

Prevalence of PTSD Symptoms in Canadian 911 Operators

by

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even when I am unlovable.
This is for you.

Abstract

By answering the 911 telephone line, ascertaining what type of help is needed (police, ambulance, or fire) and how fast they are to respond, the 911 communications operator is the “first” of first responders. If 911 operators were not able to extract vital information from panic stricken people and make split second decisions to send the required help, members of the public would not receive the assistance they need and many could perish. Yet, 911 operators are forgotten when it comes to prevention, education, and treatment for stress-related injuries resulting from their work. This study examines whether 911 operators suffer from post-traumatic stress symptoms than could amount to a diagnosis of PTSD, which of these symptoms are most prevalent, and what other factors such as workplace stressors may contribute to their stress levels. This study is the first one in Canada focusing specifically on post-traumatic stress disorder within the profession of 911 communications operators.

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Introduction

The study presented here is a mixed methods inquiry of the experience of 911 communications operators (911 operators) from different parts of Canada with respect to trauma and post-traumatic stress disorder (PTSD). The study was driven by the fact that Canadian-based empirical research that focuses on 911 operators and post-traumatic stress disorder has never been done before. The work of 911 operators is tremendously important to communities and the police, fire, and ambulance personnel, collectively known as first responders, which they serve. 911 operators often hear traumatic incidents as they are occurring in real time and while doing so provide not only a calm voice to callers while collecting necessary information, but as dispatchers they provide pertinent details, level of response required, and safety information to the first responders attending. As dispatchers for other first responders, 911 operators are their lifeline when backup is needed; as a result, 911 operators also hear first responders in distress, or sometimes in life threatening situations, and must respond accordingly. This study focuses on whether 911 operators suffer psychological distress from listening to and engaging with other first responders or people during and after a traumatic experience. If this is the case, what is the prevalence of this kind of distress among 911 operators? Are there other factors that may be contributing to 911 operators developing stress related injuries such as PTSD? The absence of data on these questions in Canada is likely responsible for the lack of attention generally given for the education, prevention, and treatment of PTSD among 911 operators and as a result, many of them are left to suffer in silence.

Research

Rationale

Historically speaking, before telephones were in every home, if a person needed medical attention, someone went running to find the local doctor, or when a building was on fire all the local men came out to help put it out using bucket brigades, and if the law was needed, a runner was sent to find the local police officer. When telephones became more available, call boxes were placed in strategic locations that people could use to call for the police, but if there was no answer then people had to go and find an officer. In the early 1950's, women began being paid a small sum to answer the phone and perform other secretarial tasks for the officers and the role of a dispatcher was born (Robertson, 2009). However, there was still no communication between the three emergency services (police, fire and ambulance), and people all had to call the seven digit telephone number for each service they needed (Bennett, 1959). Police dispatchers would also have to call the seven digit telephone number if they needed fire or ambulance and vice versa, at one point there were 32 different telephone numbers to call for help in the greater Winnipeg area (Bennett, 1959). Hence, in 1959 Winnipeg Mayor Steve Juba authorized the development of 999 as a central answering point for all emergency calls and the police became responsible for maintaining the system (Bennett, 1959). It was decided to hire women because they could be paid \$200 per month whereas men would cost \$345 per month (Robertson, 2009). Winnipeg was the first city in North America to implement the three digit emergency telephone number and central registry emergency system (Bennett, 1959). The first time the recordings were counted, 999 was receiving up to 179 telephone calls in a 24 hour period with a minimum of two operators on duty 24/7 (Bennett, 1959). Operators took the name of the caller, the location of the incident and what was happening then let the callers go. The operator then called

whichever emergency service (police, ambulance or fire) was needed and relayed the information to their dispatcher. Each individual emergency service still had their own dispatchers to send first responders out to the incident via two-way radio (Bennett, 1959). Across most of Canada this is still the way that the 911 system functions, albeit in an advanced form, however in more heavily populated areas organizations are being created to amalgamate 911 with the call-taking and dispatching services of the individual police, fire and ambulance services within that region all into the same building. One such organization is Emergency Communications for Southwestern BC (E-Comm) and is where this author was employed for about half of her 10 year career as a 911 communications operator. It is therefore from this author's own personal experiences as a 911 operator that the following explanation of the importance of the role of 911 and what is at stake when first responders respond to traumatic incidents.

According to E-Comm¹, the women and men who choose to become 911 operators do so for a wide variety of reasons but above all else they must have the desire to provide essential services to the public. 911 operators are classified as essential services, the same as police officers, firefighters, and paramedics are and this means that they can be ordered to report for duty or refused the right to go home at the end of their shift; they also do not have the right to strike without maintaining a minimum number of staff on duty. The services that 911 operators provide are absolutely essential for the health, safety and lives of members of the public and the police, fire, and/or ambulance personnel they dispatch to an emergency situation (Emergency

¹ Emergency Communications for Southwestern BC (E-Comm) is cited here as an example because they provide the above information publicly, including the 911 operators collective agreement, online whereas most others do not. As well please note that E-Comm was not a participating organization in this study, however, the requirements of 911 operators are the same or very similar at each of the participating organizations.

Communications for Southwestern BC, 2011) (E-Comm Emergency Communications for Southwestern BC, 2009-2011).

The role of 911 is extremely important when members of the public are calling 911 during a traumatic incident. Due to the advances of technology and the development of the 911 communications operator profession, the role of operators now goes well beyond simply collecting the name of the caller, the location of the incident, and the nature of assistance being sought. Currently, 911 operators are trained to first take control of the call, then collect who, what, when, where, how and why details along with simultaneously entering this information into a computer that sends it directly to the dispatcher for that area of the city. While not every call to 911 is an in progress traumatic incident, for those that are the 911 operator's role does not end at this point. 911 operators then continue to collect information as the incident progresses and must stay on the line with the caller until other first responders arrive at the scene. During this time, the 911 operator must establish a connection with the caller, who is often frantic or hysterical. With only their voices, the 911 operator will help the caller understand that help is on the way and provide instructions to assist in preventing further acceleration of the incident (e.g.: a child calling because daddy is beating on mommy; instructions to the child would be to put themselves in a place of safety, hide in room where the door can be locked, or under their bed, but a place that the child can take the telephone with them in order to maintain contact with the 911 operator). As well, the 911 operator would search the history for the address to find out if police had attended previously and for the name and age or birthdate of the adults involved. This is necessary because younger children often do not know their parents first names or date of birth, but also so that the officers attending can be provided with as much detail as possible before they arrive. For instance, does mom or dad have a prior record for assault, or is it known

whether or not there are weapons in the home, do either parent have a history of non-compliance, drugs/alcohol or combative behavior with police? This information is all very urgent for the police officers en route and although they have computers in their vehicles, police officers cannot drive with lights and sirens while simultaneously typing and reading. Therefore the process is streamlined and 911 operators have been given the responsibility for providing the necessary history and safety information to the officers attending before they get there. Once the 911 operator gets the names and date of birth for each person involved, they are run on CPIC and the information is placed into the computer, the dispatcher reads this information to the officers over the radio along with keeping them up to date as the incident progresses. While explaining this process in a simplified manner here makes it sound as if it is an easy task, please remember that it is expected a 911 operator will complete the first step within 30 seconds – one minute, and that the following steps are completed before the officers arrive, usually within two to four minutes from the time the call was received. Failure to do so can cause a police officer to run into a volatile incident unprepared and this could cost them their life, or the lives of those involved in the traumatic incident unnecessarily.

It is therefore important to understand the 911 operators experience in engaging with people, dealing with traumatic and dangerous situations and to understand the impact that these interactions have on the operators. There is evidence that many 911 operators suffer from post-traumatic stress symptoms, but there is as yet very little systematic data on that aspect of their experience. 911 calls received range from someone asking what time it is to someone in the middle of a life-threatening situation such as a homicide or suicide in progress, i.e.: Vancouver Starbucks murder, January 2000 (CBC News, 2001) or worse, massive situations such as the attacks on the World Trade Center on 9/11. 911 operators are trained to respond with calm and

precise closed or open questions and to perform decisive actions in order to garner a specific response every single time someone calls 911. It is a 911 operator's job to remain calm during the storm (McLellan, 2006), thus despite fear, helplessness or horror they may be feeling, they must follow specific protocols to perform their duties perfectly every single time. 911 operators who work as a dispatcher send responding units (police, firefighters, ambulance) to the scene and communicate with them for the duration of the incident. There are times during a situation involving a serious incident in-progress when the dispatcher will hear one or many responding units calling for backup and/or reporting they are injured or under fire, i.e.: Vancouver hockey riots 1994 and 2011 (Vancouver Police Department, 2011). In both instances, on the phone with the caller or on the radio with first responding units, hearing a situation escalate can cause fear, helplessness or horror in the 911 operator, and often causes a surge of adrenaline, commonly known as the fight or flight of our autonomic nervous system, as they perform their required response. During this surge of adrenaline the 911 operator must act, fight, and not react, flight. If the 911 operator makes a mistake, it could cost a first responder injury or even their life.

It is the view of Troxell (2008) that the 911 operator is not only the first true first responder but also the pivotal link between the public and those whom are first to respond to the scene of an incident. 911 operators are responsible for collecting the correct information from the public and relaying to those first to the scene, it is therefore logical to state that should information be incorrect or incomplete then members of the public or first responders at the scene could suffer the consequences. Therefore, 911 operators become heavily invested in helping members of the public and the first responders they dispatch for; it is the safety of both groups that is their main focus (Troxell, 2008). It stands to reason that to fully understand what is at stake one must understand how it feels to hear a person perish while knowing that you've

done everything you can to the best of your ability, and that you are helpless to prevent or change the outcome, for this is what a 911 operator experiences. This means that sometimes despite the 911 operator doing everything 100% perfectly, people die and 911 operators feel personally responsible. Everything a 911 operator does is recorded, every telephone call and every keystroke on the computer can be retrieved and examined by supervisors and management. After a traumatic incident, an examination of what happened takes place and if it is ascertained that the 911 operator failed to perform perfectly then not only are they accountable, but they feel the guilt that comes with accountability.

911 operators work days, nights, weekends and holidays, despite the needs of their own families. 911 operators work a twelve hour shift, usually with between 1-1.5 hours' worth of breaks which means that a call-taker will spend 10.5 hours plugged into a telephone line and logged into a computer. During the course of one shift a call-taker can take between 40 – 120 911 calls for service, and as previously mentioned, not all calls are in progress traumatic incidents. However, 911 systems do not have advanced call display and 911 operators cannot selectively screen which calls they will answer and which they would prefer not to. When a call is given to a 911 operator a ping is heard in their headset and then the line is open instantly. To explain, I will refer to how the E-Comm telephone system is set up. When a 911 operator logs into the phone system they are placed in a ladder like queue at the bottom rung and as each 911 call comes in the 911 operator at the top of the queue receives the call, thus each operator is sequentially moved up the ladder each time a call comes in. Once a call is completed and the 911 operator has disconnected they are placed back at the bottom of the queue. Thus, 911 operators who finish their calls quickly logically receive more calls, while at the same time every 911 operator will logically spend about the same number of minutes actively taking a call during

the course of a shift. Referring back to the explanation regarding traumatic calls, this also means that one individual 911 operator can take considerably more in progress traumatic incident calls than the 911 operator sitting beside them, which would logically provide partial explanation as to why some 911 operators are stressed while others are not on any given day. To clarify, it has been this author's personal experience to receive ten or more in progress traumatic incident calls before my lunch break, while a co-worker sitting beside me has only received routine non-traumatic incident calls during that same time period. Thus, while I am working hard to maintain a professional equilibrium, my co-worker is laughing, joking and enjoying the shift and it is well-known within the profession that on our next shift our experiences could very well be in the reverse.

Lastly, a 911 operator cannot just get up and leave the room whenever they want or need to do so, in every organization there are minimum operational requirements that dictate how many 911 operators must be plugged in at any given time. As a result, after taking an in progress traumatic incident the 911 operator hangs up and goes back to the bottom of the queue. When it is busy, this may mean taking another call within just a few seconds and starting yet another in progress traumatic incident before the 911 operator has had a moment to process the previous call. When there are large incidents occurring such as riots, demonstrations, or even motor vehicle accidents during rush hour traffic, hundreds of people are calling 911 to report what they see or what has happened to them, all at the same time. This means that the 911 telephone lines are full and calls are being taken as fast as possible in order to hang up and take the next call in case a life may be at stake. 911 operators work fast, in constant 'fight' mode due to the surge of adrenaline, and they are ever mindful of the need to perform perfectly. For the dispatcher, calls are stacking up and they work furiously to prioritize and dispatch them out to first responders as

quickly as is possible. The term, multi-tasking takes on a new meaning during busy times such as these, and both call-takers and dispatchers must be able to talk, type and listen simultaneously to different people and at the same time keep an ear open for what is going on around them in the room. When trying to imagine this scenario ask yourself, how many conversations you can listen to at the same time. For example, can you listen to someone screaming information at you through a headset and at the same time type something other than what they are screaming? While doing so, can you also hear what your dispatcher is asking you from 20ft away, remember the dispatchers is likely in fight mode and sounds angry with you. How would you prioritize your actions? Would you bark at someone in anger occasionally, given you are also in fight mode? Contributing to this are competing priorities; the call-taker's priority is the caller and getting information to the dispatcher, whereas the dispatcher's priority is the first responders on the way to the scene. This difference in priorities can cause conflict within a large communications center between call-takers and dispatchers, thus it is quite common for there to be noxious stress felt in the room. 911 operators often function in fight mode for hours at a time, and when work is busy this can turn into weeks or months at a time in a constant adrenaline rush. This is because it becomes difficult to turn it off at the end of a shift, and it can cause sleep disturbances and the feeling of needing to be alert at all times, expecting and trying to prevent the worst. Living in a state of constant adrenaline rush can cause both mental and physical health problems for 911 operators.

Stress is part of the human experience; we all experience stress in our daily lives. Stressors may range from tight schedules, bills piling up or cranky children and competing priorities through to the serious illness or death of a loved one. These are all normal stressors that as adults we all learn to cope with as we mature. Now imagine compounding regular life

stressors with the responsibilities of the 911 operator explained above and the regular exposure to traumatic incidents. A simplified way to explain is to think of our brains as a filing cabinet containing many drawers. Each drawer is for different things in our lives, children, work, school, love, short and long term memory, and one of those drawers is for trauma. Every time trauma is experienced is goes into a file in the trauma drawer and the drawer closes when it is over. If left unresolved, then sooner or later that trauma drawer is going to become full and yet the 911 operator continues to stuff more things into that drawer as they experience them. That trauma drawer eventually will not close and files within it begin to spill out all over the rest of the drawers, meaning in the 911 operators' personal life. Unresolved and unprocessed traumatic experiences that have not been taken out of the trauma drawer and placed into the long term memory drawer begin to spill out, taking the form of anger, sleep disturbances, anxiety, denial, sometimes attempts to mask memories using alcohol or other drugs, self-isolation and eventually night terrors and flashbacks may develop. This is the impact that is underestimated for 911 operators whose role within emergency services is crucial to the safety and lives of those they serve. There currently is no systematic data in Canada on the 911 operators' experiences of stress, how they cope and what other things may be contributing factors². According to Troxell (2008), it is very important to understand the experience of stress and indirect involvement in traumatic incidents by 911 operators and build a body of knowledge to which decision-makers can refer to when planning and implementing education, prevention, mental health care and treatment for 911 operators. 911 operators deserve nothing less than the best our society can offer to prevent the potentially detrimental impact of their work on their personal mental health in exchange for their service to the public and first responders alike (Troxell, 2008).

² Troxell (2008) provides a comprehensive description of the 911 operator's role and the impact on them that is very similar to the above.

Questions

There currently is very little research on the psychological distress to which 911 operators are exposed through the nature of their work, the other factors that may be contributory, or how 911 operators currently cope. The collection of this systematic data could help policy makers determine how to provide more focused education, preventative measures, and support in order to protect the psychological and emotional well-being of 911 operators. There is none of the aforementioned research or systematic data that is based on Canadian 911 operators, and thus this study encompasses organizations from across Canada, from the west coast through to the east coast in an attempt answer the following questions:

1. Do Canadian 911 operators suffer from PTSD symptoms due to their experiences with the traumatic incidents of others?
2. What is the prevalence of PTSD symptoms in 911 operators?
3. What coping methods do 911 operators utilize?
4. Are there other factors that may be affecting the level of stress experienced by 911 operators?
5. What is the nature of 911 calls that are most likely to cause fear, horror, or helplessness among 911 operators?

Literature Review

The following review of the literature begins with an overview of the elements of the prevalent culture within first responder communities and then 911 communications centers that may be associated with the stress-related injuries experienced during the course of their duties. This will be followed by a review of the literature on the experience of post-traumatic stress disorder (PTSD) among 911 operators and other first responders.

Culture

According to Fay, Kemena, Benner, and Buscho (2006) police officers, firefighters, paramedics, and 911 operators/dispatchers are collectively referred to as first responders because

they are literally the first to respond to the scene of an emergency. First responders work rotating shifts of 12-14 hours and provide their community with emergency response coverage 24 hours a day, 7 days per week. They become immersed in a career where they regularly see, hear, or are involved directly in tragic and traumatic events (Fay et al., 2006). For the first responders, these traumatic incidents may sometimes occur multiple times per shift (Fay et al., 2006). First responders are taught, and it is repeatedly reinforced throughout their careers, to always appear stoic and in control of the situation regardless of their personal feelings (Fay et al., 2006). Dr. Richard Levenson³ who is currently a Director for Badge of Life US, explains how a police culture and training to appear stoic and always in control creates an elevated risk of line of duty suicides:

Imagine, if you can, going to work each day and seeing the results of the most horrific acts of human behavior. Imagine that you have to contain and control yourself – your fear, your terror, your revulsion – while you work and do your job around what is left at a crime scene. The years pass and you become numb to the blood, the brains, the dead babies, the teenagers impaled on steering wheels, the 8 month old baby that was raped by her mother's boyfriend, the old lady who had no one and died alone only to be discovered a week later in a state of decay. You talk about it with your fellow officers and use gallows humor – there are lots of jokes. You have to be tough; you can't let on that you are sickened by what you have seen, that you have flashbacks, nightmares, and insomnia about being called to that apartment house because what the landlord thought was a stuffed up toilet turned out to be a newborn that was flushed down in an attempt to hide the pregnancy. Your world is chaotic, yet you can't go home and tell your wife because you have to protect her from what you have seen. She wouldn't understand this bizarre world you live in, where what you next see might be even worse than what you saw last. The attacks on all your senses – your vision, smells, hearing are all near shut down to prevent you from taking anymore. You so keep it inside. This is a significant part in the world of a police officer – the part you can't even imagine. (p. 1)

³ Dr. Richard L. Levenson, Jr. is a New York State Licensed Psychologist with a clinical practice in Manhattan. He is a specialist in treating police officers and their families. Dr. Levenson is a Consulting Psychologist to the Badge of Life Foundation, and is Associate Editor of the International Journal of Emergency Mental Health as well as the Journal of Traumatology. Dr. Levenson is Department Police Surgeon for the Ulster County Sheriff's Office in Kingston, NY. .

Dr. Levenson explains that depression develops due to the shame that some police officers feel over their inability to ignore the very human feelings they are not supposed to have as police officers. Some police officers try using alcohol to forget, but eventually even this does not work and their personal lives become affected by anger, strain and the battle to both protect family members and isolate them from a very broken world view. Police officers' in this state lose their ability to cope and thus feel like utter failures both as police officers and husbands, they are too ashamed to seek professional help and are isolated from their peers, "...they decide that suicide is the solution" (p.1). Within police departments, those who commit suicide are not acknowledged for who they were as police officers, instead they and their memory are punted out, never to be spoken of again and their families are not supported. Dr. Levenson explains that this is due to several reasons, starting with the organization's denial that the job causes the officer to commit suicide. Secondly, as human beings we all cope with death by trying to, "...chew it up, digest it, and bring it to a conclusion so that it can make sense ..." (p. 2) and when police officers can't do this they instead work at, "...distancing themselves" (p. 2). In the effort to put as much distance between themselves and the officer who committed suicide they search of deleterious explanations and, "in this regard, awful, terrible remarks are made, and labels are applied [such as] coward, chicken, baby, pussy, whiner, didn't have what it takes..." (p. 2). Thirdly, this process of assigning labels is due to, "... a culture that is intolerant of acute stress and its prevention, [thus] surviving officers use denial and avoidance in order to distance themselves" (p. 2).

In a doctorate dissertation that focused on stress in the firefighting community of Vancouver, BC, Canada, Dr. Lisa Robinson Kitt (2009) found that any display of weakness within the firefighter culture is cause to be targeted relentlessly by peers and superiors.

Robinson Kitt (2009) states that within the culture of First Responder occupations it is absolutely critical that the atmosphere be compassionate, empathetic and helpful in order to provide the necessary support to the professionals whom face traumatic incidents during the course of their duties. However, according to this research such a culture does not appear to be the norm. Instead what was found to be the norm within this paramilitary organization is a repressive, domineering, and harassing society, a 'brotherhood' of sorts that is rife with unfair treatment, allowing for the propagation of a culture that is unable to function in an emotionally positive way as a social unit (Robinson-Kitt, 2009). During the course of conducting the research, Robinson Kitt (2009) was advised by participants that an employee assistance program and CISD are available to firefighters. However, they were discussed only in relation to the stigmatization and fear the participants feel over being discovered as a person seeking such help, or even talking about feelings they may have in regards to the trauma they witness (Robinson-Kitt, 2009).

In an article by Fay, J., Kamena, M. D., Benner, A., & Buscho, A. (2006) the authors discuss the barriers and other issues that first responders experience with standard stress-related treatments. The authors explain that in addition to their training and culture, criticism or heroism by the public and media cause first responders to develop barriers to standard stress-related treatments and how these differ between firefighters and paramedics in comparison to police officers and 911 operators. According to the authors, firefighters and paramedics are often portrayed by the media as heroes and, for some, it is an image that is difficult to live up to; whereas, police and 911 operators are often criticized in the media or by members of the public and that can cause feelings of anger, guilt or shame. Fay et al., (2006) further describe how criticism is particularly difficult to deal with as the first responder is restricted by their employer

from responding to public criticism in any public way, thereby further reinforcing the barrier between themselves and the public. The authors argue that the anger, guilt, shame, or criticism caused by one single incident or the accumulation of many incidents can develop an inner conflict; an inner conflict between what their employers may have said publicly, what their employer expects of them and their own personal feelings about a traumatic incident, and differences can produce stress reactions in first responders. These reactions can vary from self-identity issues to confusion and anger, right through to post-traumatic stress disorder or worse, suicide. As a result of these and other issues, there is a lacuna of research, effective treatment, and support programs that focus on first responders suffering from a variety of stress reactions (Fay et al., 2006).

The culture within a 911 communications centre in Canada is not that different from the police or firefighting culture in the United States. For example, Shuler and Davenport Sypher (2000) describe a situation where a 911 operator expressed compassion and sorrow over a difficult call to a police officer in order to simply share and communicate with the officer. The office in turn reported to the 911 operator's supervisor that the dispatcher needed to see a shrink to deal with her issues. The supervisor responded by advising the 911 operator to keep her feelings to herself lest she be deemed unfit for duty. Shuler and Davenport Sypher (2000) agree that communicating with the public can cause stressors for 911 operators, but a culture that forces the individual professional to stifle their emotions in communicating with co-workers is far more likely to exacerbate their distress. Tracey and Tracey (1998) speak to the need for 911 operators to agree with the unspoken but enforced rules of an organization regarding the expression or suppression of emotions and feelings. Shuler and Davenport Sypher (2000) explain that while it is essential to not express emotion when speaking to someone who has

called 911, continuing to do so behind the scenes appears to be more damaging to the 911 operator and therefore should not be required. They explain that professionals in other private/public sector businesses are allowed the expression of emotions behind the scenes in relation to the public they serve, and that doing so is far healthier for the individual worker (Shuler & Davenport Sypher, 2000).

It is a challenge for many 911 operators to feel a sufficient amount of control over their surroundings and the work they do. As stated by Burke (1995), they experience higher rates of stress or burnout related injuries and become pessimistic about their environment (Burke, 1995). Seyle (1978) describes stress as, "...the non-specific response of the body to any demand" (p.1) and Pines et al., (1981) define burnout as "the result of constant or repeated emotional pressure associated with an intense involvement with people over long periods of time" (p.15). Moreover, as suggested by Forslund, Kihlgren, and Kihlgren (2004) in Sweden, 911 operators become stressed during complicated incidents and this is often compounded by there not being enough units, officers or fire apparatus available to attend all the calls for service received; this lack of resources is an issue that is out of their control. More often than not, 911 operators find it distressing to be personally responsible for an unsuccessful outcome because they are responsible for sending the appropriate number and type of first responders at the appropriate speed (Forslund et al., 2004). It takes extraordinary skill as a 911 operator to make split second decisions, show empathy, and maintain the high level efficiency required of their position and often there is no time to process one call before another one is received (Forslund et al., 2004). Involved in this are the 911 operators', "...tasks [which] are complex and intricate. They need to be flexible, compassionate, efficient and courageous when making decisions. Their challenging job requires a responsible attitude, the ability to cope with stress, patience, and a wide range of

personal and professional knowledge” (p.296). Thus, Forslund and her colleagues (2004) recommend 911 operators receive more training, education, and support in order to alleviate their increased levels of stress.

911 operators often feel disconnected from other departments within the organization they work for and this may contribute to the development of psychological distress. Burke (1995) determined that judgmental comments throughout the department, and the seclusion of the 911 communications center within the building both contribute to 911 operators feeling disconnected from the emergency response team. As well, the more severe the dispatcher bashing is in a police department, the more it can lead to 911 operators feeling acutely aware of being lesser than, or not equal to everyone else in the department (Burke, 1995). Payne (1993) further explains that the lack of balance between 911 operators and police officers as a team inhibits their ability to function at optimal levels. This is a long standing and ongoing issue that causes “role disequilibrium” (Payne, 1993, p. 111) and there are several organizational factors that are can be seen as causal. Payne (1993) states that the lack of support for 911 operators and dispatchers is very apparent due to the fact that police officers do not view their work to be an essential part of the emergency response team. Police officers do not view 911 operators as peers (Payne, 1993). Nor do police officers believe that being a 911 operator requires the skills, knowledge and abilities that empirical findings suggest it does (Payne, 1993). Burke (1995) further explains that as a result of the above, 911 operators do not feel the same sense of loyalty to their employer, including that they feel as though they are not a part of the same team as their counterparts on the street. Not feeling like they are a part of the same team is also caused by police officers treating the 911 operators like “...second class citizens...” (Burke, 1995, p. 5). It is this aforementioned treatment by police officers that, according to Burke (1995), is a main

source of elevated stress levels for dispatchers. However, 911 operators who have supportive social networks and family systems have less work-related stress over those who do not, despite having the exact same lack of a supportive working environment (Burke, 1995). According to Burke (1995), as 911 operators' duties become more intricate due to the advancement of radio and computer technology greater demands are being placed on them, thus there is greater the tension between police and 911 operators, resulting in increased levels of stress for the latter. This is because the 911 operator is able to do more and do it faster, therefore more is being asked of them by police officers, yet the recognition for this appears to be lacking (Burke, 1995).

In addition to the aforementioned feeling lesser than other first responders and role instability, 911 operators are trained to be as exacting and perfect in their duties on dispatch as they possibly can. In training 911 operators are taught to be responsible for the safety of police officers on the road when they work on dispatch (Burke, 1995). Culturally, this breeds an intense level of expectation and personal sense of responsibility that dispatchers feel towards those they dispatch (Burke, 1995). This exacerbates the "...role disequilibrium..." (Payne, 1993, p. 111) for 911 operators which exists between themselves and sworn officers (Burke, 1995). Feelings of responsibility come at the 911 operators from two sides: first from the public calling 911, and second from the sworn officers' response to the dispatcher's call (Burke, 1995). While being in a unique position, it takes a very specific set of skills on the part of the 911 operator to coordinate a compassionate and professional response to the public, while dealing with multiple demands of the officers simultaneously (Burke, 1995).

In addition to the aforementioned sources of stress Taylor (2005) and Troxell (2008), note that 911 operators are also affected negatively by mandatory overtime, administration, management and coworkers. These stress sources coupled with the complexities of their work

all contribute to increased stress levels and burnout for 911 operators (Troxell, 2008).

Mandatory overtime takes the 911 operator away from their family and personal lives, often causing them to miss out on holiday plans or other important functions with their families such as graduation ceremonies, weddings, funerals, or even just shortening the number of days off they get to recuperate from a busy week at work (Troxell, 2008). Mandatory overtime is often caused by low retention rates and in the United States a survey conducted by Taylor (2005) found that the current national retention rate for 911 operators was 83% annually. Taylor (2005) found that 81% of the 911 operators worked in organizations that had regularly booked mandatory or compulsory overtime. Both Taylor (2005) and Troxell (2008) concluded from their research that the greater the number of years of experience a 911 operator has cumulated, the greater the risk that they might develop secondary traumatic stress (Taylor, 2005; Troxell, 2008). Secondary traumatic stress disorder (STSD) is the same thing as the more commonly known term of compassion fatigue according to Figley (1995) who describes it as, "...cost to caring. Professionals who listen to clients' stories of fear, pain and suffering may feel similar fear, pain and suffering because they care. Sometimes we feel we are losing our own sense of self to the clients we serve" (p.1). Figley (1995) states that compassion fatigue reveals itself through, "... re-experiencing the traumatic events... avoidance/numbing of reminders of the traumatic event...persistent arousal... [and is] combined with the added effects of cumulative stress (burnout)" (p.11).

Posttraumatic Stress Disorder

In a research article by Pierce & Lilly (2012), they describe the serious paucity of research that addresses the development of stress-related psychological injuries, such as PTSD in 911 operators. Pierce & Lilly (2012) conducted research regarding peritraumatic distress, PTSD and 911 operators concluding that, "... high levels of peritraumatic distress and a moderate, positive relationship was found between peritraumatic distress and PTSD symptom severity" (p. 1). The results of this study supports the authors' hypothesis that the severe nature of calls often engaged in by 911 operators can cause the, "... intense fear, helplessness, or horror" (p. 2) that was required for diagnosis of PTSD under the DSM-IV-TR. The authors' also stated that the resulting stress can impair 911 operators' decision-making abilities and functioning and result in a significant risk to those who rely on emergency services. In closing the researchers note that a previous issue surrounding qualifying for a diagnoses of PTSD, due to not seeing the traumatic incidents while at work, would be resolved via the proposed Criterion A4 of the then under-development DSM-5, "... telecommunicators' experiences would now qualify them for a diagnosis of PTSD because they are exposed to duty-related aversive details of traumatic events" (Pierce & Lilly, 2012, p. 4).

Changes to PTSD definition in DSM-5

Since the afore-mentioned research by Pierce & Lilly (2012), the DSM-5 was released by the American Psychiatric Association. Post-traumatic stress along with other trauma related disorders have been moved into a chapter of their own and several of the criteria for PTSD have changed. According to the new DSM-5 diagnostic criteria it is no longer necessary for a person to have seen the traumatic incident, "...following exposure to one or more traumatic events" (p.274), nor that the person's response involve "...fear, helplessness or horror" (American

Psychiatric Association, 2013, p. 274). Criteria A of the DSM-5 now includes four different ways a person can be exposed to trauma;

- A. Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:
1. Directly experiencing the traumatic event(s).
 2. Witnessing, in person, the event(s) as it occurred to others.
 3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
 4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).
- Note:** Criterion A4 does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related. (American Psychiatric Association, 2013, p. 271)

The change to DSM-5 Criterion A makes it possible to include some of the experiences of 911 operators in the category of first responders at risk of developing PTSD under Criterion A4, “Experiencing repeated or extreme exposure to aversive details of the traumatic event(s)” (p. 271) because they are repeatedly exposed due to the very nature of their work.

There have also been several other changes to the PTSD diagnostic criteria in the DSM-5 that should be noted:

Criterion A2 (subjective reaction) has been eliminated. Whereas there were three major symptom clusters in the DSM-IV – re-experiencing, avoidance/numbing, an arousal – there are now four symptom clusters in the DSM-5, because the avoidance/numbing cluster is divided into two distinct clusters; avoidance and persistent negative alterations in cognitions and mood. This latter category, which retains most of the DSM-IV numbing symptoms, also includes new or reconceptualised symptoms, such as persistent negative emotional states. The final cluster – alterations in arousal and reactivity – retains most of the DSM-IV arousal symptoms. It also includes irritable or aggressive behavior and reckless or self-destructive behavior. (American Psychiatric Association, 2013)

In the DSM-5 the American Psychiatric Association (APA) states the rate of PTSD for adults is 3.5% over a twelve month period and the, "...projected lifetime risk...at age 75 years is 8.7%" (p. 276). The APA also states, "Rates of PTSD are higher among veterans and others who vocation increases the risk of traumatic exposure" (p.276). Emergency services professions report PTSD rates above the national average, such as firefighters, 24.5% (Wagner, Heinrichs, & Ehler, 1998), police involved in 9/11- 10 years afterwards report a combined rate of full and partial PTSD of 20.8% (Pietrzak, et al., 2012), and paramedics 29% (Regehr, Goldberg, & Hughes, 2002). A persons' individual sensitivity to an event is at the basis to the development of PTSD, because what may affect one person may not have the same effect on another, which would explain why PTSD does not develop in persons every time they are exposed to trauma (Carlson, 1997).

Peritraumatic Distress

In understanding the positive relationship between peritraumatic distress and PTSD found by Pierce and Lilly (2012), an understanding of peritraumatic distress is necessary. Peritraumatic distress is described as, "... feelings of helplessness, sadness and grief, and frustration and anger; physical reactions such as sweating, shaking, and a racing heart; and being horrified after traumatic exposure...[and] difficulty controlling bowel and bladder and feeling like passing out" (Brunet, et al., 2001, p. 1480). It is quite possible that gender and training are factors in the development of peritraumatic distress. Research that tested for specific differences in peritraumatic distress between the genders was conducted by Brunet et al., (2001) and they found no variance between civilian and non-civilian males, but a variance between civilian and non-civilian females, in that females who were police officers scored lower than civilian females. Brunet et al., (2001) also found that females

had greater totals on the “Peritraumatic Distress Inventory” (p. 1480), than males. This is significant because the majority of 911 Operators are female and civilian, and they do not receive the same training as a female police officer receives. Further, Brunet et al., (2001) found that the number of incidents and level of severity of symptoms could be related to the development of PTSD symptoms. Brunet et al., (2001) also concluded that 911 operators’ concern for another person’s welfare occurs in real time not due to being informed of in-progress traumatic incidents after the fact. Therefore, developing posttraumatic stress disorder is often directly related to hearing a critical incident and not solely by viewing it in person (Brunet et al., 2000). Workplace trauma exposure does have the potential to negatively affect 911 operators and therefore, the causes and risks should be further explored in order to provide effective prevention and treatment and ensure the health and well-being of emergency communications staff (Troxell, 2008).

Conclusion

A review of the literature on first responders revealed several findings. First, the culture of the emergency communications center is very similar to that of their respective police and fire department cultures in the three following ways; First, they are taught to be stoic and in control at all times (Fay et al, 2006; Levenson, nd). Secondly, they are exposed to adverse details and trauma (Fay et al, 2006; Levenson, nd; Robinson-Kitt, 2009; Shuler & Davenport Sypher, 2000; Tracey & Tracey, 1998; Burke, 1995; Forslund et al, 2004) and third, they experience a variety of difficulties in coping while at work or home and these difficulties are stigmatized at work while serving to isolate them at both work and home (Levenson, nd; Robinson-Kitt, 2009; Shuler & Davenport Sypher, 2000; Troxell, 2008). The paramilitary cultures of police and fire

departments typically do not acknowledge the need for mental health treatment and, in fact, stigmatize those who seek it (Levenson, nd; Robinson-Kitt, 2009). Lastly, there is a very serious lack of research on the unique situation of 911 operators with regards to their mental health and their response to stress and traumatic experiences (Troxell, 2008; Lilly and Pierce, 2012).

Methods

Recruitment of Participants

A considerable amount of thought was put into how to recruit 911 operators to participate in this study. Ideas ranged from recruiting on Facebook and/or a website together with email, to advertising by word of mouth in a snowball manner, through to recruiting directly from within organizations were considered. Concerns over confirmation of employment status, confidentiality of participants and the timeline for recruitment were all taken into consideration. It was decided for convenience and to address the timeline concerns to recruit directly through organizations. Utilizing this format also meant that the organizations who gave permission for their employees to participate would also be fully informed and likely interested in the results. To address any confidentiality concerns the 911 operators may have the study was designed to be blind to their employers and to me, the researcher, who would be reading and entering responses into the SPSS 21 database system.

Recruitment of Organizations

During the recruitment of organizations for this project, the research proposal was sent out to 10 organizations from the east coast through to the west coast across Canada. A variety of organizations were selected in order to capture responses from 911 operators who work for police, fire and ambulance as well as from both small and large organizations. Six organizations agreed to participate and confirmed they have both an Employee Assistance Program (EAP) and

a Critical Incident Stress team (CIS team) of some form. Each participating organization agreed to provide each potential participant with a copy of the letter of introduction, consent form and survey that was stuffed into a postage paid envelope and pre-addressed to the researcher in care of her supervisor at the university.

Confidentiality

As surveys were received from participants, the researcher's supervisor separated the signed consent form from the survey and provided only the survey to the researcher. After the responses on each survey were entered into the SPSS 21 database system they were returned to the researcher's supervisor to be stored securely at the university until such time as they are to be destroyed. The database will remain on the researcher's computer and will not be destroyed. Its contents may be used for future academic projects, presentations and/or publications in the future by the researcher. It was also agreed by each participating organization that their organizational identity would not be disclosed by the researcher.

Measures

The research collected demographic data, coping mechanisms utilized by the participants (Brief Cope), information about traumatic events that caused participants to feel fear, hopelessness or horror (Nature of 911 Calls), and information about other work-related sources of stress (Other Factors). The survey also collected information on participants post-traumatic stress disorder symptomology (PTSD Checklist – Specific; PCL-S).

Posttraumatic Stress Disorder

At its core this study seeks to first determine whether and to what extent Canadian 911 operators are experiencing post-traumatic stress disorder due to work-related traumatic incidents. If they do, then what is the prevalence of 911 operators that meet the full diagnostic criteria for

PTSD? What is the prevalence of 911 operators who may not meet the full diagnostic criteria but have a total symptom score that could mean they have PTSD or some other stress related injury? Are 911 operators that likely have PTSD working in specific types of organizations or in specific positions? As well, how do the results from this Canadian group of 911 operators compare with those from the United States?

In order to answer these questions the PCL-S was utilized to measure participants' post-traumatic symptoms based on a specific traumatic event. The 911 operators were asked to think about the most traumatic call that they handled as a 911 operator and describe that call, then to read each question carefully and circle one of the numbers to the right to indicate how much they have been bothered by that problem in the past month. The Post-Traumatic Stress Disorder Checklist – Specific (PCL-S) is a test that has been utilized by the U.S. Department of Veterans Affairs: National Center for PTSD as a 17 item self-report measure of PTSD symptoms due to a specific incident (U.S. Department of Veterans Affairs: National Center for PTSD, 2012). The gold standard for a complete diagnosis of PTSD contains three parts, clinical interview, meeting DSM-IV symptom criteria and total symptom severity. A clinical interview is not possible within the context of this research, however, the use of the PCL-S as a self-administered instrument will measure whether or not participants meet the DSM-IV PTSD symptom criteria and their total PTSD symptom severity score.

Total PTSD symptom severity scores can be utilized as a screening tool to determine whether or not an individual has symptoms severe enough to be considered positive for PTSD and in the case of a research such as this, as a tool to determine rates of prevalence in a group of participants. In order to determine whether a participant is included as positive for possible PTSD or excluded based on their total symptom severity score, a cut point is created. The cut

point is the point at which a participant's total score is either included or excluded as having PTSD symptoms severe enough for a possible diagnosis. In considering the options, it was noted that Pierce and Lilly (2012) used a cut point of ≥ 28 in their first study with an $n=171$. Also according to the National Center for PTSD, "A lower cut-point is considered when screening for PTSD or when it is desirable to maximize detection of possible cases. A higher cut-point is considered when informing diagnosis or to minimise false positives" (p. 2). Thus given that the prevalence for PTSD in Canadian 911 operators is not known and the goal of this study is to include all possible cases of PTSD in the absence of a clinical interview to confirm/deny, a cut point of ≥ 28 will be utilized for all data analysis. This means that those who have a total symptom severity of 28 or higher but do not meet all the DSM-IV symptom criteria for PTSD will be included and this result can be directly compared with Pierce and Lilly (2012). As well, the prevalence rate for participants who meet all the DSM-IV criteria for PTSD will be calculated only for the purposes of comparison with Pierce and Lilly (2012).

Coping Methods

Second, this study seeks to discover what coping methods are being utilized by 911 operators when they are feeling stressed. The Cope inventory (Lazarus & Folkman, 1984) was first considered, however it appeared to be too long a testing mechanism to fit well with the length that the survey under development for this study. The most recent version of the Cope inventory is comprised of 60 scales with four items per scale according to Carver (1997), who stated that the, "... content has considerable redundancy" (p.94) and that participants became annoyed with its length. The Brief Cope was selected because it is not too cumbersome or redundant and therefore would be less likely to be ignored by potential participants. Brief Cope, developed by Carver (1997), reduces the item scale from 60 in the Cope down to just 14 scales

with two questions each and can be completed within 5-10 minutes by participants. The scales utilized are: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humour, acceptance, religion, and self-blame (Carver, nd). The Brief Cope is sufficient for the purposes of this study due to its brevity and ability to determine what coping methods 911 operators are utilizing.

Nature of 911 Calls

Third, this study seeks to discover what types of incidents 911 operators handle that cause them to experience fear, helplessness or horror, as required by the DSM-IV to meet Criterion A (2) for a possible diagnosis of PTSD. Collecting this information will add to the body of knowledge about this profession and may also assist participating organizations by providing a list of incident types that may be more likely to cause their employees distress for the purposes of education, and training for their CIS teams. Both Lilly and Pierce (2012) and Troxell (2008) used a measure that was created and utilized by Troxell (2008) in her dissertation to collect the aforementioned information from 911 operators, thus suitability, convenience and availability were the deciding factors for this measure. The Nature of 911 Calls measure contains a list of 21 items and asks participants whether or not they have ever handled each of the incident types as well as whether or not they have experienced fear, helplessness or horror at the time of the incident.

Other Factors

Fourth, this study seeks to discover what other factors may be contributing to 911 operators stress levels while they are at work. Being a 911 operator is a stressful job, however, are there other factors such as the ergonomics of their work space, call-monitoring practices, management/administration, and lack of training or poor communication among staff that may be adding to their stress? Collecting this information has two benefits, 1) it will provide this researcher with a more complete picture of what contributes to a 911 operators stress levels, and 2) this information can be provided to the participating organizations, who may discover there are changes that can be made that will be beneficial to the 911 operators that work for them. It is for these two reasons that it was decided to utilize the Other Factors measure that was created and utilized by Troxell (2008); it is a 24 item measure that includes an open ended question, ‘other – please describe’ enabling participants to include factors not on this list.

Data Analysis

Descriptive data via frequency tables and cross tabulation (bivariate analysis) were performed utilizing SPSS 21. The PCL-S was hand-scored to ascertain whether each participant met the DSM-IV symptom criteria, this was then entered into SPSS 21 as, no=0 and yes=1 and utilized to ascertain frequency. Total symptom scores for PCL-S were hand-calculated and double checked via SPSS 21, then a new variable was created by recoding the total symptom scores as $< 28=0$, and $\geq 28=1$. The PCL-S responses for each item were also entered and frequency tables for each symptom were calculated to see if there are symptoms that are more prevalent than others. A frequency table displaying both calculations of the PCL-S was performed using SPSS 21. Age and years of service were recalculated and recoded into four equal groups, then cross tabulation and chi square tests was performed to ascertain if there are

differences between participants whose total symptom PCL-S score is <28 and ≥ 28 . Frequency tables were produced for the Brief Cope based on participants total PTSD symptom severity score and table was produced showing three columns; <28 , ≥ 28 and total. Frequency tables for the Nature of 911 Calls were calculated and a table produced displaying the % of participants who have ever handled that incident type, as well as the percentage of participants who have felt fear, helplessness or horror at the time of the incident. Frequency tables were produced for the Other Factors measure and a table produced to report what incident types the participants reported causing fear, helplessness or horror. There were a number of qualitative responses to the Other Factors questionnaire, thus these were sorted by hand into categories and one quote from each category is cited in this study.

Participants

911 operators were recruited via the aforementioned prepared package that contained an introduction letter, consent form and survey provided to them by their employer. The criteria for participation had two restrictions, each participating 911 operator must be at least 19 years of age and have at least three months experience working there. Participants were advised that they may refuse to answer any questions that make them feel uncomfortable by leaving those questions blank. Included in the study were 911 operators in all possible job descriptions including, call-takers, dispatchers, chief dispatchers, supervisors, team managers and trainers or any combination thereof. The organizations were comprised of police, fire, and ambulance or any combination of the three thus participating 911 operators potentially encompassed any single or combination of current positions. As well, recruitment included all employment statuses, part-time, full-time and auxiliary/contract employees.

Results

Responses to the Survey

A total of 598 surveys were sent out to six organizations across Canada and 146 completed surveys were received (n=146) for a return rate of 24.41%.

Participants

The demographics of participants are a total n=146, with 29 males (19.9%) and 117 females (80.1%). 135 participants are Caucasian (92.5%) and 7.5% (10) are a mix of Asian, First Nations, and other nationalities with one unknown participant .7% who left that question blank. The marital status of participants was as follows; married 49.3% (72), single 24.7% (36), common law union 15.1% (22); and, separated, divorced or widowed 11% (16).

Participants reported a wide range of educational backgrounds, high school 18.6% (27), certificate 21.2% (31), technical diploma 23.3% (34), degree 32.4% (47), MA degree 4.1% (6), with one participant leaving this question blank. 144 participants provided the number of years and months they had been working as a 911 operator for a total of 1409.46 years of service and an average of 9.79 years of service.

Participants were asked about their current place of employment; 24 participants (16.6%) responded that they worked in a Regional Center but did not provide further details. One participant abstained from answering this question completely; 30.3% (44) reported working for a municipal police department, and 7.6% (11) for a fire department. 17.9% (26) reported working in a regional center, trained for municipal police only, and 14.5% (21) reported also working for a regional center, trained for fire and ambulance. The balance of participants 13.1% (19) reported working for a regional center and had been trained to work in two or more disciplines of various combinations.

Participants were asked to describe the position they were currently working in. All participants (n=146) answered this question, sometimes with more than one of the suggested responses; 24 (16.4%) of participants were call-takers; 12 (8.2%) were dispatchers, 67 (45.9%) were both call-takers and dispatchers; 7 (4.8%) were chief dispatchers; 13 (8.9%) were team managers or supervisors; 12 (8.2%) were team managers or supervisors, and dispatchers, 13 (8.9%) were call takers, dispatchers, and trainers. The remaining 10 (6.9%) were a combination of two or more of the following; call-taker, call-taker & dispatcher, chief dispatcher, and/or team manager or supervisor and trainer.

Post-Traumatic Stress Disorder Checklist – Specific (PCL-S)

134 participants completed the Post Traumatic Stress Disorder Checklist and 12 participants did not. Participants' scores ranged by 57 points from 17–74, the widest possible range is 17-85. The table below depicts the PCL-S scores in three ways; first, the participants who meet the DSM-IV symptom criteria, then second, where total PTSD symptom severity scores were re-coded into a new variable as 0 = < 28 and 1 = $\geq$ 28. This was done to enable comparison with Pierce & Lilly's (2012) research; these researchers reported an n=171 and a cut point of 28 was used. It should be noted that via personal communication with Dr. Michelle Lilly, the correct percentage for prevalence of PTSD in her 2012 research study is 9.7% (Lilly M. , 2014).

Table 1

Post-Traumatic Stress Disorder Checklist - Specific			
N=134	Frequency	Percentage	Comparison to Pierce & Lilly (2012)
Participants who meet DSM-IV symptom criteria	13	8.9	Not available
Participants whose total symptom severity score is ≥ 28	45	30.8	3.5% (Corrected to 9.7%)

There are 45 or 30.8% participants with a total symptom severity score of 28 or greater, and 34 or 75% are female and 11 or 24.4% are male. The vast majority of this group are Caucasian 40 or 88.9% with the remaining 5 or 11% comprised of Asian, First Nations or Other nationalities. 26 or 57.8% are married, 10 or 22.2% are single, 5 or 11.1% are in a common law union, and 4 or 8.8% are either separated or divorced. As well, they range in age from 23-57yrs, years of experience ranges from .67 – 30 years and in education; 11 have high school, 9 have a certificate, 11 have a technical diploma, 12 have a degree, and 2 have a master's degree.

A cross tabulation between grouped ages and PCL-S total symptom severity score of 28 or higher was conducted to ascertain if there is one or two age groups that appear to have a higher prevalence of PCL-S scores. A chi square was conducted and there is no significant difference at the .05 level, possibly due to the small sample size.

Table 2

Comparison of ages - PCLS Total symptom severity scores ≥ 28			
	PCLS Score ≥ 28, n=45		All Participants, n=146
Ages Grouped	Frequency	Percent	Percentage Totals
20-29 years	4	8.89	21.2
30-39 years	21	46.66	34.31
40-49 years	13	28.9	26.0
50-61 years	7	15.55	18.49

A cross tabulation between grouped years of service and PCL-S total symptom severity score of 28 or greater was conducted to ascertain if there are one or more groups that appear to have a higher prevalence of PCL-S scores over 28. A chi square test was done and while there is no significant difference at the .05 level, likely due to small sample size, it is clear that there are significantly less participants' in this study that have more than 11 years of service.

Note that when the years of service for participants in this study were grouped, there is a distinct drop off between participants with less than 11 years of service, 93 or 63.6% versus 51 or 34.9% of those with 11 to 32 years of service. Given that the attrition rate for this profession is general perceived to be high, there is a need for further research to determine whether this has anything to do with stress or the traumatic experiences involved in this career.

Table 3

Comparison of years of service between those with PCLS Total symptom severity scores ≥ 28 and < 28					
	PCLS Score ≥ 28		PCLS Score < 28		
Years of Service Grouped	Frequency	Percent of n=146	Frequency	Percent of n=146	Total percentages
0-5.99 years	13	8.9	39	26.7	35.6
6-10.99 years	17	11.6	24	16.4	28.0
11-15.99 years	9	6.2	12	8.2	14.4
16-32 years	6	4.1	24	16.4	20.5

The 45 or 30.8% of participants with a total symptom severity score of 28 or greater work in a variety of different types of organizations; 16 or 35.6% work for a municipal police department, 12 or 26.7% work for a regional center trained to do both fire and ambulance, 6 or 13.3% identified as working in a regional center but did not identify for which discipline, and 7 or 15.5% work in a regional center trained to work in a variety of different combinations of disciplines.

The 45 or 30.8% of participants with a total symptom severity score of 28 or greater work in a variety of different positions; 7 or 15.6% are solely calltakers, 20 or 44.4% are both calltakers and dispatchers, 2 or 4.4% are chief dispatchers, 4 or 8.9% are team managers or supervisors. As well, 12 or 26.6% are a combination of any three of the following possible choices; calltaker, dispatcher, chief dispatcher, team manager or supervisor, trainer. A chi square test was conducted and none differ from each other significantly at the .05 level, again possibly due to the small sample size.

Prevalence of PTSD Symptoms

On the PCL-S checklist a PTSD symptom is counted as being present if it is reported as moderately or higher. Therefore, the symptoms reported as moderately or higher for all participants with a PCL-S score of ≥ 28 and < 28 were calculated via cross tabulation to ascertain which symptoms are more prevalent. Results are shown in descending order by frequency in the ≥ 28 column in the table below:

Table 4

PCL-S Symptoms Participants with a score ≥ 28 and ≤ 28 , who reported as Moderately, Quite a bit or Extremely				
	≥ 28		< 28	
Symptom	Frequency	Percentage	Frequency	Percent
Feeling very upset when something reminds you of the stressful experience	31	68.9	9	10.1
Feeling irritable or having angry outbursts	30	66.6	2	2.2
Repeated disturbing memories thoughts or images of the stressful experience	29	64.4	8	8.9
Having difficulty concentrating	26	57.8	1	1.1
Being super alert or watchful or on guard	26	57.8	6	6.7
Avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it	25	55.6	7	7.9
Trouble falling or staying asleep	24	53.4	3	3.3
Having physical reactions (eg., heart pounding, trouble breathing, sweating) when something reminded you of the stressful experience	21	46.7	5	5.6
Feeling jumpy or easily startled	20	44.5	0	0
Feeling distant or cut off from other people	18	39.9	0	0
Feeling emotionally numb or being unable to have loving feelings for those close to you	16	35.5	0	0
Feeling as if your future will somehow be cut short	16	35.5	0	0
Avoiding activities or situations because they remind you of the stressful experience	14	31.1	0	0
Trouble remembering important parts of the stressful experience	13	28.8	3	3.4
Suddenly acting or feeling as if the stressful experience were happening again, as if you were reliving it	12	26.6	1	1.1
Loss of interest in activities that you used to enjoy	9	20.4	1	1.1
Repeated disturbing dreams of the stressful experience	9	20.4	1	1.1

Brief Cope

Results below are listed in the descending order by the totals in the fourth column. On the questionnaire, participants were asked to rate their participation in each item via a Likert scale of, 1 = I usually don't do this at all, through to 4 = I usually do this a lot. Responses of

I usually do this a medium amount, and I usually do this a lot, were calculated for each group on the PCL-S total symptom severity scores, plus the total for all participants.

Table 5

Brief Cope Percentages of responses to ‘a medium amount’ and ‘a lot’ for PCL-S Score Totals of 28 or greater and Under 28 and Total			
	<28 n=101	≥28 n=45	Total n=146
I take action to try to make the situation better.	89.1	86.7	88.4
I accept the reality of the fact that it has happened.	90.1	77.8	86.3
I concentrate my efforts on doing something about the situation I am in.	88.1	77.8	84.9
I think hard about what steps to take.	79.2	82.2	80.1
I try to come up with a strategy about what to do.	79.2	71.1	76.7
I express my negative feelings.	72.3	75.6	73.3
I learn to live with it.	73.3	71.1	71.8
I criticize myself.	64.4	80.0	69.2
I look for something good in what is happening.	65.4	64.5	65.1
I turn to work or other activities to take my mind off things.	60.4	64.4	61.6
I try to see it in a different light, to make it seem more positive.	54.5	62.3	56.8
I get help and advice from other people.	64.3	31.1	54.1
I get emotional support from others.	56.5	42.2	52.0
I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.	49.5	55.6	51.4
I get comfort and understanding from someone.	53.4	44.5	50.6
I make fun of the situation.	48.5	53.3	50.0
I make jokes about it.	44.5	57.8	48.7
I try to get advice or help from other people about what to do.	54.5	28.9	46.6
I blame myself for things that happened.	37.6	53.4	42.5
I say things to let my unpleasant feels escape.	32.7	31.1	32.2
I use alcohol or other drugs to help me get through it.	19.9	35.5	24.7
I give up trying to deal with it.	15.9	35.6	21.9
I try to find comfort in my religion or spiritual beliefs.	16.8	31.8	21.4
I use alcohol or other drugs to make myself feel better.	14.9	28.9	21.3
I give up on the attempt to cope.	12.9	33.3	19.1
I pray or meditate.	14.8	24.5	17.8
I refuse to believe that it has happened	11.9	18.9	13.8
I say to myself “this isn’t real.”	8.9	24.5	13.7

Other Factors

The table below displays factors that may contribute to stress for 911 operators and is displayed in descending order. On the questionnaire, participants were asked to rank each item on a Likert scale, 1 = not at all through to 5 = extremely. Responses of 3 = moderately through 5 = extremely were calculated as both frequency and percentage.

Table 6

Other Factors		
n=146		
Other Factor	Frequency	Percent
Constantly changing policies	99	67.8
Scapegoating of the communications center	79	54.1
Management/Administration	75	51.4
Lack of appreciation from management	72	49.3
Poor Equipment	70	47.9
Poor communication among staff	66	45.2
Scheduling time off	66	45.2
Lack of closure about an incident	64	43.8
The public	62	42.4
Co-workers	62	42.4
Personal conflicts at work	58	39.7
Lack of follow-up after a stressful incident	58	39.7
Lack of understanding of what 911 operators do	57	39.0
Lack of training	54	37.0
Lack of input on new hires	51	34.9
The media	51	34.9
Call-monitoring practices	49	33.6
Ergonomics	49	33.5
Performance evaluations	44	30.1
Poor supervision	39	26.7
Treatment from others during stressful events	35	24.0
Inadequate compensation	31	21.2
Other, described below	25	17.1
Sexual harassment	1	.7

In response to the open-ended question of, ‘other, please describe’, several respondents referred to the same concern about human resources issues, thus they are listed only once. In the quotes below there are occasionally three periods ‘...’ followed by more quote, this is done to show that sections of the participants writing have not been included. The portions not included were removed to protect the identity of the respondent or the organization:

“Group Slaps”

“I feel too guilty to call in sick.”

“Extra work from other departments piled up on us in between 911 calls.”

“Respect from 'some' in uniform, officers.”

“Toxic people, sickness levels by some co-workers. You know exactly when someone is going to be sick.”

“Shift work, lack of breaks, hours worked, unfair assignment of overtime, staffing levels, too short staffed, not being paid on time for overtime ... duration of shift... lack of discipline...”

“Lack of input on operational policies... Inconsistency in applying policies/procedures on teams, creating conflict both internal and external whether perceived or real... focus is on negative outcomes, always.”

“Lack of management support, tokenism, asking for feedback but not listening, management changing rules when convenient for them... management who are clueless – do not hire bank call center managers for example... No leadership.”

“Sometimes the situation that creates the most stress within our environment is how coworkers treat each other... drama and gossip create more internal conflict than what the job creates.”

“Job security, after nearly 5yrs I am still not a permanent employee. Also no annual leave or benefits or sick days as a term employee.”

“Management is more likely to discipline you first for a call, threaten you with job loss, instead of being of any support. Only those that wear stripes are considered knowledgeable and yet we know this is far from the truth. We need help. I am burned out at times, depressed and probably border on PTSD. 1 hour break in a 12hr shift is not enough. Only option is 12hr shifts, need other options but management refuses. Tells us to bring in doctors note - STIGMA attached to that!”

“History - de-faced in media onslaught - zero debriefing, bomb scare in building - not evacuated - zero debriefing, fire on roof - not evacuated - zero debriefing, was lied to about there being a fire, flooding - zero debriefing, each person/team should have mandatory debriefing, not - well if you want.”

“Two officers committed suicide - zero debriefing, 911 operators are forgotten when it comes to work related stress, depression, PTSD.”

Nature of 911 Calls

In the table below, the incident types are listed in descending order based on having felt fear, helplessness or horror in the far right column.

Table 8

Nature of 911 Calls that caused Participants to feel fear, helplessness or horror, n=146		
Incident Type	% of Participants who have ever handled this incident type	% of Participants who felt fear, helplessness or horror
Traffic accidents	91.8	34.9
Death of a child	65.1	32.9
Domestics	84.9	24.0
Sexual assault of a child	63.7	23.3
Natural disasters/severe weather	73.3	21.2
Calls involving children with severe injury	61.7	21.2
Officer, firefighter, paramedic injured	54.1	21.2
Suicidal caller	88.4	20.5
Shots fired	67.1	18.5
Structure fire	84.9	16.4
Calls involving your family or friends	41.1	16.4
Other highly disturbing calls, specify	19.9	15.1
Homicide	58.2	14.4
Armed robbery	69.2	9.6
Barricaded subject (police stand-off with subject)	54.1	6.8
Line of duty death	12.3	6.2
Hostage situation	26.7	5.5
Officer shot – injured	13.7	5.5
Plane crash	24.7	4.8
Pursuits	61.0	4.1
Riots/mob action	21.2	1.4

Below is a comprehensive list in alphabetical order of the call types that participants listed as being ‘other’ highly disturbing types of calls during which they felt fear, helplessness or horror. Some were the same and thus are only listed once.

- Animal abuse
- Attempted murder
- Cardiac arrests
- Child missing
- Child suicides
- Drowning, water rescues and remote area rescues
- Elderly/mentally ill missing
- Elderly/mentally ill violence/abuse
- Elderly/mentally ill emotional calls
- Families discovering other family members deceased
- Gang shootings
- Home invasion
- Many with a gun at a school
- Multiple homicide

Discussion

This non-random study was based on self-selection and involves a total of 146 participants, and therefore it cannot be said to be representative of the entire population of Canadian 911 operators. The results represent 24.41% of all the 911 operators working at the participating organizations and thus it can be said to be a significant starting point in what will become ongoing academic research of this very secluded population of 911 professionals. It has been confirmed with Dr. Jeff Morley of Frontline Psychology that no participants contacted him to ask for assistance due to being negatively affected as a result of participating in this study. It is not known if any participants contacted their respective Employee Assistance Programs.

Post-Traumatic Stress Disorder Checklist – Specific (PCL-S)

There is a significant difference between participants in this study with a total symptom severity score over 28, (30.8%) and that of Pierce and Lilly (2012) of 3.5%, corrected to 9.7% (Lilly M. , 2014).

Prevalence of PTSD Symptoms

On the PCL-S questionnaire, just 29 participants reported a baseline score of 17, meaning they are not experiencing any PTSD symptoms in relation to the traumatic incident reported at the top of the questionnaire. This in turn means that 117 participants reported experiencing at least one of the symptoms on the PCL-S. So in answer to the question, do 911 operators suffer from PTSD symptoms due to listening to the trauma of others, the answer is yes, many of them do, and in this study 80.14% of all participants reported experiencing at least one PTSD symptom.

The prevalence of PTSD symptoms (total symptom severity score) in Canadian 911 operators who participated in this survey is 30.8%. This is higher than both Pierce and Lilly (2012) and the reported prevalence of 24.6% with a cut point of 44, by Lilly (Personal correspondence, 2014) who has amassed data from 808 American 911 operators for her as yet unpublished current study. The higher percentage rate in this study could be due to the self-selection participation of 911 operators in this study and/or the small sample size.

The top eight most prevalent PTSD symptoms reported by participants with a symptom severity score ≥ 28 are; 68.9%, feeling very upset when something reminds you of the stressful experience; 66.6%, feeling irritable or having angry outbursts; 64.4%, repeated disturbing memories thoughts or images of the stressful experience; 57.8%, having difficulty concentrating; 57.8%, being super alert or watchful or on guard; 55.6%, avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it; 53.4%, trouble falling or staying asleep; and, 46.7%, having physical reactions when something reminded you of the stressful experience.

Marshall (2003) conducted research on police officers as part of her doctoral dissertation and reported some of the individual PTSD symptoms as follows; 74% of police officers experienced, “recurring memories” (p. iv) while a further, “... 62% experienced recurring thoughts or images” (p. iv); 54% of police officers, “... avoid reminders of an incident” (p. iv); and, 47% of police officers experience, “flashbacks” (p. iv).

Brief Cope

The most often used coping method by participants in this study is the item, I take action to try to make the situation better, with 129 or 88.4% reporting that they use this method a medium amount or a lot. This is a significant number of 911 operators however, it also means that 17 or 11.6% reported that they are not utilizing this coping method at all or only a little bit.

There are two questions that involve the use of alcohol or other drugs, 1) to help me get through it, and 2) to make myself feel better. At first glance of the table, some may believe that the same 9 participants answered either, a medium amount or a lot, to both of the aforementioned questions; however, upon seeing that these two sets of answers were exactly the same, this researcher went and took a look in the database and this is not the case. In total, 36 or 24.7% of all participants reported using alcohol or other drugs, ‘to help me get through it’ either a little bit, a medium amount, or a lot. As well, 31 or 21.3% of all participants reported using alcohol or other drugs, ‘to make myself feel better’ either, a little bit, a medium amount, or a lot.

The coping method item, I criticize myself, is the most significant with 69.2% of all participants reporting that they do this, a little bit, a medium amount, or a lot; 80% of participants with a total symptom severity score ≥ 28 . Cox, MacPherson, Enns, & McWilliams (2004) conducted a study to discover whether or not neuroticism and self-criticism are associated with PTSD. Results from this study, “In separate regression analyses, elevated levels of neuroticism

and self-criticism were each significantly associated with PTSD among men and women who had experienced one or more traumatic events” (p. 105). Cox, et al (2004) describe self-criticism as being, “... characterized by feelings of worthlessness and guilt, and a sense that one has failed to live up to expectations” (p.107). Due to the cross-sectional method of their study, it is not known whether neuroticism and self-criticism are causal to the increased risk of developing of PTSD or an expression of its presence (Cox, et al, 2004).

Other Factors

On the ‘other factors’ section of this survey, responses of, moderately, quite a bit and extremely were added together. With the exception of sexual harassment, inadequate compensation, treatment from others during stressful events, and the open-ended ‘other’ questions, every other item on this scale returned a result rate of 26.7% or higher. This is a significant indicator of the factors that contribute to stress for the participants of this study. The factors that had a return rate of higher than 45% are personal conflicts, poor communication between staff, poor equipment, and management/administration, constantly changing policies, scapegoating of the communication center, and scheduling time off.

Each of the 13 quotes shown in the results section are responses directly from the participating 911 operators to the question of ‘other, please describe’. These quotes represent the words of the majority of participants who responded to this question and they have serious concerns related to one or more of the five topics their words represent. Most notable is this one, “Management is more likely to discipline you first for a call, threaten you with job loss, instead of being any support...we need help...”

Nature of 911 Calls

There can be much debate over what types of calls ought to be listed as potentially causing fear, helplessness or horror for 911 operators and what we collectively must realize is that what qualifies as such is different for each individual person. In other words, there is no right or wrong answer, and none ought to be minimized as being trivial; they certainly were not for the people calling 911, and the 911 operators had no choice but to listen to the callers' distress. In the words of one 911 operator who participated in this study, "You would and should feel at least helpless in all these calls, that is only human and healthy."

Limitations

There are several difficulties in collecting data from Canadian 911 operators. This includes obtaining the participation of organizations, getting access to operators and convincing them to participate. The process of self-selection by 911 operators likely led those who were concerned about posttraumatic stress disorder to be more likely to respond. Due to the small sample size, the results of this research are not generalizable to the entire population of 911 operators in Canada and thus future research is warranted in order to seek a stable rate of prevalence of PTSD within this population of professionals.

Conclusion

In conclusion, this research has shown that the Canadian 911 operators who participated in this study do suffer from PTSD symptoms due to their experiences with the traumatic incidents of others. In this study, the prevalence of PTSD total symptom severity rate is 30.8% and 8.9% of all participants meet the PTSD criteria for possible PTSD diagnosis according to the DSM-IV. The aforementioned rates are based on the PTSD symptoms participants reported to be, 'bothered by that problem in the past month', at the time they completed the questionnaire.

The PTSD total symptom severity rate of 30.8% in this study does not account for how they may have felt in the days/months following a traumatic incident, or how they may be bothered by PTSD symptoms now. Further research is warranted in order to discover what the prevalence rate is for all Canadian 911 operators. There are many other factors that affect the level of stress experienced by the participating Canadian 911 operators in this study and the participating organizations can use these results to make internal improvements alongside their education/training programs to create less stressful working environments for their 911 operators. The information on the nature of the calls that are most likely to cause fear, horror or helplessness among 911 operators can be utilized by participating organizations to educate their CIS teams so that internal prevention supports can be provided without 911 operators having to ask for them. This study has established that 911 operators who participated in this research are exposed to calls that cause feelings of fear, helplessness or horror, therefore it is possible that the resulting stress, as suggested by Pierce & Lilly (2012), can impair their decision-making abilities and functioning and result in a significant risk to those who rely on emergency services.

In conclusion, this study has a number of important implications for a critical discussion of the post-traumatic stress experienced by some Canadian 911 operators while at work. There is a need to continue to build a body of knowledge regarding this specific profession and the challenges and issues expressed by the participating Canadian 911 operators of this study. Moreover, the implications for this research are that there is much to learn about this unique profession, specifically, the psychological distresses it can cause for 911 operators in their critical role as first of all the first responders.

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