AE520 Research Report

A new perspective on continuing mental health education: A case study on how reflective practice can improve resilience in paramedics.

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Abstract

As a stress resiliency strategy, the question the adult education literature raises is, can an individual learn how to prepare for critical stressors? The objective of this case-study is to identify if paramedics can self-initiate their own cognitive restructuring; to become critical thinkers to adapt to and accommodate new meanings derived from experiences into their belief structures. A transformational learning framework guides the analysis of how paramedics have constructed meanings from their experiences, seeking to understand the learning processes that led to growth versus distress. The data suggests that the reflexive ability learned through early-career, preceptor-guided experiences has a direct effect on continuing resilience. The participants use the learned reflective practice to systematically piece the puzzles of abnormal events together to accommodate new meanings derived from the experiences into their belief structures, becoming resilient and fostering a new norm as a result.

Introduction

The purpose of this study is to reveal a new perspective on continuing mental health education. Stressful events are inherent in the role of a paramedic with the potential to cause injury. I am interested in how the use of reflective practice to cognitively process critical stressors can improve resilience to occupational stress injury in paramedics, to facilitate growth where there is usually distress (Austin, Pathak, & Thompson, 2018). The study begins with definition of terms that may be unique to safety and health professionals. I provide the context for the study explaining the reasoning behind my perspectives and how this study differs from others. I reveal my positionality as an insider to the research, linking to my personal motivation to explore the issue of resiliency, and leading to the problem being researched, the purpose, the research questions, and limitations to the study. I explain my methodology and methods, address

the trustworthiness of the data and demonstrate how I ensured an ethical process was used to protect the participants while exploring sensitive issues. The presentation of data and findings is conducted in two sections. First, I report on a short self-study exploring my narrative using the same interview guide used with the participants, subsequently analysing the data and providing descriptions of the underlying meanings. In the second section, I reflect on the interviews with participants, situate the findings within the context of the case and scholarly literature, interpret their meanings, and answer the research questions. Insights are drawn to discuss the significance of the study and the findings are summarised in the concluding implications, and recommendations arising from the research are offered.

Definition of terms.

Burnout Syndrome: is a negative reaction to chronic occupational stress where conflict between values and professional roles exist, characterised by exhaustion, depersonalisation, and reduced personal accomplishment, which may have negative mental health consequences such as anxiety, depression and posttraumatic stress disorder (Arrogante & Aparicio-Zaldivar, 2017).

Compassion fatigue: is similar to burnout syndrome and is characterised by negative feelings about helping others and a lack of meaning in one's efforts (Pietrantoni & Prati, 2008).

Compassion satisfaction: is similar to posttraumatic growth and includes positive feelings and finding meaning resulting from critical stress (Pietrantoni & Prati, 2008).

Critical stress: is an accumulation of stress over time that had a significant impact on the individual. Critical stress can include stress caused by single or multiple critical incidents (Austin et al., 2018).

Critical incident: is a major crisis, event or turning point, that may or may not be dramatic, but will have had significant impact, either positive or negative, on the individual. (Hayes, 2018; Hughes, 2007; Austin et al., 2018; Pietrantoni & Prati, 2008).

Occupational stress injury (OSI): is a common term used to describe mental injury caused by a stressful event(s), or 'critical stress' resulting from one's occupation, that could lead to a diagnosable mental disease or disorder.

Posttraumatic growth (PTG): is a positive change in an individual as a result of traumatic experiences, including changes to how the person relates to others; new possibilities; personal strength; spiritual change; and new appreciation for life.

Posttraumatic Stress Disorder (PTSD): is a medical diagnosis used with persons who have experienced real or vicarious trauma and suffer a specific set of symptoms grouped into three categories; re-experiencing, avoidance, and arousal (startle), for specified periods of time (Streb, Haller, & Michael, 2014).

Context for the study.

There exists abundant research on the detrimental effects of critical incidents impacting Emergency Medical Service (EMS) professionals. This research suggests a high incidence of occupational stress injury (Austin et al., 2018; Pietrantoni & Prati, 2008) with 14.6% of paramedics suffering Posttraumatic Stress Disorder (PTSD) (Streb et al., 2014). PTSD research historically tended to focus on negative effects resulting from trauma rather than the potential for positive effects (Tedeschi & Calhoun, 1996). Roepke (2014) tells us the last 20 years has seen an increase in researching the effectiveness of interventions that may promote posttraumatic growth (PTG), although Roepke focuses on interventions after experiencing incidental traumatic experiences and not as a resilience strategy. The grey literature, fueled by media discourse,

focuses on PTSD suggesting paramedic PTSD rates upwards of 25% (Public Services Health and Safety Association, 2018; Tema Conter Memorial Trust, 2016) thus bringing critical incidents into the public eye. A closer examination of the grey literature reveals that the data was gathered through paramedic self-declared PTSD symptomology which potentially could have included burnout syndrome due to similar causes and symptomology. Approximately 25-80% of other critical health care providers such as nurses and doctors experience burnout syndrome with varying levels of severity, which can possibly affect the care provider's mental wellness, potentially leading to PTSD (Arrogante & Aparicio-Zaldivar, 2017). Regardless of the statistics presented, it is clear that there are a substantial number of paramedics who struggle with occupational stress, but there are many more who do not, and who may even experience growth as a result. This raises the question, what are the paramedics who do not struggle doing differently?

This study adds to research about the effects of critical incidents paramedics experience and the mitigation of the potential onset of PTSD in two ways. Much research has focussed on paramedics who have experienced occupational stress injury. This study looks at paramedics who self-identify growth from their paramedic experiences. Predominant research also views resilience as a bounce-back coping strategy from critical incidents. This study differs as its focus is on resilience as a resistance factor to day-to-day critical stress that could lead to burnout syndrome, or in extreme cases, PTSD. Critical incidents are considered high risk to the paramedic's mental health but have a lower probability of occurring. Critical stress, like critical incidents, also carries a high mental health risk (Hayes, 2018; Pietrantoni & Prati, 2008), but has a higher probability of occurring due to its ongoing and repetitive nature. There are recent studies on self-care approaches as a resilience strategy (see Bettney, 2017; Mills, Wand, & Fraser,

2018), and improving EMS culture and enhancing resilience as an adaptive and recovery strategy (see Pietrantoni & Prati, 2008; Streb et al., 2014), but there are very few that focus on teaching resilience (Austin et al., 2018; Clompus & Albarran, 2015). Until recently, there were no studies that focus on building resilience as a resistance strategy; a strategy used in preparation for adversity from a preventative and proactive point of view (see Carter, Boden, & Peno, 2019), and none who used the lens of adult education. This lens focuses on identifying learning how to cognitively process critical stressors to minimize stress reactions, while predominant themes in previous research focused on managing, and coping with, the effects of the critical stressors.

Positionality of the researcher.

In addition to many years as a practicing primary care paramedic, my recent employment history includes roles such as Paramedic Instructor, Paramedic Field Superintendent, Paramedic Commander of Training, and Paramedic Deputy Chief. I have over 30 years of experience in the field of paramedicine and related industries, and have personally overcome the effects of occupational stress injury. Throughout my career, I have had the privilege of designing and facilitating courses for paramedics and paramedic students on Emergency Medical Services (EMS) stress, occupational stress injury, and resilience strategies; and led in the design of a paramedic service's PTSD prevention plan, stimulating my interest in investigating the topic further. Through a long paramedic career, I have learned through experience how to turn rumination into reflection, aiding in navigating my own daily critical stressors. This reflection affected my identity, changing my beliefs and behaviours, and changed the lens through which I view the world. This positionality categorises me as an insider of the paramedic community. As an insider, it is impossible to remain neutral, and the potential to introduce bias needs to be acknowledged (Dwyer & Buckle, 2009). My personal story is part of the conversations and

resulting data, not only to provide a continual awareness of my biases, but also as a comparison to the data from others; and is made explicit in the form of a self-study section of this report. My experiences drove the design of the study; the research problem, purpose, and questions. I reflected, I learned, and I grew thus stimulating my interest in identifying if the experiences of others are different or the same as mine, building the foundation of my research.

Research Problem

As a stress resiliency strategy, the question the literature raises is whether or not an individual can learn how to prepare for potential critical stressors they may experience. The literature suggests that it is the influence or the lens of the individual's beliefs that create the reality they respond to. Facilitating or guiding an individual to become a self-directed critically reflective learner; to become more open to transformational learning where lenses or perspectives can change, may serve as a self-directed resilience strategy.

Research purpose.

The purpose of this study is to examine the use of critical reflection and the possibility it improves resilience to occupational stress injury in paramedics. The objective of this study is to identify if and/or how paramedics can become transformational learners, self-initiating their own cognitive restructuring, seeking out opportunities to change, and adapting to accommodate new meanings derived from experiences into their belief structures.

Research question.

The central question is; How do paramedics process their day-to-day critical stressors and develop resiliency to occupational stress injury? What role does a reflective practice play in becoming resilient?

My sub questions are:

- What resiliency strategies do paramedics use following the critical stressors they experience?
- Do they learn or change as a result?
- What changes took place as a result?
- What events, actions, people, or supports helped them change?
- How might reflective practice be used to foster transformational learning as a resilience strategy?

Delimitations and limitations.

The origin of the study began with the idea: can we teach paramedics how to be self-directed transformational learners as a resiliency strategy? In addition to my self-study, there were six participants who took part in individual semi-structured interviews and two focus groups, thus providing a copious amount of data. The data identified many factors that could affect the findings such as critical stressors external to the paramedic profession, mental illness unrelated to occupational stress injury and PTSD that could be triggered by critical stressors, and age and prior life experience, that require further exploration but were excluded due to the scope and time involved. Although the type of qualitative research used prevents generalization, the thick descriptions generate valuable knowledge that may be applicable to paramedics and other similar professions that experience regular day-to-day critical stressors as part of their professional role. As the research focus is on resilience to regular day-to-day critical stressors, findings may not apply to smaller rural paramedic services, or other volunteer emergency services, where critical stressors are rare critical incidents as those incidents are not regular occurrences and may have a higher impact on the individual.

Methodology

The most common type of qualitative research is interpretive research, which is based on the assumption individuals develop subjective meanings of their personal experiences, constructing their own realities (Merriam & Bierema, 2014). The goal of this study is to see if paramedics use reflective practice to learn in order to navigate the daily, potentially traumatic, experiences they are presented with; to understand how the use of reflective practice can improve resilience to occupational stress injury in paramedics; and subsequently, discover what strategies can be used by others to do the same. The underlying constructivist philosophical approach guides this case study methodology to understand how paramedics make sense of their experiences; how they interpret their day-to-day stressors, apply meaning to those experiences, and construct their realities (Merriam & Tisdell, 2016). literally

According to Merriam and Tisdell (2016), a case study is an inquiry investigating a phenomenon within a bounded system. The phenomenon being studied is reflective practice as a strategy for resilience to critical stressors in the bounded system of paramedic practice. Often, case studies will be intrinsic, where one seeks understanding of an individual case for its own merit. An instrumental case study methodology looks into the wider issues affecting the bounded system (Carolan, Forbat, & Smith, 2016). In this case study, the issue is not a specific scenario, but day-to-day occurrences that all paramedics experience and building resilience to these stressors is an issue that goes beyond the individual and specific critical incidents. To contextualize the study, the experiences in question come directly from paramedic practice and had a significant impact on the individual. It is through the analysis of each paramedics' narrative that the meanings of experiences are revealed to better understand the meanings attributed to them (Merriam & Tisdell, 2016), thus understanding the wider issue of how some

paramedics cognitively process their critical stressors. The phenomenon being studied is within real-life context and the boundaries between the phenomenon and context are not clear. Variables such as general life experience that may have contributed to the development of resiliency and the potential for external stressors (those arising from experiences outside of the boundary of the profession), cannot be totally separated from the context (Yin, 2014). However, the 'what' being studied is not the meaning of phenomenon itself (Van Manen, 2014) but how people in a specific group create or revise their meanings as a result of the multiple events or phenomenon they experience, the most defining characteristic of case study research (Merriam & Tisdell, 2016), accommodating a 'relativist perspective' where there is a possibility of multiple observer-dependent meanings (Yin, 2014).

Methods.

In this study, three approaches to data collection are used: a self-study, individual semi-structured interviews, and a semi-structured focus group where only those who participated in the individual interviews were invited to participate. The retrospective investigation into each paramedic's experiences align with a constructivist approach (Carolan, Forbat, & Smith, 2016), identifying the meaning paramedics ascribed to their day-to-day experiences, something that cannot be observed (Patton, 1990; Merriam & Tisdell, 2016), revealing what resilience strategies worked for themselves and what could work for others.

Self-study. The concept of this study was born through my career as a paramedic and resulting self-reflection on my own experiences. These same experiences can also be a powerful story that through systemic inquiry can reveal valuable insights into the phenomenon (Hamilton, Smith & Worthington, 2009). I was interviewed by a third party using the same interview guide used with the study participants (Appendix A) to assist me in writing my story and help me

understand my own meaning construction (McAllister, Whitefield, Hill, Thomas, & Fitzgerald, 2006). Through self-study, I used critical reflection on my experiences to understand my thought processes through alternative lenses (Ham & Kane, 2007). As case study research is typified by studying multiple perspectives of the phenomenon (Carolan, Forbat, & Smith, 2016), my story adds a valuable perspective to the data gathered from the study's participants.

Interviews. The primary data collection method is individual face-to-face interviews. Interviewing is a conversation with purpose for the interviewees can share their perspective. I interviewed six participants using an interview guide to provide multiple perspectives of the case under study. The interview guide can be found in Appendix A. The guide is designed with open questions, which allowed for conversation to occur and information was freely given while providing flexibility to explore new concepts (Patton, 1990; Merriam & Tisdell, 2016). As knowledge is constructed through critical reflection on experience, the interview guide encouraged myself and paramedics to reflect on experiences that may have challenged beliefs and the subsequent thought processes, focusing on those that may have led to positive growth, where I could further explore my own questions and those of others (LaBoskey, 2007). The interviews did not focus on the events themselves but focussed on coping strategies that fostered learning and positive growth, probing to understand what helped and what may have hindered the process of growth, and what actions were used to solve problems.

Focus group. The focus group data collection method is an informal discussion with specific participants about the topic being researched, led by a moderator or the researcher themselves. They are useful because they allow participants to share common experiences, generating meaningful dialogue in naturally occurring conversations (Morgan, 1997; Wilkinson, 1998). The focus groups allowed for interaction between the participants as well as the

researcher to further discover the meanings created by participants (Wilkinson, 1998). Due to the nature of paramedic work, it proved difficult to bring all six participating paramedics together in a single focus group. Two focus groups occurred, the first with three participants, the second with two participants. The last participant was unable to attend either group due to other commitments. As a researcher and participant, I was the facilitator and a co-learner, facilitating the discussions and participating in the co-creation of new meanings (Cranton, 2016; Merriam & Bierema, 2014). The focus groups enabled me to validate emerging understanding, to better understand how changes in perspectives and beliefs may have resulted in personal growth for myself and others, how the changes came to be, and together, identify how others can learn to do the same. The focus group guide (Appendix B) outlines topics discussed in open conversations that generated broad discussion and interaction allowing discovery of insights I may not have thought about (Morgan, 1997). The general questions of what resilience strategies worked and what might help others, drove the conversations while allowing the flexibility to clarify and summarize information as well as to explore unanticipated responses through asking further clarifying questions (Merriam & Tisdell, 2016).

Data analysis. Thematic analysis of the data was ongoing, occurring as soon as possible after transcription and respondent validation. A selective reading approach was used in the initial stages. A selective reading approach is a type of concept or content analysis, where the researcher looks for the reoccurrence of specific preselected themes to seek answers to research questions. A secondary ethnographic approach was also used to allow themes to emerge through constant comparison between the narratives (Van Manen, 2014). The process of analysis was inductive and comparative, to understand the experiences of the paramedics and provide a structured but rich description (Merriam & Tisdell, 2016).

The first step of analysis was category aggregation, where all of the data from the multiple interviews were compiled into a case record and sorted topically (Carolan et al., 2016; Merriam & Tisdell, 2016). The aggregation was followed by the selective reading approach, matching the topics of the participant responses to the research questions, coding according to similar attributes in an effort to develop key concepts, and subsequently coding into themes and sub-themes (Litchman, 2012). Upon reviewing the emerging themes, I identified concepts that needed further clarification from the participants. The focus group guide initially called for identifying specific resilience strategies paramedics used in their day-to-day work. The emerging data from the individual interviews indicated that all participants were already using common strategies. As the semi-structured interviews and focus groups allow for flexibility to explore new concepts (Patton, 1990; Merriam & Tisdell, 2016), the focus group guide was revised slightly to foster reflection on the emerging themes rather than seeking themes as initially planned and the emerging themes were introduced to the focus groups for dialogue. This new data was added to the previously aggregated data where some easily fit into the existing categories and others were placed in new categories. Rereading the data using an ethnographic approach revealed other unexpected themes and sub-themes that added new dimensions to the categories.

The next step of data analysis was the identification of patterns, where the categorized data was compared to reveal meaning and produce interpretation (Carolan et al., 2016; Merriam & Tisdell, 2016). Following Lichtman's (2012) six steps of data analysis, this step included revisiting the categories, possibly combining categories and subcategories when needed, or even excluding less important categories, then revisiting the categories again to remove any remaining redundancies and to identify critical elements. Through this distilling process, I was able to

identify four key concepts, each with several subcategories as according to Lichtman, it is better to have few well developed concepts than many loosely framed ideas. The last step in the analysis was to take the key concepts and make connections that are meaningful through description, analysis, and interpretation. Different data sets were analysed and compared, as well as related to the literature. The findings section explores the final key concepts, describes and analyses what the participants said, and offers to the readers possible meanings (Glesne, 2006).

Trustworthiness.

My personal story is part of the data not only to reveal my positionality, but also as a self-study, being subject to analysis thus providing a continual awareness of my biases for myself and others, and a mechanism to assist in triangulating the data (Glesne, 2006; Merriam & Tisdell, 2016). To augment trustworthiness, transcripts of interviews and of the focus groups were provided to participants for respondent validation (Merriam & Tisdell, 2016); and emerging themes were brought to the focus groups for more in-depth dialogue. The final two methods that promote credibility were keeping a detailed audit trail of methods and procedures throughout the study, and providing rich, thick descriptions to contextualize the study so that readers can assess whether the findings can be transferred (Merriam & Tisdell, 2016).

Ethics.

Basic ethics principles include: informed consent; do no harm; confidentiality and anonymity; and the right of participants to withdraw at any time. To obtain informed consent, all participants received an Invitation to Participate which included information about the study and a consent form. To ensure no harm was caused to the participants, the study did not ask the participants to revisit their past traumas, only the processes they employed in response to the critical stressors they experience on a day-to-day basis. To assist in mitigating any potential for

posttraumatic injury, packages were provided to all participants that included a stress-related mental health fact sheet published by the Mental Health Commission of Canada (Appendix C), and information on free counselling agencies, hotlines, and websites. To ensure confidentiality, pseudonyms were used. All material was digitally stored in password protected devices. Audio recordings were destroyed once transcribed and transcripts were reviewed and validated by participants, allowing for corrections or removal of sensitive material. All hard-copy documents are kept under lock and key. Given the nature of a focus group, anonymity is not possible. Each participant was asked to keep the discussions confidential. The study received approval from the St. Francis Xavier University's Research Ethics Board March 6, 2019 (Appendix D).

Presentation and Discussion of Data and Findings

Introduction

"Tell me who you are and why you became a paramedic." This was the first interview question posed to all participants of the study. What surprised me the most was five out of six participants answered indicating the same thing. They became paramedics through happenstance. In this section I introduce the participants and the circumstances of how they came to be paramedics. All names used in this report are pseudonyms to protect privacy of participants.

Katherine: has been a paramedic for approximately eleven years. She was part way through an unrelated university degree when she *"*jumped to paramedicine" and when asked why, she had, "no idea" and "Because I spoke with Terry [a study participant], and he convinced me to. Honestly. Because I didn't want to work in an office job and I wanted to do something different every day, and I wanted the independence of this job gives me, and the pay is great".

Terry: has been a paramedic for approximately 15 years and was the only participant who knew early on that he wanted to be a paramedic and worked towards that goal through high school and college.

Johnathan: entered the career approximately 30 years ago. He was working in an unrelated industry and taking some undergraduate courses prior to paramedic school. His reply was *"*I think, to be honest, it was because it was a one-year program at the time and I figured it was going to be a stepping stone to something else."

Julie: has been a paramedic for approximately 25 years and was in retail management before switching careers. She said "Kind of by accident. I was in a Northern remote community, they offered a free EFR [Emergency First Responder] course and they were looking for volunteers, so I went."

Lorna: was an adventurer, volunteering globally in her late teens into her early twenties, helping people. She has been a paramedic for approximately 12 years and describes the beginning of her journey. "It was a coin toss. It was between police and EMS [Emergency Medical Services] and I was sitting in a group of friends. And half of them can see me being a medic, and half of them can see me being a police officer. So, as I was writing my application for college, we did a coin toss."

Robert: has been a paramedic for just over 30 years. He knew he wanted to be in the medical field and was studying to be a nurse before he changed careers. He explained:

> It's by accident. It's just by circumstance really. After I graduated grade 13, I really didn't know what I wanted to do, so I ended up applying to different programs at the college level and ended up going into nursing. After about two years of that, I kind of lost interest, but I had also met some flight paramedics

> at the time. That kind of piqued my interest because I've never even thought about EMS and I said ‘hey, that's what I want to do, because it seems to be exciting.

The surprise was that I had always thought that my personal experience of falling into the career was unique. This belief was reinforced by encountering and mentoring many paramedics over the years who chose paramedicine as a career. I was failing miserably in mechanical engineering technology and just like Robert, the one-year college program was appealing to me, and the job seemed interesting. I applied for the program not knowing what I was getting into. There was not a general or public awareness of the potential negative effects arising from the occupation until recently. We now know that 14-25% of paramedics experience Posttraumatic Stress Disorder (PTSD) presumably as a result of their paramedic career experiences (see Public Services Health and Safety Association, 2018; Streb et al., 2014; Tema Conter Memorial Trust, 2016), and 25-80% of all healthcare providers experience burnout syndrome with varying levels of severity, that can potentially lead to PTSD (Arrogante & Aparicio-Zaldivar, 2017). Although many would believe that the story of resilience to critical stressors begins concurrently with the start of the paramedic career, whether it is a chosen career or a career that one fell in to, the foundation of those stories begins much earlier. I will explore the stories of the participants, to identify if and how reflective practice was used to learn how to be resilient, to assess if this learning was transformative, beginning with my own story.

Self-Study

Disorienting dilemma.

My paramedic experiences may have stimulated my interest in resiliency and drove the design of this study; but my earlier life experiences, or more specifically the lack of life

experience, is where my resiliency story begins. We learn from our experiences. They can be both a stimulus and a resource for learning, building a foundation for future learning (Merriam & Bierema, 2014). I was raised by European immigrants who arrived in Canada after World War Two, my father as an 18-year-old, and my mother as a child with her family. The environment was middle class, very conservative, with the expectation that I and my siblings go to school, get a good job, get married and raise a family. Although I can recall many positive experiences, I did not have any adverse experiences, ones that would cause stress for myself, at least none that were not caused by my own naivety, social awkwardness, rebellion, or just plain poor choices. Becoming a paramedic at a time when we were called ambulance attendants was simultaneously the best and the worst thing that could have happened to me.

I excelled academically in the ambulance and emergency care program but suffered in silence from the anxiety of being presented with life and death experiences and the responsibility of managing those situations for others. At this time in my life, I had only known one person who died from a tragic accident and had only ever attended one funeral, my grandmother's. I soldiered on as I needed to graduate, get a job, get married, and have children. I believed this was what it meant to become a responsible adult and was now in a one-year crash course to get there. What was formerly recreational activities quickly became negative coping strategies, although unrecognized at the time. I was smart. I performed the required skills well. I assimilated new tasks and procedures quickly, but the life and death experiences I was presented with became critical stressors. I was consistently exposed to 'disorienting dilemmas', experiences that didn't match my perception of reality (Mezirow, 2012). They were not cognitively processed, and the management of the experiences was nonexistent. As my career progressed, stress became a topic for discussion in the paramedic industry where previously it was never discussed. I was never

told or felt the need to ‘suck it up’, but I was challenged with ‘if you can’t handle the heat, get out of the fire’. Training on stress reaction recognition and coping strategies eventually became the norm and still exists today in programs such as the popular Return to Mental Readiness (R2MR) program (Mental Health Commission of Canada, 2016). But I was never taught how to process the stressors. This is something that I learned through experience.

Learning to reflect.

I can break down my paramedic career into four phases and identify the learning that came from each of the phases. The most prominent learning was a result of the experiences that occurred in the first phase, the initial training and the first nine years of practice. The exposure to poor living conditions of many in society, severe mental illnesses, assaults and domestic violence, severe traumatic accidents, death and survivors, those left behind, were all new experiences. I was not aware that life was like this. I was naïve and socially awkward and therefore experienced much anxiety and distress. I assumed this emotional and mental state was normal, put on a brave face, and employed negative coping strategies. I was physically ill before each shift but used self-talk, a mantra: ‘every emergency call, regardless of the nature, you follow the A, B, C’s of patient care to overcome the anxiety’. I learned how to control my anxiety to an extent. I also learned through experience how to manage an emergency scene and the people involved. But I would ruminate on events afterwards. They would repeat themselves in my dreams, and much of my negative coping was to blur the memories. There were external relationship stressors that compounded the issues in a synergistic way, but through reflection, I can now see how each stressor affected me, and what I learned from each.

As the paramedic career evolved, new skills and responsibilities were added as did expectations for documentation of care. This was an era where the job began changing from

ambulance attendant to paramedic; from technician to clinician. There was increased team work and learning versus the defined roles of driver and attendant. This added two important aspects to the role of a paramedic that contributed directly to improve my cognitive processing of critical stressors. First, the higher criteria for documentation required a more systematic accounting of events and the care provided. Merriam and Bierema (2014) suggest new meanings of experience are made through systematic reflection. While discussing how I handled high acuity calls in the study interview, I said: “I'll cognitively think about things and try to logically think it through. It's hard to explain but it just seems through that process, those memories and thoughts just kind of fade away.” Although I may not have realised at the time, the systematic recalling and documenting was a way to analyse the events; to put the events into perspective. This is where rumination was changed to reflection, to realise that the cause of the events I was experiencing were outside of my control and would have happened regardless of the part I played in the aftermath, and I provided the best care possible. Whether or not the outcome was positive or negative, I did my best according to the situation as presented. The cause, and often the final outcome, were out of my hands. I identified my assumptions of why the events happen, compared them to what I believe should have happened, and integrated the modified assumptions into my reality (Brookfield, 1987; Merriam & Bierema, 2014). Secondly, since paramedics learn and work as a team, documentation is to be completed together thus requiring dialogue. The combination of systematic documentation and associated dialogue with my paramedic partner, the type of dialogue where not only events are analysed but peer support can also occur to balance negative emotions, created an environment where critical reflection occurred, and new meanings applied to the experiences.

Transformation.

Brookfield (2012) tells us that learning includes experience and action that lead to change. My experiences and subsequent reflections changed me. I learned and transformed. The critical reflection on the experiences was key in fostering my transformational learning (Merriam & Bierema, 2014; Mezirow, 2012), changing how I saw the world (Cranton, 2016). My frame of reference, when it came to the critical stressors I was experiencing was 'problematic' (Mezirow, 2012), and through the critical reflection, I identified new frames that were more justified. When asked to talk about my day-to-day stressful experiences, I said:

> The day-to-day stressful experiences, they became the norm. . . . What I see, or what you would see as a bad call, to me it's just the normal things that I deal with day-to-day, that's part of my job. I have a duty to respond to do my best and help people, but the way I view it is, it's not me. I do not own it. I do not own what's happening to them, so, although it's sad, it'll cause emotions, and it might cause me some anxiety when I'm trying to ensure my competence in dealing with it, it's not something that's happening to me, so then it doesn't stress me out.

I had a new norm for reconciling my new experiences into my reality. Bad things happen to good and bad people, there is no discrimination. Death is just the end of life. I may be hardened, but not uncompassionate. I do not cry for those who died, but I cry for those who are left behind. I never used to cry while watching movies, I now feel for the characters:

> It's given me a new, [pause] a new, or maybe different appreciation of life. Something that's not so self-centered but more of a belief or faith. A faith that

> came out of it, that was a big part of the growth, that there's more to life than just, [pause] just me.

Through critical reflection, my habits of mind changed, not only changing how I view my experiences and process critical stressors (Brookfield, 2012; Cranton, 2016), but also how I feel, and how I see and interact with the world; how I know, thus affecting my identity (Charaniya, 2012; Illeris, 2013). Earlier I said I was challenged with, 'if I can't handle the heat, get out of the fire!'. I was hardened by the fire of critical stressors. Through critical reflection on the day-to-day critical stressors, my ideology and personal identity were transformed. A long and painful experience, but required to truly transform (Brookfield, 2012; Illeris, 2013) as the alternative to transformation is a continual struggle with the ongoing stressors that can have potentially detrimental effects.

The Participants' Experiences

Introduction.

My narrative reveals how I used reflective practice to learn how to be resilient to critical stressors. Each participating paramedic had the opportunity to discuss their personal narrative, and how their stories changed as a result of their experiences. The following sections reveal parts of their journeys, comparing and contrasting participants' thoughts and reflections, the resulting changes and barriers they encountered, and what helped them through the process.

Evidence of reflection.

Critical reflection is cognitively demanding. It challenges an individual's core beliefs and assumptions and has the potential for emotional upheaval (Brookfield, 1987; Cranton, 2016; Hollins et al., 2014; Mezirow, 2012; Pretorius & Ford, 2016; Taylor & Cranton, 2013). Similar to my experience, the common thread between the participants is that paramedicine introduced

them to a world they did not know existed, regardless of the life experiences and belief structures previously held by the participants:

> The job has opened my eyes. I was very naïve growing up. I was raised in a house with Mom and Dad and a white picket fence and a dog and I didn't realize the way people lived in this country until I started work. I didn't realize the living conditions and the way people treated each other until I started this job. (Katherine)

For Katherine, a theme identified in her responses was an internal conflict between her 'normal' she experienced in her upbringing, and her perception of other social classes of people due to the poverty and violence that she saw in her new paramedic-career experiences, resulting in a need to critically reflect to better understand the conflict. Robert also had a 'white picket fence' upbringing but the events that caused him to critically reflect was the violence and self-harm he witnessed:

> You can never be fully prepared to see the things you see. You see a lot of stuff. I had a fairly good upbringing. I could not understand why [people harm themselves]. It took me awhile. It comes with experience and seeing the calls and listening to other people talk.

Johnathan came to the paramedic career a little later in life than Katherine and Robert. Johnathan was more aware of different social classes in society and did not experience the same impact as Katherine and Robert, but the exposure to the helplessness of those who are more disadvantaged caused him to critically reflect:

> I am more aware of the plight of others and so I definitely have learned at work because you wouldn't see it anywhere else . . . you are exposed to those things

> and you have to react to that exposure. To me, it's just made me more aware, and you know maybe more, not necessarily an advocate but, it's shaped the way I think.

All people have a set of core beliefs. We have ideas that are taken for granted. They are underlying assumptions of ideas, perceptions, or meanings we have built throughout our lives. For a paramedic who sees life and death unfold daily, especially for those like me, Katherine, Johnathan, and Robert, to whom such experiences do not match their core beliefs, this causes a 'disorienting dilemma' (Mezirow, 2012). The disorienting dilemma is perplexing and if nothing is done to cognitively address the differences between the new reality being presented and the realities we have built for ourselves, the result can be distress; yet to do something, i.e. critically reflect, there is potential for emotional upheaval. At the same time, how we deal with the disorienting dilemmas and reflect on what we do, or are expected to do, as a paramedic, opportunities for transformation may be presented along with opportunities to build resilience (Tisdell, 2019). Through this conundrum, the participants all indicated they cognitively processed their experiences in some manner. Some used stress management and coping strategies that aided in this process such as lifestyle, and mindfulness and meditation, but most described the type of dialogue that fosters critical reflection.

Lifestyle. Robert describes his lifestyle and how that aids his ability to cope:

> I have a happy marriage. I am an active person. I am not a religious person, but I am a spiritual person. I have a good life outside of work. I think a lot of people… do not come to work in the right frame of mind. If you come to work in a good frame of mind, I think it helps in dealing and coping with stressful situations . . . I eat well . . . I get a good night's sleep. That is important.

Mindfulness. Julie describes the use of positive self-talk "catching when that self-talk is negative," in addition to exercise, self-care, and creativity. "I find that I am able to care for others better when I have cared for myself. The exercise, nutrition, and creative processes were a huge part of… resiliency." Julie also found that when having difficulty sleeping and ruminating on negative events, she would "change the subject matter," use mindfulness and meditate on positive things.

Dialogue. Lorna and Terry quite often work together as partners and 'chat' about their calls. Lorna describes "a very open relationship" where they can talk about things that bother them. Terry describes how they chat:

> I think that is why I have a partner too . . . you bounce things around, and open communication with your partner and talk it over afterwards. I always do that. Even if it is a brief, 'that was crazy call, I have never done that before'. 'I did one before'. 'Cool'. It was kind of a quick little debrief, and then you carry on with what you do.

Lorna further explains the chat: "Sometimes just reflecting on what happened. Sometimes just listening… [and] reflect on the moment and understand why." It is clear dialogue has a role in processing the experiences. A common element amongst the participants is their dialogue with peers and with those they have developed close relationships. Katherine, like Lorna, describes dialogue with peers as an important part of her practice:

> 100% there is dialogue with other peers. After any call that bothers me in the slightest, I talked about it with my partner, or my best friend is a paramedic, I will call her up. I talk about a lot of calls with my co-worker, and with my best friend who understands it, who understands the world I work in. I think if it

> was not for that dialogue, I would probably be a lot more messed up then I am now. (Katherine)

Charaniya (2012) explains that we create our realities. Our personal narratives and knowledge are socially and collaboratively constructed through dialogue. Dialogue can prompt critical reflection. Dialogue fostered by an event is where assumptions can be articulated, perspectives tested against those of others, and modified accordingly (Brookfield, 1987; Brookfield, 2012; Cranton, 2016). The events the paramedics describe cause distress and create dilemmas, sometimes focusing inward attention, but requiring outward action to process the event and revise or create new meanings (Ward, Boden, & Castleberry, 2019). The participating paramedics experience dilemmas throughout their work and engaged in the type of dialogue where meanings can be ascribed to the events they were experiencing:

> Talking helps because it gets it from inside your head. It gets it from inside to the outside and it somehow loses its power when you speak it out loud. If you are harboring any untruths, when you say something out loud and it is not true, it seems ridiculous, but inside, in your head, when you are trying to process things, sometimes it just stays stuck. (Julie)

Julie's 'outward action' was to externalize her thoughts, to say them out loud to a person through dialogue to make sense internally though hearing her own words. Robert suggests that dialogue can aid in his processing and meaning making. "You get to hear stories from other paramedics, or maybe other fields, what people are dealing with . . . and you grow with those conversations." But Robert explains that dialogue and stories are only part of the process, that continued experience also plays a significant role:

> I could not understand what an 11-year-old, how bad his life could be, that he would want to commit suicide. I just could not wrap my head around that. That is what traumatized me mostly. It is over the years that I have come to realize, based on more calls and seen more trauma, that you know what? Some kids at 11 have shitty lives.

The stories paramedics tell, or the situations of patients a paramedic may witness, at least in part, can also foster critical reflection. Johnathan explains, "you cannot help but reflect on the things that you see. They may not cause me stress, but they certainly cause me thought." Lorna expands on this topic and suggests it is a way to understand why things happen, an important emerging concept:

> I reflect on their story and just see why things happened. . . . I am often trying to think what leads these people to do or to make the decisions they are making . . . to try and make sense of those calls as to why they are happening, why they made that choice. Just trying to make sense of everything actually helps me at the end of the day.

Reflecting on stories and understanding why contributes directly to the type of systematic reflection suggested by Merriam and Bierema (2014) that can facilitate the ability to make new meanings of experience and foster the capacity for transformational learning. Julie describes the process of making sense and understanding why as a puzzle that needs to be solved. "I need to put all the pieces of the puzzle together at the end of it." Katherine systemises the process to aid understanding: "I feel like putting it on your ACR [Ambulance Call Report] allows you to put things in chronological order… [a way] of getting all the facts to be part of that whole understanding thing." Solving a puzzle using a systematic approach builds a narrative that

can be critically reflected on to process the experience and create meaning. Through critical reflection on our experiences, where we analyse our assumptions and compare them with the perspectives of others, we can recreate our realities to match our new experiences. The participating paramedic's told stories of numerous events that challenged their understanding of the world. These experiences created puzzles they, and I, needed to understand to reconcile them with how we previously saw the world. The narratives we articulate and the stories we tell, help us piece together the puzzles assisting with making sense of the experiences. We learn from the experiences. Some participants use a systematic approach. Some use experience and logical thinking. Some encounter barriers.

Personal connection as a barrier to critical reflection.

The meanings we have applied to our personal past experiences serve as our unique lens through which we view the world. We use multiple perspectives to make sense of an experience influenced by our perceptions and actions (Cranton, 2016; Kreber, 2012; Merriam & Bierema, 2014; Mezirow, 2012; Taylor & Cranton, 2013). When encountering critical incidents, and viewing them through our personal lenses, connections are sometimes made to our personal lives that can change the focus of our lenses. The participants called these connections 'triggers'. Specific triggers changed and evolved for each participant resulting from their life experience, where meanings were applied to, or learned from, past experiences. Most were related to family:

> Now as a mom, paediatric calls I hate, I never enjoyed them, but I hate when paediatric calls now [pause] to see a woman drunk pregnant behind-the-wheel, killed me. To see women who had, or I will not even call them women-teenage girls, who have had two or three kids and do not have custody of any of them, that was hard for me. (Katherine)

The disadvantaged social classes, and how Katherine perceives their lives to be, has exacerbated Katherine's internal conflict between what she previously believed how life should be, and the life choices of others, as a result of her experiences of becoming a mother and the personal connections made between the two. Katherine's compassion for the children makes it hard for her, where in other participants, it is anger that is elicited:

> I have children. I think dealing with paediatric calls usually heightens the emotional response. Not so easy to damper down the emotions on calls like that. It makes me angry. I have to process that anger before I can go further with it. I always have to reflect on that. Where is the anger coming from and is it in check to the situation? (Julie)

Julie has an awareness of the emotions resulting from her triggers allowing her to not only critically reflect on her experiences, but to also critically reflect on what is making her angry, in addition to what the meanings she ascribes to her experiences and the connections to her life and family. Lorna describes trigger calls that are more difficult to process, and uses her understanding and personal connections as a tool to provide better care:

> The calls that affect me are the ones that are close to me like peads [paediatric] calls. I have kids. Mental health calls, especially the young kids. Or even just adults going through mental health. I have suffered mental health. I have had to get counseling, not for work-related issues, but I can relate to them and I can understand what is going on with them. . . . Overdose has become a very big stressor for me because it is everywhere. The overdose calls that I have done have been late teens or in their twenties. So I think as my kids are getting older . . . I am relating to those calls that way, because I have kids at home.

Having personal reactions to calls involving children is not restricted to those who became a mother. Terry developed a connection to calls involving children when he became a father. “I find now [that] I have a family, some calls [are] more relatable so if it is a call involving a child that is the same age as my child, you automatically think . . . what if that was my kid?” We develop strong bonds to family, parenthood, and children. We develop an ideology of how life should be and when we experience calls that have a personal connection to the events (Merriam & Bierma, 2016), such connections can block the ability to critically reflect. Although the personal connection and resulting bias can be strong, they can be transformed to new ways of knowing by encouraging critical reflection (Coady, 2013; Fazio-Griffith & Ballard, 2016; Heddy, Sinatra, Seli, Taasoobshirazi, & Mukhopadhyay, 2017), but the stronger the personal connection to the experience, the greater the associated discomfort resulting from the critical reflection, thus becoming a greater barrier (Brookfield, 1987; Cranton, 2016; Taylor & Cranton, 2013).

Overcoming barriers.

When triggers and barriers are encountered, it becomes more difficult to assimilate or accommodate the event. The participants have described difficulties due to their own compassion and anger, and some report a new awareness resulting in a concern for their own children. But when the events are overwhelming or hit too close to home, the participants would reach out for assistance in processing the event:

> If it is a little more severe and I am struggling a little bit more, it might [pause] it might be a talk. Until the sequence of events are not constantly running through my brain, then I haven not put it to rest yet. (Katherine)

Katherine instinctively knew that dialogue is a positive way to turn rumination into reflection. Julie told us earlier that for her, this takes much effort and she learned to use mindfulness and meditation as a tool to stop her rumination. As we have seen, emotions and personal connections can interfere with processing of critical stressors, and our perceptions of cultural norms can compound those barriers, but changing the individual's cultural perception can break down the barriers.

> After the SIDS [Sudden Infant Death Syndrome] death I had a good cry. I can remember coming out to the crew area. My eyes were probably still a little puffy. I thought I was being tough [and came out] to find the senior medic there, crying. That gave me permission to be human. (Julie)

Ward et al. (2019) explain that critical reflection is more difficult when in the midst of a crisis, but prior awareness of the process can help the individual identify the need. Julie's barrier was her perception that she must be strong and hide her emotions which ultimately would block the ability to critically reflect; but seeing a peer's reaction broke down that barrier. But even with an awareness of the need for critical reflection, sometimes there needs to be a reminder to reach out and talk and have dialogue:

> Sometimes it is too close, the scenario, the call is too close to home, and I will not be able to talk about it because it is affecting me too much. You just want to keep your stuff together for the next call so when I do not talk about it, when I try and keep it all in and go home and pretend that nothing is wrong, and then 'I am fine, it was perfect day at the office', that is when the anxiety comes, the thoughts come. It does not help if you do not talk about it (Lorna).

Although critical thinking implies a focus on thoughts and cognition, in critical thinking and critical reflection, and for their part in transformational learning, emotions play a large role. Strong emotions can signal the importance of, and need for critical reflection. To learn; to make meaning of the event, there must be reflective discourse through dialogue with others to analyse the assumptions behind the feelings and resulting behaviours (Ward et al., 2019). The participants in this study learned through experience that when the severity of the critical stressor increases, or if the critical stressor was a trigger event, the need for assistance in processing the event increases and they would naturally reach out to engage in dialogue. Additionally, it seems to be important that it is the individual who reaches out to talk when they are ready, and not others prematurely offering their assistance, until there has been some time to critically self-reflect:

> My wife is always good to ask me how your day was and 'you have any stressful calls?' I usually answer 'no', but I know she is there. I need to be the one to be forward with it whenever I feel the need to be forward with it [otherwise] I do not find it authentic and sincere. If I had a supervisor come to me and ask me if I am OK and stuff, and I'd say, 'yeah I'm fine', and I almost feel guilty that maybe I should feel bad about it. (Robert)

It is authentic individuals that are willing to engage in the type of discourse that can foster critical reflection (Ward et al., 2019). Asking 'how was your day' or 'are you ok?' in the eyes of the paramedic is polite conversation and not an opening to the type of dialogue that fosters critical reflection. Coady (2013) suggests readiness for change begins with self-examination of assumptions. Dialogue with others can lead to change, but there must first be an openness to critical reflection as it is cognitively demanding, uncomfortable for some, and a skill that takes

time to develop (Brookfield, 1987; Cranton, 2016; Pretorius & Ford, 2016; Taylor & Cranton, 2013). Timing and sequence are important to be sure an openness exists:

> I think that process needs to happen for them before they can tell me if they are fine or not. I find that maybe our paramedics are being contacted too quickly, I know for me, if somebody asked me if I am okay and I have not even done my ACR [Ambulance Call Report] yet or my incident report, of course, I am okay. I'm still running off adrenaline. (Julie)

The participants only became open to critical reflection after a period of critical self-reflection, and then only if they felt the need, if they had a personal connection to the event, or if the event proved to be more challenging than the normal reality they have created for themselves.

Preparation for change.

Our focus group discussions went into great detail about being prepared for the profession; for the new realities new paramedics will be exposed to, and how clinical preceptors and mentors can guide a new paramedic recruit in developing coping and reflexive skills. Ward et al. (2019) propose that the intensity of a trainee's disorienting dilemmas can cause them to question their career choice, but also suggest that for most, this angst will pass, and emphasize the importance of preparing new trainees for what their chosen career holds for them. The participants caution that in retrospect, preparation is important, but so is knowledge of how the profession could affect a change in them, agreeing with Ward et al.. Sufficient life experience is necessary to learn and develop good coping skills prior to entering the career:

> When I graduated from college, I was not prepared that people actually die. We are there to help, not harm. And then you start having calls where you could not help. I do not know that they [colleges] do well preparing students for that.

> . . . I have seen people that we have hired as new hires straight out of college and some people that are in their late 20s early 30s, most likely [are on] a second career path. Their coping skills, their maturity level, they do better. (Julie)

Although the idea of prior life experience as a prerequisite for entry into the training and career for a paramedic was prevalent in the discussion, and was no doubt an asset to the 50% of this study's participants who came to the career with what they described as good coping strategies learned from life experience, both those with and without life experience were confronted with a need to adjust their realities as a result of their paramedic experiences, luckily with mentors to guide them through the process. All paramedic trainees in Ontario participate in clinical preceptorship programs where they are paired up with tenured paramedics for at least 450 hours on shift, to guide the transition from a student practice environment to the real world. The training for most preceptors is lacking at best, thus they must rely on their informal and nonformal learning to gain the skills to not only be a clinical preceptor, but also a mentor to guide the new trainee through their experiences with potential critical stressors. To accomplish the difficult task of mentoring new paramedics, relationships must be developed with the trainees that foster openness and reflective discourse, and the preceptor must be attuned to the trainee's old reality and the new realities they are building for themselves (Ward et al., 2019).

Lorna describes her preceptor. "I had a phenomenal preceptor, and I saw a lot of trauma during my preceptorship, and he was amazing at helping me deal with my emotions, coping with the situation, and just, you know, keeping an eye on me." Lorna expands with how she now practices as a preceptor herself. "We are not just there for clinical. We talk about everything. We

help them in every aspect we can." Katherine adds to the conversation that her preceptor validated her feelings, which created an opening for dialogue.

> She just validated how I was feeling after the call. She understood that a lot of the times, it was new to me, right? So yeah, she just validated my emotions. She was very open to me talking about it. She encouraged me to talk about how I was feeling post calls. She never shamed anybody for feeling any sort of emotion, whether it was the same emotions she was feeling or not. She would let me talk about that and never made me feel bad.

It is clear that preceptors can encourage or guide paramedic trainees in critical self-reflection and critical reflection on the new experiences that challenge their realities, their beliefs and values they possessed prior to entering the world of paramedicine, and new ways of knowing can be created contributing to ongoing resiliency (Coady, 2013; Fazio-Griffith &Ballard, 2016; Heddy et al., 2017). These new ways of knowing can result in transformational learning for the individual which is evident in changes to behaviour, thoughts, and beliefs, potentially affecting personal identity (Brookfield, 2012; Charaniya, 2012; Illeris, 2013).

Evidence of change.

Transformational learning is the result of learning through reflection on the unique psychic structures of the individual; or in Jungian terms, the emergence of Self (Cranton, 2016). It is not likely to occur without critical reflection (Brookfield, 2012; Cranton, 2016; Merriam & Bierema, 2014, Mezirow, 2012), is solely in the mind of the individual, and can only be seen by others through changes in behaviour and in the stories they tell. The stories told by the participating paramedics include a new and ever-evolving normal, and a change of how they see

and fit in the world; a change in identity. Katherine, a self-declared wounded warrior, has become hardened, but through the hardening, has a new appreciation for life:

> I definitely have battle wounds from this career. And workplace injury… If I was not a paramedic for the last 11 years, I may or may not have anxiety. I have anxiety now. I do not know that I would have that if I was not a paramedic. . . . I think the hardening of our emotions is a survival tactic for this job. I do not think that you can continue on in this career if your emotions are at your forefront. . . . I am aware that not everybody has a white picket fence around their house and it is sad to me. It is sad to me that we live in a place that is like that . . . Because it is more of a norm for me now, it does not bother me as much. I just accepted that people do not live life the way I thought everybody did . . . It makes me appreciate the quality of life that I have, and the quality of life my family has.

Where Katherine has anxiety and a new norm, Johnathan, like Katherine, also has a new appreciation for life along with a new sense of empathy as well as a similar hardening of emotions:

> I think because of the job I am probably more empathetic, sympathetic. I think the things that do bother me would be like injustice. . . . Because I see different parts of society that some people do not see inside people's homes, I am probably more empathetic than most people, although I may not show it, but I feel it. . . . I have definitely adapted my life to the things I have seen. Might make me less emotional than I could be. I try being aware of it but like my one example that I think of a lot as when I go to funerals, for whatever reason

> somebody's parents, a friend, or whatever, I am cold. . . . Probably the only thing that bothers me is I think sometimes I am too cold, but I do not know if I am too cold. I am not sure how to measure against other people . . . I think I should be upset. I always want to be a little upset so I can be a human. Instead I am not. . . . The negative things have made me more positive if that makes any sense. I try and see the good in things. I am very optimistic. I am a very Pollyanna kind of person. It is always been that way, but I think this job makes me appreciate life, maybe more than most people. (Johnathan)

Johnathan's story is one that aligns closely with my own narrative. Becoming emotionally cold but at the same time, being more empathetic although controlled and hidden, and a new appreciation of life in light of the plight of others. Robert describes a similar dichotomy of hardening to the situations others experience while becoming more appreciative and loving in his personal life, although the two intertwine:

> I enjoy what I do, certainly changed me, my personality. My wife will attest to that. She tells me I am not the same person that she married 27 years ago, and has it changed me to the positive? I would not say to the positive. Certainly different . . . It has formed my political views. It has formed my religious views. It has formed, just generally speaking, my outlook on life. . . . When it comes to intimacy, and being loving, that has not changed and may have even gotten better because I appreciate, even though I have a different view on death, I certainly appreciate my family and my wife and my kids so I am very affectionate. . . . My view on death has changed, absolutely. My mother died, what about 4, 5 years ago now, and I did not cry, and again I felt guilty, and I

> think it has been years of work and seeing a lot of death. And not because I do not feel bad about it, but I feel that you are just moving on. I think it is actually a mixture. You know what your beliefs are, and being hardened by the fact that, you know what? People die . . . I do not mean hardening in the sense that I have no feelings. I am able to deal with stuff, and not let it bother me. . . . I have less patience, but that can be because of my age too. Certainly, more irritable you know, I have a shorter fuse, so it has changed me that way. Of course, you know, a little bit of compassion fatigue for sure.

It is clear that there is evidence of change and possibly post traumatic growth for Robert in that he accepts the negative things life holds for some people giving a greater appreciation for what he has, but there have also been negative consequences. The effects of his hardening is evident in what he calls 'compassion fatigue' but more closely aligns with the definition of burnout syndrome, the opposite of post traumatic growth, and a negative consequence of his transformation.

A common theme amongst the participants is a hardening of emotions resulting in a fine line between newly acquired positive and negative traits. Julie explains it this way:

> I think [change] is a side effect of the job that we do. I do not think we can continue doing this job if we cannot separate ourselves from our feelings. I think with each experience, you learn, and with each experience you kind of grow a little bit more of a scab. I would not say that it is compassion fatigue. I would just say that after all the things that we have seen, we have a different scale. . . . In a positive light I would say yes [I see things in a different way], because I see a larger picture. And in a negative light, I would say I may be a

> little more jaded and a little less sensitive, maybe a little desensitized. And I think that happens naturally as self-defence. It gives you a gauge. What is serious, what is not really serious? What is life-threatening? What is not life-threatening? Is this something to be upset about or is not it something to be upset about? Some people say it is jaded, but I would like to say it is desensitized. So my family probably sees very little sympathy to their little bobo's because I just used a tourniquet on my last day of work and someone was actually bleeding, like actually bleeding, life-threatening bleeding. So my gauges have changed because of the things that I have seen and experienced.

Lorna did not explicitly discuss hardening of emotions, but she did talk about being an actor and putting on a strong façade. Lorna felt that due to her role as a professional rescuer, this role needed to be extended to her personal life:

> You go to a funeral and of course I miss him and of course I am sad that they are gone, but there is always a part of you that feels like you have to be that 'put together person', that 'put together a strong person'. because everybody else is having their moment.

But through that façade, Lorna is becoming more understanding of the plight of others which translated to re-evaluating her personal life using critical thinking:

> I am not as 'judge-y', or judgemental. You see things. You hear about things, and it is not always what happened. There is always a story behind what has happened. I try and just see things for what they are, and not judge on what a person has done or why they have done it. Everything happens for a reason… I am not always trying to understand why things have happened. Sometimes

> things just happen. . . . I mean this job makes you really prioritize your own life… we are exposed to a lot of things, and it is going to influence you some way or another. . . . It is not normal for the layman, but it is normal for people in this profession.

As a result of her critical thinking, Lorna differentiates her new normal as a result of her paramedic experiences from those of people not in the profession. Terry, the only participant who purposely chose the paramedic profession, is also the participant with the least change as a result to the job. Although he recognizes the stresses of the day-to-day critical stressors and critical incidents, he faces them with a positive attitude and a supportive wife with whom he will have dialogue and critical reflection on his work-related experiences. Terry copes well with his stressors and attributes a new appreciation for what life has given him as a result:

> You see the effects of cancers and things like that, and young families or even older families, and how it can be devastating. So I am very appreciative that I am not in that position and that I have those people in my life, they are still healthy, and, you know, I go home at night, and I can sleep in my bed and be safe and happy and comfortable. So yeah. I think for sure, seeing that over the years, you have a firm appreciation for that.

Each participant was able to identify a change in themselves; a change in how they see the world. All but one tell us their emotions have been hardened while their empathy, a common character trait of a caring practitioner, has increased. Hardening should not be confused with compassion fatigue as all participants indicated a sense of compassion satisfaction. Hardening may be a way of separating personal emotional investment from the care being provided in an effort to protect their own wellbeing while allowing empathy to subsist. Each participant

indicated they experience positive feelings and find meaning resulting from their experiences and critical stressors and hold a new appreciation for life, evidence of posttraumatic growth and a change in how they see their worlds.

Implications for Practice

Paramedics see life and death unfold daily resulting in multiple disorienting dilemmas. For most, the dilemmas present new realities that are not congruent with past experiences. This can be bewildering for some as the situation requires a change in belief paradigms, or distress may ensue. Adding to the perplexity for change to occur, critical self-reflection and critical reflection are required, creating the potential for emotional upheaval. But in this turmoil, there are opportunities for transformation. It is through critical thinking and critical reflection that paramedics can process or make sense of their new experiences. Critical reflection requires discourse and dialogue. It cannot be forced, and it must be authentic. The participating paramedics learned that systematic self-reflection through the documentation of events, including making connections to the multiple conditions that lead up to the event itself and the final outcomes; getting the whole story and completing the puzzle, can aid in the process and may even be required before dialogue can occur. For others, the systematic reflection can be sufficient to make sense of events without dialogue occurring. It was identified that personal connections to situations and new experiences can become barriers to critical reflection, similar to bias blocking learning. Knowing oneself and awareness of our personal biases can aid in getting past the barriers we create for ourselves, but even critical reflection without barriers is difficult to teach. Critical reflection is best learned through guided experience where rumination can be turned into reflection, creating new realities; creating change.

The transformational learning the participating paramedics described was not epochal but occurred incrementally over time (Johansson, 2019). Most describe a disassociation of their feelings from the events, what they called hardening. Feelings and compassion remain, but from seeing the worst time and time again, the everyday events seem less severe. It also involves accepting that bad things happen to both good and bad people. Death happens. It is the end of life. Seeing the world in this way became the new norm. But as the daily experiences were processed, new empathy for others was created, counterbalancing the hardening creating a fine line between compassion fatigue and compassion satisfaction. Each participant developed a new appreciation for life and a new outlook; a change to self or personal identity. These positive changes do not negate negative effects as there was some evidence of burnout syndrome and anxiety. Positive changes were more likely if early career experiences included preceptors or mentors to guide critical reflection on experiences. This guidance ultimately became lifelong learning on how to process critical stressors. Other beneficial factors that aided in learning critical reflection and processing of critical stressors were an informed choice to enter the profession, and a slow introduction to stressors. Carter, Boden and Peno (2019) suggest that "the capacity for transformative learning can improve resilience and coping strategies for those in healthcare and the helping professions. Fostering transformative learning can become a developmental goal" (loc. 417). The participants stories reveal they learned and practice critical thinking and critical reflection, the type of reflection that results in change and post traumatic growth, thus reinforcing the idea that teaching reflective practice can foster transformational learning and be a key to resiliency to occupational stress injury and PTSD.

Significance of Research and Recommendations

The significance of this study is that it identifies more can be done to protect the health and safety of paramedics. Much work has been done in this area to mitigate the onset of occupational stress injury and PTSD, but most focus on after the critical event including recognition of symptoms of occupational stress injury and PTSD, learning coping strategies to reduce the effects of the critical event, reducing stigma towards mental health, and knowing when to reach out for help. This study adds by identifying strategies to equip paramedics with the skills required to be critical thinkers; to teach paramedics the skill of how to cognitively process critical stressors before they begin experiencing them; teaching paramedics how to be resilient as a preventative factor. The results of the study suggest it is possible for educators to help paramedics develop resilient identities who know how to care for themselves as well others, aligning with Carter, et al. (2019). This requires paramedics to develop critical reflection and critical thinking skills, both of which are difficult to teach, and ultimately the ability to undergo ongoing transformational learning as each shift worked can create a new disorienting dilemma. Each new day can offer opportunity to build resilience and facilitate development of our lenses and identities (Tisdell, 2019).

The recommendations here are made to augment the important work that has come before as there is not one method that will work for all people. Anti-stigma training, the ability to recognise of symptoms of occupational stress injury, and coping strategies are all critical to an occupational stress injury and PTSD prevention program (Ward et al., 2019). Key recommendations to be included in any stress prevention program for paramedics, paramedic managers, and most importantly paramedic educators, resulting from this study include:

1. New trainees must be informed early on in their training that they will experience critical stressors as a result of their chosen profession, and must be made aware of, and prepared for, a potential lifetime of transformations (Johansson, 2019).
2. Critical reflection and critical thinking practice should become part of paramedic core training.
3. Paramedic clinical preceptor training should include methods on how to guide paramedic trainees through a reflexive process after experiencing critical stressors. This begins with the recognition of a disorienting dilemma and associated negative emotions and then guiding the paramedic trainees through the discomfort using critical reflection and dialogue thus fostering transformation and growth. Through repeated practice of critical reflection and the transformational learning process during paramedic clinical preceptorships, the paramedic trainee is well positioned for growth from their day-to-day critical stressors (Johansson, 2019).
4. Experienced paramedics can learn and mentor peers in the same process of guiding others through the reflexive process, in a formal or informal method.
5. Critical self-reflection on critical stressors is a required skill and can be augmented by learning how to systematically self-reflect using patient documentation as a tool, filling in gaps i.e. events prior to the incident and patient outcomes.
6. Self-reflection should not be interrupted by others to initiate dialogue as individuals require time to process the event before talking about it, and for some, systematic reflection is sufficient to cognitively process the critical stressor.
7. After paramedics have self-reflected either systematically and/or cognitively, if still required, defusing with peers, mentors, spouses, etc. through discourse and dialogue

is recommended to foster further critical reflection and cultivate an openness to transformational learning.

8. Defusing should only be offered if the individual reaches out, or if signs and symptoms of occupational stress injury are recognized by others (e.g. peers, supervisors, family etc.).

As a cautionary note, stress management, coping strategies, and self-care should be employed to mitigate any lingering after effects of the critical stressor. Peer support or professional help should be sought out if still required. When one makes sense of one's experience, one constructs the reality one lives in. The information gleaned from this research reveals a link between transformational learning theory, the processes that promote posttraumatic growth, and how reflective practice can contribute to the mental well-being of paramedics. The outcome of this study provides a new perspective on continuing mental health education to improve resilience to occupational stress injury in paramedics through fostering transformative learning, using the lens of reflective practice. Although the resulting recommendations may be a key to paramedic resiliency, further study is required to identify if there are characteristics of a paramedic candidate that would assist or hinder resiliency and if age and maturity are important factors. Further investigation is also required to identify how external stressors and mental wellness might interfere with resiliency. Future studies should include other emergency services, considering those where critical stressors are outside of the norm such as volunteer fire fighters and search and rescue. Finally, new questions derived from this study arise; what about the hardening or desensitisation most of the participants experienced is significant? Is the hardening a major component to becoming resilient? Can the individual become hardened or desensitised as a part of their initial training as a preventative resiliency factor?

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Appendices

Appendix A: Interview Guide

Introduction script

- Review the invitation to participate and consent form. I will re-inform the participant that confidentiality will be maintained, and pseudonyms will be used in all reports. Have the consent form signed if not already done.
- Discuss who I am, my work history and experiences, and what has led me to conduct this study.
- Discuss the goals and objectives of the study.
- Explain how the interview will be conducted (overview below).
- Discuss risks associated with critical and reflective conversations, and the self-help tool and warm/hotlines.
- Request permission to record the conversation. Inform the participant a transcript of the conversation will be returned to them to review and they will have the right to ask for corrections or deletion of any sensitive information.

Conversation guide, questions, and possible probing questions/notes

- *Conversation starter/Statement*
    - *Question*
        - *Possible probe*
- Tell me who you are and why you became a paramedic.
    - What has the job of a paramedic been like for you?
- Tell me about your typical day in the role of a paramedic.
    - How do the day-to-day calls affect you?
        - How do the various calls affect you differently?
        - What influences the differences?
- I am interested in resilience. Tell me about your day-to-day stressful experiences.
    - How did you deal with, or make sense of, your day-to-day stressful experiences?
        - What helped?
        - What didn't help?
        - Now that you look back, what could have helped?
- I am also interested in growth from stress. Tell me about how your day to day stressful experiences may have changed you as a person.

    (For instance, how do you relate to your colleagues; your perceptions of yourself; new possibilities; new appreciation for life; spiritual change, etc. (Austin, Pathak & Thompson, 2018

    - What have you learned as a result of your day-to-day stressful experiences?
        - What has changed?
        - Do you see things in a different way?
        - What contributed to this new thinking?
    - Thinking about those changes, what contributed to the change?
        - How did the change come about?

  - What did you do that led to the change?
  - Was there any introspection?
  - Was there dialogue with others?

Closing script

- Thank the paramedic for participating.
- Reemphasize confidentiality will be maintained, and remind participants they will be supplied with a copy of the transcript for review.

Appendix B: Focus Group Conversation Guide

Introduction Script

- Review the invitation to participate and consent form. Remind the participants that confidentiality will be maintained, and pseudonyms will be used in all reports. Discuss confidentiality as a focus group participant, asking all participants to maintain confidentiality. Have the focus group consent form signed by all participants if not already done.
- Explain how the focus group will be conducted.
- Discuss risks associated with critical and reflective conversations, the self-help tools, and warm/hotlines.
- Request permission to record the conversation. Remind the participants a transcript of the conversation will be returned to them to review and they will have the right to ask for corrections or deletion of any sensitive information

Focus Group Confidentiality Script

Everyone here is asked to keep all information shared during the process confidential, but I cannot promise this will happen. There is some risk that you may reveal personal information that might cause you to feel self-consciousness or embarrassed afterwards. The transcript of the focus group will be returned to you to review and you will have the right to ask for corrections or deletion of any sensitive information.

Focus group conversation guide, questions, and possible probing questions/notes

- Statement
    - Question
        - Possible probe

- [Deleted] ~~Think about our conversations on your day to day stressful experiences, resiliency, and change resulting from your role as a paramedic. I would like to understand their connections; how they are linked together.~~

    - ~~What resilience strategies worked for you?~~
    - ~~How did your resilience strategies contribute to your growth as a person?~~
    - ~~What do you do differently now in comparison to earlier in your career to prepare yourself for your day to day stressful experiences?~~
    - ~~How would the thinking that originally led to your personal growth be different or the same in other circumstances?~~

- *[Added] Think about our conversations I had with each of you about reflection, resiliency, and change. I would like to understand their connections; how they are linked.*
    - *The common things each of you said were; having dialogue with peers; talking about your perceptions resulting from calls, bouncing things around; and*

thinking about things in a reflective way, logically thinking things through trying to understand them.

- *When you do these things, what do you think is happening on the inside, in the deep parts of your mind or inner self?*
  - *While you consider your answer, also consider this quote "**It is the influence, or the lens of the individual's beliefs, that create the reality they respond to"***
- *How did these things contribute to your growth as a person?*
- *How would the thinking that originally led to your personal growth be different or the same in other circumstances?*

- I am interested in your ideas.
  - *[Added] What do you do differently now in comparison to earlier in your career to prepare yourself for your day to day stressful experiences?*
  - What resilience strategies would you recommend to other paramedics to navigate their daily experiences?
    - How would your advice be different for new and experienced paramedics?
    - How would you suggest teaching the strategies to others?

Closing script

- Thank the paramedic for participating.
- Reemphasize confidentiality will be maintained, ask all participants to respect the confidentiality, and remind participants they will be supplied with a copy of the transcript for review.

Appendix C: STFX REB Approval Letter

St. Francis Xavier University Research Ethics Board

6 March 2019

David Wolff (x2017tcj@stfx.ca)
Master of Adult Education
Advisor: Dr. Carole Roy (croy@stfx.ca)
St. Francis Xavier University

Dear David:

Re: Romeo # **23861** **"A new perspective on continuing mental health education: A case study on how reflective practice can improve resilience in paramedics"**

The Research Ethics Board (REB) has cleared the above cited proposed research project for ethics compliance with the Tri-Council Guidelines (TCPS) and St. Francis Xavier University's ethics policies. In accordance with the Tri-Council Guidelines, your project has been cleared for one year. At the end of each year, the REB will ask if your project has been completed and, if not what changes have occurred or will occur in the next year.

Renewal /Anniversary Date: **6 March 2020**

You are reminded of your obligation to advise the REB of any adverse event(s) that occur during this one year period. An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s).

You are also reminded that all changes that might affect human participants must be cleared by the REB. For example, you must report changes in study procedures or implementations of new aspects in the study procedures. These changes must be sent to the undersigned prior to implementation.

On behalf of the Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

David Young, Ph.D.
Associate Professor and Chair
Research Ethics Board

Appendix D: Building a Self-Care Plan

This document is a stress-related mental health fact sheet published by the Mental Health Commission of Canada, one of two documents provided to all participants to assist in mitigating the potential for posttraumatic injury.

Mental Health Commission of Canada | Commission de la santé mentale du Canada

HELPING YOURSELF AND OTHERS AFTER EXPERIENCING A TRAUMATIC EVENT; BUILDING A SELF-CARE PLAN

Stress or anxiety are normal reactions to a traumatic event. Reactions can range from moderate to overwhelming for individuals directly impacted. Possible reactions one might experience include:

- ***Re-experiencing the trauma*** (recurrent dreams of the event, flashbacks, and intrusive memories)
- ***Feelings of uneasiness in situations that bring back memories of the trauma or event***
- ***Avoidance behaviour*** (such as persistent avoidance of things associated with the event)
- ***Emotional numbing*** (feeling "not entirely present", preoccupied, distracted)
- ***Reduced interest in others and the outside world*** (avoiding others and disengaging from activities that normally bring enjoyment, fatigue)
- ***Persistent increased arousal*** *(*constant watchfulness, irritability, jumpiness, being easily startled, outbursts of rage, insomnia)

These reactions are normal and are experienced when individuals are in abnormally distressing situations. While most people recover after acute traumatic events on their own or with the assistance of a mental health professional within weeks of the event, it is important to note that some individuals do not experience these reactions until later. In either scenario, it is important to acknowledge your reactions and seek appropriate support.

Self-care techniques

- Prioritize all personal safety and health needs.
- Learn and practice controlled breathing methods (slow, relaxed breathing) to reduce physical symptoms of anxiety, fear, and panic. Avoid breathing too deeply or rapidly as this can cause physical symptoms of panic.
- Get enough sleep.
- Reduce caffeine intake to 300mg or less per day.
- Learn and practice daily relaxation methods to reduce physical symptoms of tension.
- Get regular exercise.
- Identify and challenge exaggerated words and pessimistic thoughts.
- Use evidence-based anxiety websites or self-help books.

www.mentalhealthcommission.ca
www.commissionsantementale.ca

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