2012).

The fourth recommendation outlined was to improve mental health support in rural settings using innovative technology. The restructuring and re-designing of current psychological support services available to rural nurses is required to build a more effective virtual mental health program and would address the inequalities of services available to nurses in urban centers. While the use of remote technology for the delivery of mental health services is in place and growing, the concept of adopting urgent and 'real-time' virtual psychological trauma-specific assessment and services to meet the specific needs of individuals identified by rural and remote nurses is new. With the appropriation of the most advanced remote technology and a focused trauma-response strategy, mental health support by on-call specialists available 24-hours a day with expertise in the area of psychological trauma would ensure access to timely, efficient, convenient, and appropriate services. These re-designed elements would surpass previous remote mental health service delivery options. Digital approaches using audiovisual and smartphone technology could be utilized for immediate face-to-face consultation, individual therapy, ongoing counseling, or psychotherapy (Cohen & Collens, 2013) and could be an extension of other in-person mental health care. An on-call rapid response strategy could address structural barriers (i.e., scheduling appointments), eliminate geographical challenges related to rural travel and weather, augment current Employee Family Assistance Programs (EFAP), and provide nurses a confidential outlet to access treatment with a maximal level of privacy. The immediate access and flexible consultation options would provide the ability to conduct a quick digital remote screening and assessment to determine the need, discuss potential options, establish a format of

support, and determine the type of intervention desired (i.e., one-one, group, unit level). The initial assessment could outline the appropriate and priority interventions and determine at that time whether the affected nurse can provide safe patient care. The possibility that nurses may be unable to provide care in a safe way following events is consistent with a study by Missouridou (2017) who found that exposure to trauma may compromise the nurse's ability to interact with patients safely and meaningfully. In situations of severe psychological impact, additional new and expanded processes could include a staffing relief response model where interim human resources are deployed to temporarily relieve affected nurses from their duties. This proactive approach may also reduce the risks of error and injury to other non-trauma related inpatients and outpatients by unknowingly traumatized nurses. This type of service would be less prohibitive, enable appropriate specialists to respond to peer referrals, offer treatment flexibility around shift schedules, accommodate individualized follow-up and wellness check-ups, expand local capacity, and provide increased and efficient access to the services that rural nurses require. The approach is supported by Kearns, Ressler, Zatzick & Rothbaum (2012) who found that intervention immediately post-trauma was more likely to reduce the incidence of long-term or chronic psychological impact and supported by Lindsay et al. (2017) who suggest that video assisted psychotherapy may also increase engagement in mental health support and overall satisfaction by nurses and their providers. Findings from Lindsay et al. (2017) also suggest that stigma around accessing mental health services may be reduced with video therapy; therefore, support in this format might also encourage nurses to reach out when most needed. In addition, peer support training could be offered digitally and eliminate the barrier of access to education to develop peer-leaders, maintain peer trainer competency, and ensure continuity of the delivery of peer to peer support services.

Lastly, although the consequences of trauma have been identified as a priority by the World Health Organization (2013) and the value of trauma informed care has been recognized across health care settings (Reeves, 2015), there is a lack of trauma informed care education in current nursing educational curriculums (DePrince & Newman, 2011; Mabey, Wheeler, Ronconi, Smith, 2017; Wheeler, 2018). Therefore, the integration of trauma informed principles into nursing programs is recommended to appropriately equip future frontline nurses with the knowledge and skills to deal with traumatic events in the workplace, support one another, and protect themselves from future adversity (Molitierno, 2018). Trauma informed nursing education

can enhance nursing competencies to better assist nurses to recognize the impact of trauma in clinical practice and provide the skills to support and offer the resources required to reduce the risk of long-term psychological consequences (Wheeler, 2018). In addition to the focus on prevention and intervention, a trauma informed approach can build skills and confidence in nurses to support others (Wheeler, 2018), and may be the catalyst to a fundamental shift in how people think about trauma and mental health in rural nursing (Sweeney et al., 2018).

5.3 Relevance to Clinical Practice

This research highlighted a prominent occupational hazard and the potential risk of exposure to traumatic events for nurses in rural practice, identified gaps in psychological and physical workplace safety, outlined the extent of the implications on nurse's overall health, and provided strategies, practical recommendations and interventions to support and improve rural nurses' well-being. The results supported findings from a previous study by Dekeseredy, Kurtz Landy, and Sedney (2019), suggesting that the stress and challenges faced while working in rural emergency departments have a significant effect on nurse's mental health. This study built on crucial research to further our ability to help rural nurses who have been involved in traumatic events. The new knowledge provides an opportunity to address the needs of a vulnerable and essential group of workers, develop a more stable sense of safety in their work setting, and improve psychological services and management practices while also supporting continuous improvement and quality patient care.

From a broader perspective, these findings call for government, educational institutions, and health care policy-makers to implement and operationalize processes and interventions that are tailored to meet the unique dynamics and psychological and safety needs specific to rural nurses. A collective approach could bring together administrative leaders in occupational health and safety, patient safety, risk management, mental health, information technology, and social work to collaborate on strategies to deal with trauma-related event exposure in the entire rural and remote workforce. For example, trained peer supporters could identify other non-nursing healthcare workers or support staff that have been involved and potentially affected by traumatic incidents, offer guidance, support, and refer for screening and follow-up if required. This research also supports the idea that re-designed organizational processes paired with occupational health and safety policy enhancements may reduce the risk of impact and long-term psychological outcomes on rural nurses and thereby increase the safety of patient care. As

supported by Fleishman et al. (2019), these are important and powerful systems-level changes that have the potential to transform the experience of both patients and nurses.

The adoption of trauma informed principles and strategies in practice can create a sustainable foundation and may curtail the severity of traumatic impact or mitigate the cumulative effects of trauma. A trauma informed approach aligns with the pillars of a psychologically healthy and safe health care system which is designed to prevent harm, promote health, and resolve incidents or concerns (du Québec, B. D. N., & Canadian Standards Association, 2013). In addition, the implementation of a professional peer-to-peer support approach accompanied by an immediate psychological screening response by clinical experts, delivered using the latest technology, and at a time and location of choice, can address current gaps in support. These enhancements can be far-reaching and go beyond nurses to protect the safety of all health care professionals in rural and remote settings involved in traumatic events. An organization with a culture that is firmly committed to the mental well-being of rural nurses and promotes access to support may also lift the stigma associated with mental health challenges and encourage nurses and other rural healthcare workers to attend to their psychological needs. This is consistent with research by Knaak, Mantler, and Szeto (2017), who outlined the importance of addressing and combating stigma that is embedded in health care for health care providers to feel comfortable in seeking help.

5.4 Future Research

This project adds to the current body of knowledge on this topic, contributes to understanding of the factors that impact how nurses deal with trauma-related events, and helps to determine what contributes to the development of long-term psychological effects such as PTSD, STS, and VT. However, further research is necessary to better understand rural and urban differences in this area. This could begin with a longitudinal study that examines and compares the psychological impact of trauma on both rural and urban nurses over time. A variety of measurement tools could be utilized to examine specific outcomes and provide valuable information. For example, the *DSM-5 Questionnaire* screens for symptoms of PTSD (U.S. Department of Veteran Affairs, 2020), the *Secondary Traumatic Stress Scale* (STSS) measures for symptoms of stress providing services to victims of trauma (Watts & Robertson, 2015), *Professional Quality of Life Scale* (ProQOL) measures personal and professional functioning

(Hinderer et al., 2014), while the *Resilience and Vulnerability Scales* measure resilience and vulnerability to stress over time (Mealer, Schmiege, & Meek, 2016).

Additional research is also needed to identify the most appropriate supportive interventions, examine their effectiveness, and assess the impacts of early intervention. This is an opportunity to adapt interventions that are more readily available in urban centers and to test new and more timely innovative methods of assessment and mental health service delivery. A mobile device or tablet with applications can be utilized to conduct real-time self-assessments and offer Critical Incident Stress Debriefing with elements that are tailored to address symptoms of the impact of trauma. This may be paired with the support of trained peers at a local level and mental health counselling or psychotherapy by professionals through videoconferencing. A video-assisted approach could be utilized for individual and group-based diagnosis, monitoring, and follow-up.

The implementation and trialing of formalized peer support programs is necessary to determine if they are an acceptable and suitable approach for nurses to respond to and support one another in the work environment. An evaluation of the effectiveness of a rapid response by trained peer supporters, and to evaluate whether increased education and peer support training enhances their ability to intervene and provide support.

Additional research is also required to test and examine the effectiveness of prompt deployment of an on-the-ground trauma specialist team to assess, provide CISD, and address individual nurses' psychological health over time. This could extend to include identifying the most suitable trauma specialist resources needed by the rapid deployment team, and a longitudinal study to assess the effectiveness of early clinical intervention. These measures may also benefit other healthcare workers who are exposed and impacted by trauma in the rural context.

The majority of research related to this rural topic to date has been conducted in other countries such as Australia and the United States. Although Canada has vast rural and remote proportions, Canadian research on rural issues is limited, therefore future research with a rural focus is needed, and specifically, on the psychological and physical occupational health and safety risks of rural nursing practice in Canada.

Overall, a broader understanding regarding the long-term mental and physical health implications of chronic exposure to traumatic events for nurses that never leave their community

is necessary. Future study is also required to identify interrelated factors and circumstances under which nurses are more vulnerable (i.e., divorce/relationship changes, childhood trauma), including antecedents that may trigger a response (i.e., type of injury, the person affected by trauma). Future consideration must also be given to measures that improve tracking and reporting related to traumatic incidents. Currently, there are gaps in incident reporting, information regarding the circumstances surrounding events, and absenteeism, turnover, sick time use, and stress-related worker compensation claims following traumatic incidents. Lastly, there is a lack of information on the professional community supports and services currently available in rural and remote areas, or the barriers to their availability.

5.5 Limitations

There are several limitations to note when considering study findings. Purposeful sampling was an effective recruitment strategy; however, potential participants that were on stress or illness leave with mental health impact from traumatic events are not reflected in the sample, nor are the views of nurses who had left the workplace as a result of traumatic events. In addition, it was a multi-center study of a small sample size of nurses which prevented between site comparisons; however, the patterns were similar across sites suggesting transferability of findings within a rural region. The strength of the study was in the depth of data from the participants illustrating the range of experiences and the intensity of the impact on individual RNs.

Secondly, study participants were eager to seize the interview as an opportunity to disclose suppressed traumatic experiences, often from across their nursing lifetime, and often for the first time. It was made explicit at the onset that the interview process had the potential to trigger suppressed or unwanted memories, therefore the Employee and Family Assistance Program information was reviewed and made available. The interview process however, triggered an emotional response and release in all participants when sharing repressed past events. Many nurses took momentary breaks to regroup before continuing the interview process, and some nurses may have withheld specific experiences to limit recall of painful memories or to avoid uncomfortable feelings and emotions. This was a significant vulnerability which had the potential to re-ignite repressed experiences and may have placed nurses at risk of compromised psychological health. To mitigate this risk, follow-up with the Employee and Family Assistance

Program was reinforced with each participant after their initial interview, and again at their follow-up interview.

Finally, this study was conducted with nurses providing care in rural setting in which they also lived in, and were embedded in the community with strong connections and bonds. As such, the results may not be generalizable to other rural nurses who are not integrated into the community in which they are working or do not have established local community ties, such as in the case of temporary contract nurses deployed from urban centers or in communities removed from where they live, to provide care in rural healthcare settings.

5.6 Overall Conclusion

This study addresses a gap in the scientific literature by providing a comprehensive understanding of the mental health implications of trauma on rural nurses that live in the community in which they practice, identifies how rural nurses deal with traumatic impacts of their practices, and outlines ways to support rural nurses in the context of the rural healthcare environment. The research emphasizes the need for a more effective infrastructure centered on organizational support, improved management practices, and enhanced and accessible psychological services. Such interventions to support rural nurses will in turn build a culture of safety, minimize the risk of harm, and enable the delivery of safer patient care. Health care leaders and organizations have a responsibility and need to establish more ambitious protective strategies, build on the current culture of strength, and ensure that the current and future rural work environment for RNs is healthy and safe.

REFERENCES

Adriaenssens, J., De Gucht, V., & Maes, S. (2012). The impact of traumatic events on emergency room nurses: Findings from a questionnaire survey. *International Journal of Nursing Studies*, *49*(11), 1411-1422. doi:10.1016/j.ijnurstu.2012.07.003

Adriaenssens, J., De Gucht, V., & Maes, S. (2015a). Causes and consequences of occupational stress in emergency nurses, a longitudinal study. *Journal of Nursing Management, 23*(3), 346-358. doi:10.1111/jonm.12138

Adriaenssens, J., De Gucht, V., & Maes, S. (2015b). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies, 52*, 649-661. doi:10.1016/j.ijnurstu.2014.11.004

Al-Sawai, A. (2013). Leadership of healthcare professionals: Where do we stand? *Oman Medical Journal, 28*(4), 285-288. doi:10.5001/omj.2013.79

Arthur, E. Seymour, A., Dartnall, M., Beltgens, P. Poole, N., Smylie, D., … & Schmidt, R. (2013). Victoria, B.C.: Provincial Substance Use Planning Council. Retrieved from http://bccewh.bc.ca/wp-content/uploads/2012/05/2013_TIP-Guide.pdf.

Austin, W., Goble, E., Leier, B., & Byrne, P. (2009). Compassion fatigue: The experience of nurses. *and Social Welfare*, *3*(2), 195-214. doi.org/10.1080/17496530902951988

Baker, T., & Dawson, S. L. (2013). What small rural emergency departments do: A systematic review of observational studies. *Australian Journal of Rural Health, 21*(5), 254-261. doi:10.1111/ajr.12046

Beck, C. T. (2011). Secondary traumatic stress in nurses: A systematic review. *Archives of Psychiatric Nursing, 25*(1), 1-10. doi:10.1016/j.apnu.2010.05.005

Bercier, M. L., & Maynard, B. R. (2015). Interventions for secondary traumatic stress with mental health workers: A systematic review. *Research on Social Work Practice*, *25*(1), 81-89. doi:10.1177/1049731513517142

Bjorn, P. (2012). Rural teletrauma: Applications, opportunities, and challenges. *Advanced Emergency Nursing Journal*, *34*(3), 232-237. doi:10.1097/TME.0b013e31825f6237

Bomyea, J., Risbrough, V., & Lang, A. J. (2012). A consideration of select pre-trauma factors as key vulnerabilities in PTSD. *Clinical Psychology Review*, *32*(7), 630-641. doi:10.1016/j.cpr.2012.06.008

Bowen, E. A., & Murshid, N. S. (2016). Trauma-informed social policy: A conceptual

framework for policy analysis and advocacy. *American Journal of Public Health, 106*(2), 223-229. Retrieved from https://cjnr.archive.mcgill.ca/article/download/2233/2227.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi: 10.1191/1478088706qp063oa

Bremner, J. D. (2006). Traumatic stress: Effects on the brain. *Dialogues in Clinical Neuroscience, 8(*4), 445 -461. Retrieved from https://www.ncbi.nlm.nih.gov/ pmc/articles/PMC3181836/

Burg, M. M., & Soufer, R. (2016). Post-traumatic stress disorder and cardiovascular disease. *Current Cardiology Reports, 18*(10), 1-7. doi:10.1016/S2215-0366(16)30377-7

Burrows, S., Auger, N., Gamache, P., & Hamel, D. (2013). Leading causes of unintentional injury and suicide mortality in Canadian adults across the urban-rural continuum. *Public Health Reports, 128*(6), 443-453. doi: 10.1177/003335491312800604.

Caddick, N., & Smith, B. (2014). The impact of sport and physical activity on the well-being of combat veterans: A systematic review. *Psychology of Sport and Exercise, 15*(1), 9-18. doi:10.1016/j.psychsport.2013.09.011

Canadian Agricultural Injuries (2011). *Agricultural fatalities in Canada, 1990-2008*. Canadian Agricultural Safety Association. Winnipeg, Manitoba: Author. Retrieved from http://www.cair-sbac.ca/wp-content/uploads/2012/03/National-Report-1990-2008-FULL-REPORT-FINAL.pdf.

Canadian Association of Mental Health (2016). *Mental health and primary care policy framework.* Centre for Addiction and Mental Health. Retrieved from https://www.camh.ca/-/ media/files/pdfs---public-policy-submissions/ primarycarepolicyframework_march2016-pdf.pdf

Canadian Center for Occupational Health and Safety (2020). *Mental health - recognizing psychological health and safety hazards.* Retrieved from https://www.ccohs.ca/oshanswers/psychosocial/mentalhealth_checklist_phs.html

Canadian Federation of Nurses Unions (2017). *Enough is enough. Putting a stop to violence in the health care sector.* Retrieved from https://nursesunions.ca/wp-content/uploads/ 2017/05/CFNU_Enough-is-Enough_June1_FINALlow.pdf

Canadian Human Rights Commission (2008). P*olicy and Procedure on the Accommodation of*

Mental Illness. . Retrieved from https://www.chrc-ccdp.gc.ca/eng/content/policy-and-procedures-accommodation-mental-illness

Canadian Human Right Tribunal (2016). *A Guide to Understanding the Canadian Human Rights Tribunal.* Retrieved from https://www.chrt-tcdp.gc.ca/index-en.html

Canadian Institute for Health Information (CIHI) (2016). Regulated Nurses 2015. *Canada and Jursidictional Highlights.* CIHI. Ottawa: CIHI.

Canadian Institute for Health Information (CIHI) (2018). *Health Workforce.* CIHI. Ottawa: CIHI.

Canadian Mental Health Association (2019). *Rural and northern community issues in mental health. 1-11.* Retrieved from https://ontario.cmha.ca/documents/rural-and-northern-community-issues-in-mental-health/

Canadian Nurses Association (2019). *CIHI report reveals optimistic signposts for future of the nursing profession.* Retrieved from https://www.cna-aiic.ca/en/news-room/news-releases/2019/cihi-report-reveals-optimistic-signposts-for-future-of-the-nursing-profession

Cecil, P., & Glass, N. (2015). An exploration of emotional protection and regulation in nurse–patient interactions: The role of the professional face and the emotional mirror. *Collegian, 22*(4), 377-385. doi:10.1016/j.colegn.2014.06.002

Center for Substance Abuse Treatment (2014). *Trauma-informed care in behavioral health services.* Rockville (MD): Substance Abuse and Mental Health Services Administration (US). Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK207188/

Charmaz, K. (2014). *Constructing Grounded Theory* (2nd Ed.). Thousand Oaks, CA: Sage.

Christiansen, D. M., & Hansen, M. (2015). Accounting for sex differences in PTSD: A multi-variable mediation model. *European Journal of Psychotraumatology, 6*, 26068-26068. doi: 10.3402/ejpt.v6.26068

Christodoulou-Fella, M., Middleton, N., Papathanassoglou, E. D. E., & Karanikola, M. N. K. (2017). Exploration of the association between nurses' moral distress and secondary traumatic stress syndrome: Implications for patient safety in mental health services. *BioMed Research International.* doi:10.1155/2017/1908712

Cieslak, R., Shoji, K., Douglas, A., Melville, E., Luszczynska, A., & Benight, C. C. (2014). A meta-analysis of the relationship between job burnout and secondary traumatic stress

among workers with indirect exposure to trauma. *Psychological Services*, *11*(1), 75-86. doi:10/1037/a0033798

Clarke, J. (2016). Difficulty accessing health care services in Canada. Retrieved from https://www150.statcan.gc.ca/n1/pub/82-624-x/2016001/article/14683-eng.htm

Clark, R., & McLean, C. (2018). The professional and personal debriefing needs of ward based nurses after involvement in a cardiac arrest: An explorative qualitative pilot study. *Intensive and Critical Care Nursing*, *100*(47), 78-84. doi:10.1016/j.iccn.2018.03.009

Cohen, K., & Collens, P. (2013). The impact of trauma work – A meta-synthesis on vicarious trauma and vicarious trauma growth. *Psychological Trauma: Theory, Research, Practice, and Policy*, *5*(6), 570-580. doi:10.1037/a0030388

Copeland, D., & Liska, H. (2016). Implementation of a post-code pause. *Journal of Trauma Nursing*, *23*(2), 58-64. doi:10.1097/JTN.0000000000000187

Cyr, C., Mckee, H., O'Hagan, M., & Priest, R. (2010). *Making the case for peer support.* Retrieved from https://www.mentalhealthcommission.ca/sites/default/files/2016-07/MHCC_Making_the_Case_for_Peer_Support_2016_Eng.pdf

Daniels, J. K., Frewen, P., McKinnon, M. C., & Lanius, R. A. (2011). Default mode alterations in posttraumatic stress disorder related to early-life trauma: A developmental perspective. *Journal of Psychiatry and Neuroscience*, *36*(1), 56-9. doi:10.1503/jpn.100050

DePrince, A., & Newman, E. (2011). Special issue editorial: The art and science of trauma-focused training and education. *Psychological Trauma: Theory, Research, Practice, and Policy*, *3*(3), 213-214. doi:10.1037/a0024640

Dekeseredy, P., Kurtz Landy, C. M., & Sedney, C. L. (2019). An exploration of work related stressors experienced by rural emergency nurses. *Online Journal of Rural Nursing & Health Care*, *19*(2). 2-24. doi:10.14574/ojrnhc.v19i2.550

DesMeules, M., Pong, R., Lagacé, C., Heng, D., Manuel, D., Pitblado, R.,…& Koren, I. (2006). How healthy are rural Canadians? An assessment of their health status and health determinants. *Canadian Institute for Health Information*. Retrieved from http://www.cwhn.ca/en/node/28300

Dominguez-Gomez, E., & Rutledge, D. N. (2009). Prevalence of secondary traumatic stress among emergency nurses. *Journal of Emergency Nursing*, *35*(3), 199-204. doi:10.1016/j.jen.2008.05.003

Dukhanin, V., Edrees, H. H., Connors, C. A., Kang, E., Norvell, M., & Wu, A. W. (2018). Case: A second victim support program in pediatrics: Successes and challenges to implementation. *Journal of Pediatric Nursing*, 41(1), 54-59. doi:10.1016/j.pedn.2018.01.011

du Plessis, V., Beshiri, R., Bollman, R. D., & Clemenson, H. (2001). Definitions of rural. *Rural and Small Town Canada Analysis Bulletin, 3*(3), 1-17. Ottawa, Canada: Statistics Canada. Retrieved from http://www.statcan.gc.ca.

du Québec, B. D. N., & Canadian Standards Association. (2013). *National Standard of Canada: Psychological health and safety in the workplace: Prevention, promotion, and guidance to staged implementation.* Commissioned by the Mental Health Commission of Canada. Retrieved from https://www.mentalhealthcommission.ca

Durand, F., Isaac, C., & Januel, D. (2019). Emotional memory in post-traumatic stress disorder: A systematic PRISMA review of controlled studies. *Frontiers in Psychology*, *10(303)*, 1-15. doi:10.3389/fpsyg.2019.00303

Ebright, P. R. (2010). The complex work of RNs: Implications for healthy work environments. *Online Journal of Issues in Nursing*, *15*(1). doi: 10.3912/OJIN.

Elhart, M. A., Dotson, J., & Smart, D. (2019). Psychological debriefing of hospital emergency personnel: Review of critical incident stress debriefing. *International Journal of Nursing Student Scholarship*, *6*(37), 1-17. Retrieved from https://pdfs.semanticscholar.org/952d/fbb7b0f2af04dc2fa74b825656e56373da44.pdf

Fleet, R., Lauzier, F., Tounkara, F. K., Turcotte, S., Poitras, J., Morris, J., ... & Dupuis, G. (2019). Profile of trauma mortality and trauma care resources at rural emergency departments and urban trauma centres in Quebec: a population-based, retrospective cohort study. *BMJ Open*, *9*(6). e028512. doi: 10.1136/bmjopen-2018-028512

Fleishman, J., Kamsky, H., & Sundborg, S. (2019). Trauma-informed nursing practice. *OJIN: The Online Journal of Issues in Nursing. 24*(2), Manuscript 3. Retrieved from https://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol-24-2019/No2-May-2019/Trauma-Informed-Nursing-Practice.html

Forchuk, C., Virani, T., & Soloman, M. (2016). Peer Support. *Healthcare Quarterly. 18* (Special Issue), 32-36. doi:10.12927/hcq.2016.24480

Ford, J. D., & Courtois, C. A. (2009). Defining and understanding complex trauma and complex traumatic stress disorders. In C.A. Courtois & J.D. Ford (Eds.) *Treating complex traumatic stress disorders: An evidence-based guide*, (pp. 13-30). New York, NY. The Guilford Press.

Franche, R. L., Murray, E. J., Ostry, A., Ratner, P. A., Wagner, S., & Harder, H. G. (2010). Work disability prevention in rural areas: A focus on healthcare workers. *Rural Remote Health*, 10(4), 1502-1502. Retrieved from https://www.rrh.org.au/articles/subviewnew.asp?ArticleID=1502

Gilbert, M., & Bilsker, D. (2012). *Psychological health and safety: An action guide for employers.* Retrieved from https://summit.sfu.ca/item/11206

Gomez, D., Berube, M., Xiong, W., Ahmed, N., Haas, B., Schuurman, N., & Nathens, A. B. (2010). Identifying targets for potential interventions to reduce rural trauma deaths: a population-based analysis. *Journal of Trauma and Acute Care Surgery, 69(*3), 633-639. doi:10.1097/TA.0b013e3181b8ef81

Gonzalez, R. P., Cummings, G., Mulekar, M., & Rodning, C. B. (2006). Increased mortality in rural vehicular trauma: Identifying contributing factors through data linkage. *Journal of Trauma and Acute Care Surgery*, *61*(2), 404-409. doi:10.1097/01.ta.0000229816.16305.94

Government of Canada (2019). *Study on crime in rural areas in Canada.* Report of the Standing Committee on Public Safety and National Security. Retrieved from https://www.ourcommons.ca/Content/Committee/421/SECU/Reports/RP10493887/securp33/securp33-e.pdf

Government of Newfoundland (2019). *Developing occupational health and safety programs.* Retrieved from https://www.gov.nl.ca/snl/ohs/safety-info/si-safety-programs/

Government of Saskatchewan (1993). *Occupational Health and Safety Act*, Section 2(p) (iii). Retrieved from www.qp.gov.sk.ca

Graham, J. (2012). Cognitive behavioural therapy for occupational trauma: A systematic literature review exploring the effects of occupational trauma and the existing CBT support pathways and interventions for staff working within mental healthcare including allied professions. *The Cognitive Behaviour Therapist, 5*(1), 24-45. doi:10.1017/S1754470X12000025

Guitar, N. A., & Molinaro, M. L. (2017). Vicarious trauma and secondary traumatic stress in health care professionals. *University of Western Ontario Medical Journal*, *86*(2), 42-43. doi:10.5206/uwomj.v86i2.2021

Health Canada (2007). Preparing for and responding to trauma in the workplace: A manager's eguide. *Environmental and Workplace Health.* Retrieved from https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/occupational-health-safety/preparing-responding-trauma-workplace-manager-eguide.html

Healy, S., & Tyrrell, M. (2013). Importance of debriefing following critical incidents. *Emergency Nurse: The Journal of the RCN Accident and Emergency Nursing Association*, *20*(10), 32-37. Retrieved from https://journals.rcni.com/doi/abs/10.7748/en2013.03.20.10.32.s8

Hegney, D., Eley, R., Osseiran-Moisson, R., & Francis, K. (2015). Work and personal well-being of nurses in Queensland: Does rurality make a difference? *Australian Journal of Rural Health*, *23*(6), 359-365. doi:10.1111/ajr.12206

Hensel, J. M., Ruiz, C., Finney, C., & Dewa, C. S. (2015). Meta-analysis of risk factors for secondary traumatic stress in therapeutic work with trauma victims. *Journal of Traumatic Stress*, *28*(2), 83-91. doi:10.1002/jts.21998

Hinderer, K. A., VonRueden, K. T., Friedmann, E., McQuillan, K. A., Gilmore, R., Kramer, B., & Murray, M. (2014). Burnout, compassion fatigue, compassion satisfaction, and secondary traumatic stress in trauma nurses. *Journal of Trauma Nursing*, *21*(4), 160-169. doi: 10.1097/JTN.0000000000000055

Hunsberger, M., Baumann, A., Blythe, J., & Crea, M. (2009). Sustaining the rural workforce: Nursing perspectives on worklife challenges. *The Journal of Rural Health,* 25(1), 17-25 doi:10.1111/j.1748-0361.2009.00194.x

Izzo, E., & Miller, V. C. (2010). *Second-hand shock: Surviving and overcoming vicarious trauma*. Scottsdale, AZ: HCI Press.

Jahner, S., Penz, K., Stewart, N. J., & MacLeod, M. L. (2020). Exploring the distressing events and perceptions of support experienced by rural and remote nurses: A thematic analysis of national survey data (in press).

Johnson, P. B. (2019). Caring for the caregiver: Achieving the quadruple aim through a peer

support program. *Nurse Leader, 17*(3), 189-192. doi:10.1016/j.mnl.2019.03.009

Kanno, H., & Giddings, M. M. (2017). Hidden trauma victims: Understanding and preventing traumatic stress in mental health professionals. *Social Work in Mental Health, 15*(3), 331-353. doi:10.1080/15332985.2016.1220442

Karunanayake, C. P., Rennie, D. C., Hagel, L., Lawson, J., Janzen, B., Pickett, W., Dosman, J. A., & Pahwa, P. (2015). Access to specialist care in rural Saskatchewan: The Saskatchewan rural health study. *Healthcare* (Basel, Switzerland), 3(1), 84-99. doi:10.3390/healthcare3010084

Kearns, M. C., Ressler, K. J., Zatzick, D., & Rothbaum, B. O. (2012). Early interventions for PTSD: a review. *Depression and Anxiety, 29*(10), 833-842. doi:10.1002/da.21997

Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical psychology review, 31*(6), 1041-1056. doi:10.1016/j.cpr.2011.04.006

Kenny, A., Endacott, R., Botti, M., & Watts, R. (2007). Emotional toil: Psychosocial care in rural settings for patients with cancer. *Journal of Advanced Nursing, 60,* 663-672. doi:10.1111/j.1365-2648.2007.04453.x

Knaak, S., Mantler, E., & Szeto, A. (2017). Mental illness-related stigma in healthcare: Barriers to access and care and evidence-based solutions. *Healthcare Management Forum, (30),*2, 111-116. doi:10.1177/0840470416679413

Kulig, J.C., Andrews, M.E., Stewart, N.L., Pitblado, R., MacLeod, M.L., Bentham, & Smith, B. (2008). How do registered nurses define rurality? *Australian Journal of Rural Health, 16*(1), 28-32. doi:10.1111/j.1440-1584.2007.00947.x

Kulig, J., & Botey, A. P. (2016). Facing a wildfire: What did we learn about individual and community resilience? Natural Hazards, 82(3), 1919-1929. doi:10.1007/s11069-016-2277-1

Kulig, J. C., Kilpatrick, K., Moffitt, P., & Zimmer, L. (2015). Recruitment and retention in rural nursing: It's still an issue!. *Nursing Leadership, 28*(2), 40-50. doi:10.12927/cjnl.2015.24353

Kulig, J. C., Kilpatrick, K., Moffitt, P., & Zimmer, L. (2013). *Rural and remote nursing practice: An updated documentary analysis*. University of Northern British Columbia School of

Nursing. Retrieved from https://nwtresearch.com/sites/default/files/unbc_uda_report_final_lr.pdf.

Kulig, J. C., Stewart, N., Penz, K., Forbes, D., Morgan, D., & Emerson, P. (2009). Work setting, community attachment, and satisfaction among rural and remote nurses. *Public Health Nursing, 26*(5), 430-439. https://doi.org/10.1111/j.1525-1446.2009.00801.x

Lauder, W., Reel, S., Farmer, J., & Griggs, H. (2006). Social capital, rural nursing and rural nursing theory. *Nursing Inquiry, 13*(1), 73-79. doi:10.1111/j.1440-1800.2006.00297.x

Lee, H. J., & Winters, C. A. (2012). Testing rural nursing theory: Perceptions and needs of service providers. *Online Journal of Rural Nursing and Health Care, 4*(1), 51-63. doi:10.14574/ojrnhc.v4i1.212

Lenthall, S., Wakerman, J., Opie, T., Dollard, M., Dunn, S., Knight, S. …Watson, C. (2009). What stresses remote area nurses? Current knowledge and future action. *Australian Journal of Rural Health, 17*(4), 208-213. doi:10.1111/j.1440-1584.2009.01073.x

Lenthall, S., Wakerman, J., Dollard, M. F., Dunn, S., Knight, S., Opie, T., Rickard, G., & MacLeod, M. (2018). Reducing occupational stress among registered nurses in very remote Australia: A participatory action research approach. *Collegian, 25*(2), 181-191. doi:10.1016/j.colegn.2017.04.007

LeSergent, C. M., & Haney, C. J. (2005). Rural hospital nurse's stressors and coping strategies: A survey. *International Journal of Nursing Studies, 42*(3), 315-324. doi:10.1016/j.ijnurstu.2004.06.017

Lindsay, J. A., Hudson, S., Martin, L., Hogan, J. B., Nessim, M., Graves, L., ... & White, D. (2017). Implementing video to home to increase access to evidence-based psychotherapy for rural veterans. *Journal of Technology in Behavioral Science, 2*(3-4), 140-148. doi:10.1007/s41347-017-0032-4

Loiselle, C. G., & Profetto-McGrath, J. (2011). Critiquing research reports. In D.F. Polit & C. T. Beck (Eds.). *Canadian essentials of nursing research.* (3rd ed., 344-367). Philadelphia, PA: Lippincott Williams and Wilkins.

Lundman, B., Aléx, L., Jonsén, E., Norberg, A., Nygren, B., Fischer, R. S., & Strandberg, G. (2010). Inner strength—A theoretical analysis of salutogenic concepts. *International Journal of Nursing Studies, 47*(2), 251-260. doi:10.1016/j.ijnurstu.2009.05.020

Mabey, L. J., Wheeler, K., Ronconi, J. M., Smith, J. A. (2017). What do psychiatric nurses know

about trauma treatment? A national survey of psychiatric advanced practice nurses. Retrieved from https://collections.lib.utah.edu/details?id=1209240

MacKinnon, K. (2012). We cannot staff for 'what ifs': The social organization of rural nurses' safeguarding work. *Nursing Inquiry, 19*(3), 259-269. doi:10.1111/j.1440-1800.2011.00574.x

MacLeod, M. L., Kulig, J. C., Stewart, N. J., Pitblado, J. R., & Knock, M. (2004). The nature of nursing practice in rural and remote Canada. *The Canadian Nurse, 100*(6), 27-31. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/15301092

MacLeod, M.L., Stewart, N.J., Kulig, J.C., Anguish, P., Andrews, M.E., Banner, D., … Koren, I. (2017). Nurses who work in rural and remote communities in Canada: A national survey. *Human Resources for Health, 15*(1), 34. doi:10.1186/s12960-017-0209-0

MacLeod, M., Kulig, J., & Stewart, N. (2019). Lessons from 20 years of research on nursing practice in rural and remote Canada. *Canadian Nurse*. 1-12. Retrieved from https://www.canadian-nurse.com

MacLeod, M. L., Stewart, N. J., Kosteniuk, J. G., Penz, K. L., Olynick, J., Karunanayake, C. P., ... & Zimmer, L. V. (2019). Rural and remote registered nurses' perceptions of working beyond their legislated scope of practice. *Canadian Journal of Nursing Leadership, 32*(1), 20-29. doi:10.12927/cjnl.2019.25851

Malhotra, M., & Chebiyan, S. (2016). Posttraumatic growth: Positive changes following adversity-an overview. *International Journal of Psychology and Behavioral Sciences, 6*(3),109-18. doi:10.5923/j.ijpbs.20160603.03

Manitoba Nurses Union (2014). *PTSD in the nursing profession.* Retrieved from http://traumadoesntend.ca/

Manitoba Nurses Union (2017). *Submission to the advisory council on workplace safety and health.* Retrieved from https://www.gov.mb.ca/labour/safety/pdf/ar_submission_12.pdf.

Mayo, D., Corey, S., Kelly, L. H., Yohannes, S., Youngquist, A. L., Stuart, B. K., ... & Loewy, R. L. (2017). The Role of trauma and stressful life events among individuals at clinical high risk for psychosis: A Review. *Frontiers in Psychiatry, 8*(55), 1-17. doi:10.3389/fpsyt.2017.00055

McCubbin, J. A., Zinzow, H. M., Hibdon, M. A., Nathan, A. W., Morrison, A. V., Hayden, G.

W., ... & Switzer, F. S. (2016). Subclinical posttraumatic stress disorder symptoms: Relationships with blood pressure, hostility, and sleep. *Cardiovascular Psychiatry and Neurology*. Retrieved from https://europepmc.org/article/PMC/4925987

McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress*, *3*(1), 131-149. doi:10.1002/jts.2490030110

Meadors, P., Lamson, A., Swanson, M., White, M., & Sira, N. (2010). Secondary traumatization in pediatric healthcare providers: Compassion fatigue, burnout, and secondary traumatic stress. *OMEGA-Journal of Death and Dying, 60*(2),103-128. doi:10.2190/OM.60.2.a

Mealer, M., Burnham, E. L., Goode, C. J., Rothbaum, B., & Moss, M. (2009). The prevalence and impact of post traumatic stress disorder and burnout syndrome in nurses. *Depression and Anxiety, 26*(12), 1118-1126. doi:10.1002/da.20631

Mealer, M., & Jones, J. (2013). Posttraumatic stress disorder in the nursing population: A concept analysis. *Nursing Forum, 48*(4), 279-288. doi:10.1111/nuf.12045

Mealer, M., Schmiege, S. J., & Meek, P. (2016). The Connor-Davidson Resilience Scale in critical care nurses: A psychometric analysis. *Journal of Nursing Measurement*, *24*(1), 28-39. doi:10.1891/1061-3749.24.1.28

Mell, H. K., Mumma, S. N., Hiestand, B., Carr, B. G., Holland, T., & Stopyra, J. (2017). Emergency medical services response times in rural, suburban, and urban areas. *JAMA Surgery*, *152*(10), 983-984. http://dx.doi.org/10.1001/jamasurg.2017.2230

Menschner, C., & Maul, A. (2016). *Key ingredients for successful trauma-informed care implementation*. Trenton: Center for Health Care Strategies, Incorporated. Retrieved from http://www.chcs.org/media/Brief-Key-Ingredients-for-TIC-Implementation-1.pdf.

Mental Health Commission of Canada [MHCC] (2013). *National standard of Canada for psychological health and safety in the workplace.* Retrieved from https://www.mentalhealthcommission.ca/English/what-we-do/workplace/national-standard

Mental Health Commission of Canada (2020). *Our commitment to health and safety.* Retrieved from https://www.mentalhealthcommission.ca/English/our-commitment-workplace-health-and-safety

Misener, R. M., MacLeod, M. L., Banks, K., Morton, A. M., Vogt, C., & Bentham, D. (2008). "There's rural, and then there's rural": Advice from nurses providing primary healthcare in northern remote communities. *Nursing Leadership, 21*(3), 54-63. https://www.ncbi.nlm.nih.gov/pubmed/18815471

Missouridou, E. (2017). Secondary posttraumatic stress and nurses' emotional responses to patient's trauma. *Journal of Trauma Nursing*, *24*(2), 110-115. doi:10.1097/JTN.0000000000000274

Moazzami, B. (2016). *Strengthening Rural Canada: Fewer and Older: Population and Demographic Challenges Across Rural Canada: a Pan-Canadian Report*. Essential Skills Ontario. Retrieved from http://strengtheningruralcanada.ca/file/Fewer-Older-Population-and-Demographic-Challenges-Across-Rural-Canada.pdf

Molinari, D., & Bushy, A. (2011). *The rural nurse: Transition to practice* (pp. 3-21). New York, NY. Springer Publishing Company Inc.

Molitierno, T. (2018). Trauma-Informed care as part of nursing school curricula. *Journal of Psychosocial Nursing and Mental Health Services*, *56*(5), 5-6. doi:10.3928/02793695-20180322-03

Morrison, L. E., & Joy, J. P. (2016). Secondary traumatic stress in the emergency department. *Journal of Advanced Nursing*, *72*(11), 2894-2906. doi:10.1111/jan.13030

Moszczynski, A. B., & Haney, C. J. (2002). Stress and coping of Canadian rural nurses caring for trauma patients who are transferred out. *Journal of Emergency Nursing*, *28*(6), 496-504. doi:10.1067/men.2002.129727

Nelson, W., Pomerantz, A., Howard, K., & Bushy, A. (2007). A proposed rural healthcare ethics agenda. *Journal of Medical Ethics*, *33*(3), 136-139. doi:10.1136/jme.2006.015966

Nelson, C. H., & Park, J. (2012). The Rural-urban continuum as place: What can be learned from the Canadian Community Health Survey (CCHS) – Mental health and well-being? In J.C. Kulig, & A.M. Williams (Eds.), *Health in Rural Canada* (pp. 137-156). Vancouver, BC: UBC Press.

O'Hagan, M., Cyr, C., McKee, H., & Priest, R. (2010). Making the case for peer support. Report to the Peer Support Project Committee of the Mental Health Commission of Canada. Retrieved from http://www.mentalhealthcommission.ca/English/document/445/making-case-peer-support

O'Neill, L. K. (2010). Mental health support in northern communities: Reviewing issues on isolated practice and secondary trauma. *Rural and Remote health*, *10*(2), 1369-1369. Retrieved from https://www.rrh.org.au/journal/article/1369

Opie, T., Dollard, M., Lenthall, S., Wakerman, J., Dunn, S., Knight, S., & MacLeod, M. (2010). Levels of occupational stress in the remote area nursing workforce. *Australian Journal of Rural Health, 18*(6), 235-241. doi:10.1111/j.1440-1584.2010.01161.x

Opie, T., Lenthall, S., Dollard, M., Wakerman, J., MacLeod, M., Knight, S., ... & Rickard, G. (2010). Trends in workplace violence in the remote area nursing workforce. *Australian Journal of Advanced Nursing, 27*(4), 18-23. http://hdl.handle.net/2328/32801

Opie, T., Lenthall, S., Wakerman, J., Dollard, M., MacLeod, M., Knight, S.,…Dunn, S. (2011). Occupational stress in the Australian nursing workforce: A comparison between hospital-based nurses and nurses working in very remote communities. *Australian Journal of Advanced Nursing*, *28*(4), 36-43. http://www.ajan.com.au/ajan_28.4.html

Paré, J. M., Petersen, P., & Sharp, D. B. (2017). A story of emergent leadership: lived experiences of nurses in a critical access hospital. *Online Journal of Rural Nursing and Health Care, 17*(2), 103-125. doi:10.14574/ojrnhc.v17i2.454

Patel, J., & Patel, P. (2019). Consequences of repression of emotion: Physical health, mental health and general well being. I*nternational Journal of Psychotherapy Practice and Research, 1*(3), 16-21. doi:10.14302/issn.2574-612X.ijpr-18-2564

Pearlman, L. A., & Saakvitne, K. W. (1995). *Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors*. New York, NY: WW Norton & Co.

Peek-Asa, C., Zwerling, C., & Stallones, L. (2004). Acute traumatic injuries in rural populations. *American Journal of Public Health, 94*(10), 1689-1693. doi:10.2105/ajph.94.10.1689

Peer Support Accreditation and Certification (Canada) (2016). *National certification handbook (Version 3).* Retrieved from http://www.psac-canada.com/

Pluye, P., Gagnon, M. P., Griffiths, F., & Johnson-Lafleur, J. (2009). A scoring system for appraising mixed methods research, and concomitantly appraising qualitative, quantitative and mixed methods primary studies in mixed studies reviews. *International Journal of Nursing Studies*, *46*(4), 529-546. doi:10.1016/j.ijnurstu.2009.01.009

Poulsen, D. V., Stigsdotter, U. K., Djernis, D., & Sidenius, U. (2016). 'Everything just seems

much more right in nature': How veterans with post-traumatic stress disorder experience nature-based activities in a forest therapy garden. *Health Psychology Open*, *3*(1), 1-14. doi:10.1177/2055102916637090

Qi, W., Gevonden, M., & Shalev, A. (2016). Prevention of post-traumatic stress disorder after trauma: Current evidence and future directions. *Current Psychiatry Reports, 18*(2), 20. doi:10.1007/s11920-015-0655-0

Rao, N. & Kemper, K.J. (2017). Online training in specific meditation practices improves gratitude, well-being, self-compassion, and confidence in providing compassionate care among health professionals. *Journal of Evidence-Based Complementary & Alternative Medicine, 22,* 237–241. doi:10.1177/2156587216642102

Ramalisa, R. J., du Plessis, E., & Koen, M. P. (2018). Increasing coping and strengthening resilience in nurses providing mental health care: Empirical qualitative research. *Health SA Gesondheid, 23*, 1-9. doi:10.4102/hsag.v23i0.1094

Reeves, E. (2015). A synthesis of the literature on trauma-informed care. *Issues in Mental Health Nursing, 36*(9), 698-709. doi:10.3109/01612840.2015.1025319

Registered Nurses' Association of Ontario (2017). *Crisis intervention for adults using a trauma informed* approach: Initial four weeks of management (3rd ed). Toronto, ON: Author. Retrieved from https://rnao.ca/sites/rnaoca/files/bpg/Crisis_Intervention_ FINAL_WEB.pdf.

Roberts, N. P., Kitchiner, N. J., Kenardy, J., Lewis, C. E., & Bisson, J. I. (2019). Early psychological intervention following recent trauma: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, *10*(1), 1695486. doi:10.1080/20008198.2019.1695486

Rose, J., & Glass, N. (2009). An investigation of emotional wellbeing and its relationship to contemporary nursing practice. *Collegian, The Australian Journal of Nursing Practice, Scholarship and Research, 16*(4), 185-192. doi:10.1016/j.colegn.2009.08.001

Sabo, B. M. (2008). Adverse psychosocial consequences: Compassion fatigue, burnout and vicarious traumatization: Are nurses who provide palliative and hematological cancer care vulnerable? *Indian Journal of Palliative Care*, *14*(1), 23-29. doi:10.4103/0973-1075. 41929

Samra, J. (2017). *The evolution of workplace mental health in Canada: Research report (2007-*

2017). Retrieved from https://www.hrpa.ca/Documents/Public/Thought-Leadership/The-Evolution-of-Workplace-Mental-Health-in-Canada.pdf

Saunders, C., & Carter, D. J. (2017). Right care, right place, right time: Improving the timeliness of health care in New South Wales through a public–private hospital partnership. *Australian Health Review*, *41*(5), 511-518. doi:10.1071/AH16075

Schock, K., Böttche, M., Rosner, R., Wenk-Ansohn, M., & Knaevelsrud, C. (2016). Impact of new traumatic or stressful life events on pre-existing PTSD in traumatized refugees: Results of a longitudinal study. *European Journal of Psychotraumatology, 7*(1), 1-11. doi:10.3402/ejpt.v7.32106

Scott, S. D., Hirschinger, L. E., Cox, K. R., McCoig, M., Brandt, J., & Hall, L. W. (2009). The natural history of recovery for the healthcare provider "second victim" after adverse patient events. *BMJ Quality & Safety, 18*(5), 325-330. Retrieved from https://qualitysafety.bmj.com/content/18/5/325

Shah, S. M., Hagel, L., Lim, H., Koehncke, N., & Dosman, J. A. (2011). Trends in farm fatalities, Saskatchewan, Canada: 1990-2004. *Canadian Journal of Public Health, 102*(1), 51-54. doi:10.1007/BF03404877

Shain, M., Arnold, I., & GermAnn, K. (2012). The road to psychological safety: Legal, scientific, and social foundations for a Canadian National Standard on Psychological Safety in the Workplace. *Bulletin of Science, Technology & Society*, 32(2), 142-162. doi:10.1177/0270467612455737

Shore, H. (2014). After compression, time for decompression: debriefing after significant clinical events. *Infant, 10(*4), 117-119. Retrieved from http://www.infantjournal.co.uk/pdf/inf_058_ion.pdf

Simons, R., Brasher, P., Taulu, T., Lakha, N., Molnar, N., Caron, N.,… Hameed, M. (2010). A population-based analysis of injury-related deaths and access to trauma care in rural-remote Northwest British Columbia. *Journal of Trauma and Acute Care. 69*(1), 11-19. doi:10.1097/TA.0b013e3181e17b39

Sinclair, H. A., & Hamill, C. (2007). Does vicarious traumatisation affect oncology nurses? A literature review. *European Journal of Oncology Nursing, 11*(4), 348-356. doi:10.1016/j.ejon.2007.02.007

Singh, C., Cross, W. & Jackson, D. (2015). Staff burnout – A comparative study of metropolitan

and rural mental health nurses within Australia. *Issues in Mental Health Nursing 36*(7), 737- 739. doi:10.3109/01612840.2014.996838

Squires, M. A. E., Tourangeau, A. N. N., Spence Laschinger, H. K., & Doran, D. (2010). The link between leadership and safety outcomes in hospitals. *Journal of Nursing Management, 18*(8), 914-925. doi:10.1111/j.1365-2834.2010.01181.x

Stanley, D., & Stanley, K. (2019). Clinical leadership and rural and remote practice: A qualitative study. *Journal of Nursing Management. 27(*6), 1-11. doi:10.1111/jonm.12813

Starke, R., Spenceley, S., Caffaro, M., Sansregret, B., Garbutt, A., Dupres, K., & Robbins, C. (2017). *Rural health services review final report: Understanding the concerns and challenges of Albertans who live in rural and remote communities (*2017). Retrieved from https://open.alberta.ca/dataset/7030219/resource/df60d240-7b02-4f42-8e62-6364b2ad4ba4.

Statistics Canada (2019a). *Population estimates, quarterly.* Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901

Statistics Canada (2019b). *Mortality in Metropolitan Areas.* Retrieved from https://www150.statcan.gc.ca/n1/pub/82-003-x/1999001/article/4642-eng.pdf

Stokes, Y., Jacob, J. D., Gifford, W., Squires, J., & Vandyk, A. (2017). Exploring nurses' knowledge and experiences related to trauma-informed care. *Global Qualitative Nursing Research, 4,* 1-20. doi:10.1177/2333393617734510

Subedi, R., Greenberg, T. L., & Roshanafshar, S. (2019). Does geography matter in mortality? An analysis of potentially avoidable mortality by remoteness index in Canada. *Health reports, 30*(5), 3-15. Retrieved from https://www150.statcan.gc.ca/n1/pub/82-003-x/2019005/article/00001-eng.htm.

Sunderland, K., & Mishkin, W. (2013). Peer Leadership Group. *Mental Health Commission of Canada*. Retrieved from https://www.mentalhealthcommission.ca/sites/default/files/peer_support_guidelines.pdf.pdf.

Sweeney, A., Filson, B., Kennedy, A., Collinson, L., & Gillard, S. (2018). A paradigm shift: Relationships in trauma-informed mental health services. *BJPsych Advances, 24(*5), 319-333. doi:10.1192/bja.2018.29

Tabor, P. D. (2011). Vicarious traumatization: Concept analysis. *Journal of Forensic Nursing, 7*(4), 203-208. doi:10.1111/j.1939-3938.2011.01115.x

Tehrani, N., & Hesketh, I. (2019). The role of psychological screening for emergency service responders. *International Journal of Emergency Services, 8*(1), 4-19. Retrieved from https://www.emerald.com/insight/content/doi/10.1108/IJES-04-2018-0021/full/html

Terry, D., Lê, Q., Nguyen, U., & Hoang, H. (2015). Workplace health and safety issues among community nurses: A study regarding the impact on providing care to rural consumers. *BMJ Open*, *5*(8). doi:10.1136/bmjopen-2015-008306

Trauma Association of Canada (2011). Trauma System Accreditation Guidelines. Retrieved from http://www.traumacanada.ca/accreditation_committee/Accreditation_Guidelines_2011.pdf.

Ullström, S., Sachs, M. A., Hansson, J., Øvretveit, J., & Brommels, M. (2014). Suffering in silence: A qualitative study of second victims of adverse events. *BMJ Quality & Safety, 23*(4), 325-331. doi:10.1136/bmjqs-2013-002035

U.S. Department of Veteran Affairs (2020). *PTSD: National Center for PTSD.* Retrieved from https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp

U.S. Department of Health and Human Services (2017). *The fundamentals of data collection and evaluation.* Retrieved from https://www.samhsa.gov

Vasconcelos, S. C., Lopes de Souza, S., Botelho Sougey, E., de Oliveira Ribeiro, E. C., Costa do Nascimento, J. J., Formiga, M. B., ... & Silva, A. O. (2016). Nursing Staff Members Mental's Health and Factors Associated with the Work Process: An Integrative Review. *Clinical Practice and Epidemiology in Mental Health*, *12*(1). 167-176. doi: 10.2174/1745017901612010167

Von Rueden, K.T., Hinderer, K.A., McQuillan, K.A., Murray, M., Logan, T., Kramer, B.,… Friedmann, E. (2010). Secondary traumatic stress in trauma nurses: Prevalence and exposure, coping, and personal/environmental characteristics. *Journal of Trauma Nursing*, *17*(4), 191-200. doi:10.1097/jtn.0b013e3181ff2607

Wahl, C., Hultquist, T. B., Struwe, L., & Moore, J. (2018). Implementing a peer support network to promote compassion without fatigue. *Journal of Nursing Administration, 48*(12), 615-621. Retrieved from https://pubmed.ncbi.nlm.nih.gov/30431516/

Watts, J., & Robertson, N. (2015). Selecting a measure for assessing secondary trauma in nurses. *Nurse Researcher*, *23*(2), 30-35. doi:10.7748/nr.23.2.30.s7

Wheeler, K. (2018). A call for trauma competencies in nursing education. *Journal of the American Psychiatric Nurses Association*, *24*(1), 20–22. doi:10.1177/1078390317745080

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, *52*(5), 546-553. doi:10.1111/j.1365-2648.2005.03621.x

Williams, M. A. (2012). Rural professional isolation: An integrative review. *Online Journal of Rural Nursing and Health Care, 12*(2), 3-10. doi:10.14574/ojrnhc.v12i2.51

Wilson, T., Berwick, D. M., & Cleary, P. D. (2003). What do collaborative improvement projects do? Experience from seven countries. *The Joint Commission Journal on Quality and Safety*, *29*(2), 85-93. doi:10.1016/S1549-3741(03)29011-0

Winters, C. (2013a). The rural nursing theory: A literature review. In *Rural Nursing, Concepts, Theory and Practice* (4th ed., p 49 – 63). New York, NY. Springer.

Winters, C. (2013b). The distinctive nature and scope of rural nursing practice: Philosophical bases. In *Rural Nursing, Concepts, Theory and Practice* (4th ed., p 241 - 258). New York, NY. Springer.

World Health Organization (2000). *Mental health and work.* Retrieved from https://www.who.int/mental_health/media/en/712.pdf

World Health Organization (2013). *Guidelines for the management of conditions specifically related to stress.* Retrieved from www.who.int/mental_health/emergencies/ stress_guidelines/en/

Yonge, O., Myrick, F., Ferguson, L. M., & Grundy, Q. (2015). Lessons about boundaries and reciprocity in rural-based preceptorships. *Quality Advancement in Nursing Education-Avancées en formation infirmière*, *1*(2), 1-14. doi:10.17483/2368-6669.1002

Zibrik, K. J., MacLeod, M. L., & Zimmer, L. V. (2010). Professionalism in rural acute-care nursing. *CJNR (Canadian Journal of Nursing Research)*, *42*(1), 20-36. Retrieved from https://pubmed.ncbi.nlm.nih.gov/20420090/

Appendix A

Recruitment Collaborator Email Template

Hello _____,

In follow-up to our telephone conversation, I am a PhD student in the College of Nursing at the University of Saskatchewan, working under the supervision of Dr. Norma Stewart and Dr. Kelly Penz. The focus of my research is to explore the social processes of how RNs deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community.

I have recently met with your Director for approval to proceed with my research; therefore you may be aware that I am seeking RN volunteers in your facility to participate in this study. I would like to request your assistance as a recruitment collaborator to disseminate the study information therefore have mailed you a research package that includes study pamphlets outlining the purpose and details of the study, recruitment posters, and information to contact me. I am also willing to provide a presentation regarding the study at your next staff meeting to explain the study and answer any questions RNs may have.

The selection criteria for the study are a) current licensure as an RN with the SRNA; b) provide direct patient care in a rural acute health care facility in the SHR within the past year; c) work full-time or part-time; d) live in the rural community where they practice; e) have current or recent experience in rural nursing practice; and f) speak English fluently. Participants will be asked to take part in a face-to-face interview and followed up with a subsequent telephone interview approximately 2 weeks later. The interviews will be digitally recorded for later transcription verbatim. They will also be asked to keep reflective journal, a short writing activity to reflect on their experiences for approximately 1 – 2 weeks following the interview to document the thoughts and experiences that may have been triggered by the interview process or recalled following the interview.

This study will assist to better understand the impact of exposure to distressing traumatic events on rural RNs, may influence the decisions of policy-makers using proactive and preventative strategies, inform occupational health and safety practices and policies to support rural nursing practice, and will contribute to overall rural nursing knowledge. Please provide a contact name and phone number to arrange interview space at your site. Thank you for your assistance Feel free to contact me at any time if you have questions or would like to discuss further.

Sharleen Jahner RN BScN MN PhD(c)
Saskatoon Health Region I 306.280.8800
sharleen.jahner@saskatoonhealthregion.ca

Appendix B

Introduction Letter to Recruitment Collaborators

Introduction Letter to Recruitment Collaborators

College of Nursing

Re: Recruitment of Rural Acute Care RNs for a nursing study called "The Psychologically Traumatic Experiences of Rural Registered Nurses Who Live in the Same

Community" Dear Recruitment Collaborators,

My name is Sharleen Jahner and I am a registered nurse and PhD student in the College of Nursing at the University of Saskatchewan, working under the supervision of Dr. Norma Stewart and Dr. Kelly Penz. The focus of my research is to explore the social processes of how RNs deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community.

I am seeking RN volunteers to participate in the research study. I would like to request your assistance to disseminate the study information in your facility and assist me by identifying RNs that fit the selection criteria by asking them if I may contact them by telephone to discuss the study and share study information. I would also ask that you provide me the potential participant names and contact information of those that express interest and consent to have their name provided. Potential participants may also contact me directly by email sharleen.jahner@usask.ca
306-280-8800.

The selection criteria for the study are a) current licensure as an RN with the SRNA; b) provide direct patient care in a rural acute health care facility in the SHR within the past year; c) work full-time or part-time; d) live in the rural community where they practice; e) have current or recent experience in rural nursing practice; and f) speak English fluently.

Participants will be asked to take part in a face-to-face interview and followed up with a subsequent telephone interview approximately 2 weeks later. The interviews will be digitally recorded for later transcription verbatim. They will also be asked to keep reflective journal, a short writing activity to reflect on their experiences for approximately 1 – 2 weeks following the interview to document the thoughts and experiences that may have been triggered by the interview process or recalled following the interview. They will also be given the option to complete their journal entries electronically or in a paper format.

I have prepared a package of study materials that includes study pamphlets outlining the purpose and details of the study, recruitment posters, and information to contact me. I am also willing to provide a presentation regarding the study at your next staff meeting to explain the study and answer any questions RNs may have.

This study will assist to better understand the impact of exposure to distressing traumatic events, may influence the decisions of policy-makers using proactive and preventative strategies, inform occupational health and safety practices and policies to support rural nursing practice, and will contribute to rural nursing knowledge.

Thank you for your assistance. Feel free to contact me at any time if you have questions or would like to discuss further.

Sincerely,

Sharleen Jahner RN MN PhD(c)

Appendix C

Recruitment Poster

University of Saskatchewan

College of Nursing

RNs in Acute Care Rural Nursing Practice are Needed!

Add your Voice

Are you an RN in the rural nursing practice setting?

If so, this is an opportunity to participate in a research study about the psychological impact of exposure to traumatic events on Registered Nurses in the acute care practice setting.

Study Purpose

To explore the social processes of how RNs deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community.

What is Required?

Your participation is voluntary.

You will be asked to partake in 1 face to face interview followed up with 1 telephone interview 1 – 2 weeks later.

During that period of time, you will be asked to keep a brief daily journal to document your thoughts and experiences that may have been triggered by the interview process or recalled.

What is the Benefit of Participating?

Opportunity to share the types of traumatic events experienced and impact of exposure.

May influence decisions of policy-makers and inform occupational health and safety practice.

Contribute to the health and safety of rural nursing practice and overall rural nursing knowledge.

Nursing Research

Confidentiality: Your name will not appear on any of the data collected. You will only be identified by a coded number.

To Participate in this study Please Contact:

Sharleen Jahner RN MN PhD(c)
Telephone: (306) 280-8800 (Saskatoon)

Email: sas116@mail.usask.ca

Research supervisors: Dr. Norma Stewart and Dr. Kelly Penz University of Saskatchewan, College of Nursing

This study has received ethical approval from the University of Saskatchewan. If you have questions regarding your rights to participate you may contact the Ethics office at 306-966-2084

Who is Conducting the Research?

Sharleen Jahner RN MN PhD(c)
Telephone: (306) 280-8800
Sharleen.jahner@usask.ca

Research Supervisors:

Dr. Norma Stewart
Telephone: (306)-966-6254
norma.stewart@usask.ca

Dr. Kelly Penz
Telephone: (306)-337-3812
kelly.penz@usask.ca

This study has received ethical approval from the University of Saskatchewan Behavioral Ethics Board. If you have questions regarding your rights to participate you may contact the Ethics office at 306-966-2084

UNIVERSITY OF SASKATCHEWAN

To Participate in this study please contact:

Sharleen Jahner RN MN PhD(c)
Telephone: (306) 280-8800 (Saskatoon)
Email:
sharleen.jahner@usask.ca

The Psychological Impact of Exposure to Traumatic Events on Registered Nurses in the Rural Acute Care Practice Setting

UNIVERSITY OF SASKATCHEWAN

What is the Study Purpose?

To explore the social processes of how RNs deal with exposure to distressing traumatic events in the context of living and working in the same rural agricultural community.

What is Required?

You will be asked to partake in 1 face-to-face interview where I will ask you some open-ended questions about your exposure to traumatic experiences in rural nursing practice.

With your permission, the interview will be recorded for transcription.

The face-to-face interview will be followed up with 1 telephone interview approximately 1 – 2 weeks later. During that period of time, you will be asked to keep a brief daily journal to document your thoughts and experiences that may have been triggered by the interview process or recalled.

The total time commitment for the face-to-face interview will be approximately 30-60 minutes, and the telephone interview will be 15-20 minutes.

What is the Benefit of Participating?

Opportunity to share the types of traumatic events experienced and impact of exposure.

May influence decisions of policy-makers and inform occupational health and safety practice.

Contribute to the health and safety of rural nursing practice and overall rural nursing knowledge.

What are the Criteria to Participate?

1. Current licensure as an RN with the Saskatchewan Registered Nurses Association

2. Must provide direct patient care in a rural acute health care facility in the SHR within the past year

3. Work Full-time or part-time

4. Live in the rural community of practice

5. Have current or recent experience in rural nursing practice

6. Speak English fluently

Will my Information Remain Confidential?

Your name will not appear on any of the data collected. You will only be identified by a unique coded number. Strict confidentiality will be maintained throughout the study.

What are your Rights?

Your participation is voluntary and you have the right to withdraw from the study at any time.

Appendix E

Consent to Participate in the Study

CONSENT to PARTICIPATE IN A RESEARCH STUDY

UNIVERSITY OF SASKATCHEWAN

College of Nursing

You are invited to participate in a research study entitled *The Psychologically Traumatic Experiences of Rural Registered Nurses Who Live and Work in the Same Community.* Please read this form carefully and feel free to ask any questions that you may have. Your participation in this study is voluntary.

Researchers:
Sharleen Jahner, MN, RN, PhD Student, College of Nursing, University of Saskatoon, Saskatoon, SK. Phone: (306) 280-8800 Email: sharleen.jahner@usask.ca

Dr. Norma Stewart, PhD, RN, **Supervisor** College of Nursing, University of Saskatoon, Saskatoon, Phone: (306) 966-6254 Email: norma.stewart@usask..ca

Dr. Kelly Penz, PhD, RN **Supervisor** College of Nursing, University of Saskatoon, Saskatoon, Phone: (306) 337-2837 Email: kelly.penz@usask.ca

Purpose and Procedure:

The purpose of this study is to explore the experiences of RNs who are exposed to distressing traumatic events while living and working in the same rural agricultural community, over time. The information may provide understanding of the type of traumatic events experienced and the impact of exposure to distressing traumatic events from the perspective of rural RNs. Findings may provide ideas that may be relevant to administrators and policy-makers, and influence decisions that support rural nursing practice.

If you agree to volunteer to participate in this study, I will make arrangements to meet face to face for our initial interview at a time and place that is most convenient for you. At our first visit, I will provide you with a short form to collect some background information about your work experience, age, numbers of years in practice, etc. and ask that you keep a brief daily journal of your thoughts and experiences for about 1 – 2 weeks. During our interview, I will ask specific questions about your distressing traumatic experiences in rural nursing practice. The length of time that we will talk is up to you, but it is expected to take an average of 30-60 minutes per interview session. If you agree, I will also ask to arrange a second interview by phone in case I have further questions or need to clarify previous points you have made. With your permission, I will digitally record both sessions so that our interactions can be transcribed as part of the research data and retain a photocopy of your daily journal entries.

Potential Benefits:

There are no direct benefits for any one participant in this study, however, the information collected is intended to influence the decisions of administrators and policy-makers, to promote the psychological health and safety of rural RNs and the quality of their personal and professional lives. It is also possible, that you may find the discussions therapeutic.

Potential Risks:

This study has no obvious risks associated with it, however it is possible that during our discussions, you may become fatigued and/or it may trigger a painful memory or emotional response from recall of past events. We can stop these interviews at any time, you do not have to answer any questions you do not want to, and you can withdraw from the study at any time. If anything arises in our discussion that is upsetting to you or triggers a response that concerns you, I can provide you with information for the Employee and Family Assistance Program (EFAP) and /or an appropriate health care professional.

Storage of Data:

After completion of this study, all audio-taped interviews and journal entries will be stored in a locked filing cabinet at the College of Nursing, University of Saskatchewan, for a minimum of 5-years. Only the research team will have access to the study information. If the researcher decides to discard the data after the five-year period, it will be destroyed beyond recovery.

Confidentiality:

There will be no identifying information on any of the data that you provide, written or recorded. The interviews and journals will be assigned a separate identification number in the data collection process. With your permission, the interviews will be recorded, then the tapes andyour written journal entries will be transcribed word-for-word into a written format or transcript. During the transcription of recorded conversations any reference to your name will be excluded. The recorded interviews and transcripts will only be available to the primary researcher Sharleen Jahner and the research supervisors Dr. Norma Stewart and Dr. Kelly Penz. In reporting the findings from this research, no names of participants will be used and general themes will be shared from groupings of study data. Your identity will also remain anonymous in any research presentations and/or publications that are created from the results of this study. If direct quotations are used in reporting the study results, they will be presented in such a way that no one can identify you. Signing of this form constitutes consent for your participation in the study. Your signed consent will be sealed and stored separately from the interview data. All information that you provide for this study will be kept completely confidential, unless intended for harm against yourself or others.

Right to Withdraw:

Your participation is voluntary, and you can answer only those questions that you are comfortable with. You are free to withdraw from the research project for any reason, at any time, without penalty of any sort simply by letting me know that you wish to discontinue. Your right to withdraw data from the study will apply until the data has been coded in the analysis phase. After this time your data may have influenced the theory development and it will not be possible to withdraw it. All of the information that you share will be held in strict confidence and discussed only with the research team.

Questions:

If you have any questions concerning the research project, please feel free to contact me at any point (Cell: 306-280-8800). This research project received ethical approved by the University of Saskatchewan Behavioural Research Ethics Board on (_____date here). Any questions regarding your rights as a participant may be addressed to that committee through the Ethics Office (306-966-2084).

Consent to Participate:

I have read and I understand the description provided above; I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I consent to participate in the study described above, understanding that I may withdraw this consent at any time. A copy of this consent form has been given to me for my records.

_____

(Name of Participant)

_____

(Date)

_____

(Signature of Participant)

_____

(Signature of Researcher)

Appendix F

Transcriptionist Confidentiality Agreement

Confidentiality Agreement

I, _____ transcriptionist, agree to maintain full confidentiality in regards to any and all audiotapes and documentations received from Sharleen Jahner related to his/her research study on the researcher study titled (name of research study). Furthermore, I agree:

1. To hold in strictest confidence the identification of any individual that may be inadvertently revealed during the transcription of audio-taped interviews, or in any associated documents.
2. To not make copies of any audiotapes or computerized titles of the transcribed interviews texts, unless specifically requested to do so by the researcher, Sharleen Jahner.
3. To store all study-related audiotapes and materials in a safe, secure location as long as they are in my possession.
4. To return all audiotapes and study-related materials to Sharleen Jahner in a complete and timely manner.
5. To delete all electronic files containing study-related documents from my computer hard drive and any back-up devices.

I am aware that I can be held responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audiotapes and/or files to which I will have access.

Transcriber's name (printed) _____

Transcriber's signature _____

Date _____

Appendix G

Demographic Form

Demographic Form

1) Date: _____

2) Community of employment: _____

3) Primary work setting: Hospital: _____
Other (please specify) _____

4) Proportion of time spent in primary position: Fulltime _____ Part-time _____

5) Do you work anywhere else: Yes _____No _____
Please specify _____

6) Live in the community of practice: Yes _____No _____Rural_____Other_____

7) Distance in km from nearest urban center: _____

8) Years worked in rural nursing practice: _____

9) Hours worked: Fulltime _____ Part time _____ (Average hours/week)

10) Educational Background (check all that apply):
Diploma in Nursing ___
Bachelor Degree in Nursing ___
Master's Degree in Nursing ___
Doctoral Degree in Nursing ___
Nurse Practitioner ___
Other Certification(s) _____

11) Year of Birth: _____

12) Gender: M ___ F ___

13) Ethnicity: _____

14) Marital Status: Single __ Married __ Common-Law __ Divorced __ Widowed __

For Researcher Use:
Code Number _____

Appendix H

Interview Guide

Interview Questions:

1. Why were you interested in this study?
2. When you think about all the experiences you have had in your practice, are there any traumatic or difficult events that come to mind that were particularly distressing to you? What happened? Who was involved?
3. How did you deal with the event at the time? Who helped during that time? What formal supports were in place?
4. Was anything else happening at the time that made it difficult to deal with the event or impact of the event? What was your main concern at the time?
5. Did any of those events affected you later, outside or away from of work? If so, in what way?
6. How do you feel the passage of time has impacted how you deal with a particular past event, or how another similar event would impact you today?
7. How would you deal with that situation if it happened now? Would you do anything differently? Have the formal supports changed?
8. Can you describe how distressing events and experiences have influenced your nursing care for others? If so, how?
9. Would you describe in your work setting as a hazard?
    a) Prompt: explain
10. Have you felt supported by your administration?
    a) If so, how?
    b) If not, how would you like to have it addressed?
11. Closing Questions:
    1. Do you have any questions you would like to ask me?
    2. Do you have anything you would like to add?

Appendix I

Revised Interview Guide

Revised Interview Questions:

I would like to ask you a few more questions about how you deal with exposure to distressing traumatic events. I've spoken to a number of nurses who've had similar experiences to yours and found a common pattern that they somehow manage to stay strong over time.

1. Can you tell me what do you draw strength from or how do you manage to remain strong to get though the traumatic events over time? How did you do that or what have you done specifically to remain strong?

2. Can you tell me what you have done specifically or drawn from to move forward or continue on to deal with them?

Potential clarification prompts depending on where the response takes me:

- How have you been able to do that?
- What do you mean by that?
- Can you be more specific?
- What steps did you go through?

Potential questions for those who may **not** feel they are staying strong:

1.So then, if you don't feel you are staying strong, what is it that prevents you or stands in the way?

2. What are the barriers to staying strong for you? What has held you back?

Appendix J

Reflective Journaling Activity

Reflective Journal

Guidelines:
A reflective journal will provide you with an opportunity to reflect on our discussion during the first interview, and document any thoughts and experiences that you feel are relevant. Your reflections will help me to develop a more in depth understanding of your experiences. There is no format or duration required for the journaling. You may document electronically or in written format.

Workplace Reflections:

1) What stands out most from your most recent exposure to a distressing incident or event in your workplace?

2) What stands out most from your historical exposure to distressing incidents and events in your workplace that you did not discuss during the interview process?

3) How did your peers support you during or following the distressing incident or event?

4) How did your leadership or organization support you during or following the distressing incident or event?

Please note that I am interested in your thoughts and experiences and not your grammar or spelling. I would like you to work on the journal between our two interview times. I encourage you to send your journal electronically, and if you choose to take written notes, please scan and send them electronically.

Appendix K

Letter of Permission

From: [redacted]
Sent: Tuesday, April 28, 2020 10:16 AM
To: Jahner, Sharleen <sharleen.jahner@usask.ca>
Cc: [redacted]
Subject: Online Journal of Rural Nursing and Health Care

Dear Sharleen

You have our permission to use your article in further publications such as your dissertation. You actually maintain the copyright to the article published in our journal since we are an open source journal. We normally ask that you credit the publication.

Article:to

Psychological impact of traumatic events in rural nursing practice: An Integrative review

being published May 2020 in the *Online Journal of Rural Nursing and Health Care*

If you have further questions do not hesistate to contact us.

Sincerely,

[redacted]

[redacted]

[redacted]

[redacted]

Editor In Chief *Online Journal of Rural Nursing and Health Care*

[redacted]

607.777.6805