

**WHEN DISASTER STRIKES:  
INDUSTRIAL DISASTER IN A NORTHERN SINGLE INDUSTRY  
COMMUNITY**

by

**Brenda Smith**

B.S.W., University of Northern British Columbia, 2001

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SOCIAL WORK

UNIVERSITY OF NORTHERN BRITISH COLUMBIA

May 2016

© Brenda Smith, 2016

### **Abstract**

The purpose of this research is to explore support services offered to onsite employees post-industrial disaster. A local mill exploded in the community of Burns Lake, British Columbia (B.C.), located approximately 250 km west of the northern capital, Prince George, B.C. Burns Lake is both a northern community, and a single industry community. This research explores supports and services that were helpful to employees after the mill explosion, as well as supports and services that were entirely lacking. For some, the consequences of surviving the explosion brought on new challenges of living with Posttraumatic Stress Disorder (PTSD) and trauma related issues. Using a case study approach, this thesis describes the supports and gaps in services post-industrial disaster. The findings offer in detail, a potential protocol, suggestions for treatment and support for the survivors of an industrial disaster, supports for spouses, and the support for community at large when a disaster strikes.

## TABLE OF CONTENTS

Abstract	ii
Table of Contents	iii
Acknowledgement	vii
Chapter One:	
Overview: Background of the Study	2
Researcher Location	4
Purpose of the Research	8
Research Rationale	12
Research Question	14
Definitions	14
Conceptual Lens	18
Summary	19
Chapter Two:	
Literature Review: Introduction	20
Disaster	20
Global Industrial Disasters	22
Canadian Industrial Disasters	25
British Columbia Industrial Disasters	26
Emergency Social Services	28
Burns Lake Industrial Disaster	31
Post-Traumatic Stress Disorder (PTSD)	31

iii

	Summary	37
Chapter Three:	Methodology: Qualitative Approach	38
	Case Study	40
	Ethical Considerations	42
	Recruitment Strategies	44
	Data Collection	45
	Confidentiality and Anonymity	49
	Methods	50
	Data Analysis	51
	Meta-Analysis	56
	Summary	58
Chapter Four:	Findings	59
	Thematic Findings	60
	Contact and Information Sharing	60
	Resiliency	63
	Withdrawal	65
	Closure	67
	Anger	69
	Lack of Resources	71
	Timing	74

	Supports	77
	Meta Themes	
	Immediate	83
	Short-term	90
	Long-term	97
	Summary	102
Chapter Five	Discussion, Implications, and Recommendations	
	Purposed Outcomes	103
	Discussion	103
	Limitations	104
	Recommendations and Implications for	
	Social Work Practice	106
	Provincial Trauma Protocol and	
	Information Sharing	109
	Trauma Specialist	110
	Training in the North	113
	Group Debriefing	114
	Partner's Mental Health	115
	Support Group	115
	Media	116
	Informing, Educating and Involving Community	117

	Further Research	118
	Learning and Experience Gained as a Researcher	119
	Summary	120
References		123
Appendix A	Interview Questions: Onsite Employee	138
Appendix B	Interview Questions: Spouse (Partner)	140
Appendix C	Letter to Service Provider	142
Appendix D	Research Information Letter and Consent Form for Onsite Employees, and Spouses (partners) of Onsite Employees	146
Appendix E	Questionnaire for Service Providers	153
Appendix F	Research Ethics Board Approval Letter	157
Appendix G	Certificate of Completion: Tri-Council Policy	158
Research Poster		159

### **Acknowledgement**

To the Babine B shift, those that were onsite the night of the explosion, I am honored to have met you, to have heard your stories and for the insight I have gained from you. To those who shared their knowledge, experience and time towards the completion of my thesis, I acknowledge your bravery, openness, and honesty.

## **Chapter 1: Overview**

### **Background of the Study**

On January 20, 2012 the residents of the community of Burns Lake, located in northern British Columbia experienced tremendous trauma when their primary industry, Babine Sawmill, exploded into a massive ball of fire, catapulting the roof right off the building. There were approximately 35 onsite employees in the mill that night, with the explosion killing two people and injuring 20 more. This disaster reached far beyond the 35 people directly impacting many families in the Burns Lake community. The explosion resulted in local people becoming suddenly unemployed such as contractors, Babine staff, and the offsite workers. Community members lost their livelihood, knew someone who was injured or died, and felt the devastation within their community. Indirectly, many more local businesses, recreational clubs, counselling services, and support services, were affected. The population of Burns Lake is just over 2700 (Village of Burns Lake, 2013).

The impact to each community member was diverse and those most affected were the onsite employees. For most onsite employees, Post-Traumatic Stress Disorder (PTSD) developed from that trauma. Combatting anger, fear, night terrors, drug and alcohol misuse, depression, domestic violence, and suicidal ideation required strategic planning with specific services and programs (Breslau, 2002). For example, Jamieson (2013) expressed that shock can last up to three or four months after a traumatic incident occurs. Once shock subsides, with or without treatment, the emotional wounds start to appear (Shehan, 1987). The psychological and emotional



damage can take time to heal, with “each person and each crisis situation [being] different” (Gilliland & James, 1997, p. 19).

It is important to consider the environment in which the crisis took place. The guiding ideology for this study follows notions from the contextual-ecological model (CEM) such as focusing on what occurred, where it occurred, how it occurred, and what systems failed leading up to the crisis and post-crisis. A few of the ideological concepts which are pertinent include how to work within systems, post-crisis, as well as, “understanding that no single component can be considered separately” (James & Gilliland, 2013, p. 18). A fitting example presented by James and Gilliland (2013) is that there is a reciprocal interaction between primary relationships such as a company and an employee. If there is a crisis at the workplace in which employees are involved, it is essential that the company immediately complete efforts to acknowledge and support employees and reassure them that safety precautions are at the forefront. This in-turn demonstrates to employees that the employer has acted diligently, ensuring safety is a priority. In this example, acknowledging the employer’s response, other individuals or agencies’ involvement and their actions taken prior to the crisis, should then be analysed. It is prudent to recognize and address how these systems, such as the employer, either contribute positively or negatively to the overall wellbeing and recovery of the onsite employee, post-industrial disaster. Stated clearly in the literature is the reality that some people struggle to move forward in the recovery process (Hollon, Thase, & Markowitz, 2002). Every person affected has a rendition of how this tragedy changed their life.

The onsite employees of the Babine Mill provide rich descriptions, real examples, and experiences of what helped them to move past the Burns Lake industrial disaster and survive with post-traumatic stress disorder. The existing services in Burns Lake became quickly overburdened and as a community member I was able to see how the community and existing services struggled.

### **Researcher Location**

It is important for a researcher to locate or position themselves in their research. This can assist in the understanding of possible assumptions and biases that may be present (Absolon & Willett, 2005; Strega, 2005). I identify as a middle-aged, Caucasian, heterosexual, female with children at home and view myself as privileged as I own my own home and provide for my family. I am spiritual, able bodied, and feel a connection to nature. My experience with Burns Lake began 14 years ago when I moved to the community to begin a relationship with a forester who worked at Babine Forest Products in the Woodland's department. I am a social worker and have mainly worked for the Ministry of Children and Family Development. This professional position instilled a sense of accountability and transparency in my interactions with people in the community.

Living most of my life in larger communities, it surprises me that a northern community of less than 3000 people had such an impact on my personal life as well as my professional life. For example, having hands-on interactions with Indigenous peoples, taught me so much about culture. There are six Indigenous bands within the Burns Lake area: Wet'suwet'en First Nation, Lake Babine Nation, Cheslatta, Burns

Lake, Skin Tyee, and Nee Tahi Buhn. I connect to some traditional Indigenous practices and I am fascinated to learn as much as I can about Indigenous culture because I feel a spiritual kinship when I participate. I smudge, sweat, hunt, eat moose, and fish the Skeena River in Terrace, B.C. I have a salmon dance that I do on the sandbar when fishing is slow. When I first started my salmon dance my family cringed but now they ask me to dance. Throughout my time in the north, I explored and learned about energy connections to earth and people. I now believe in these energy connections and most importantly I believe in the power of community.

Over the years, I have come to realize that sometimes the needs of a client may not align with the policy and mandate of an agency. This divergence leads me to wonder how this affects a client's recovery. Analyzing policy that can delay the progress of a clients' mental health is an important aspect to consider when working with individuals or groups. I believe that systems established to support the mental health needs of clients may often hinder a clients' ability to heal and move forward.

For some people, maintaining a connection with others based on mutual ideology, norms, traditions, culture, or beliefs, leads to a sense of purpose and connection. I believe one of my personal strengths is the ability to handle and problem-solve issues affecting community members. For example, supports were put into place immediately after the mill explosion and trained crisis and trauma professionals came to Burns Lake. As a social worker, I saw a gap in the available services and responded quickly. I created, implemented, and facilitated a Support and

Information Group (SIG) with no organization affiliation or financial support. While facilitating this group, trauma counsellors from another organization called me for feedback on how to recruit onsite employees to participate. They had offered a weekly group for 8 weeks and not one individual attended.

I believe that communities hold the answers for many of the social issues plaguing society. The process of joining with others promotes empowerment, to address politically oppressive systems and structures (Mullaly, 1997). I have no hesitancy in acting as a voice and advocating for change. I have a great ability to mobilize people and delegate duties.

One of my personal philosophies is that timing can be a positive tool. The main principle around timing is feeling interconnected with people and things, on an energy level. This can also be seen as being in sync with universal energy. Have you ever known, instinctively, that you are exactly where you are meant to be? Do you ever feel a tightening in your stomach or understand that, “gut feeling,” where you just know it is the right choice and everything falls into place for you? I believe this is the essence of timing, to believe that personal energy is sent out as a vibration, and that others can connect with that energy. For example, returning to the University of Northern British Columbia (UNBC) after 12 years, was stressful. I lived in a community two and a half hours away, and had young children at home. Through all the challenges of going back to school, I had a sense of knowing that the timing was right as planning, travel, and finances came together with ease. I learned over the

years what it feels like to merge with universal energy; that intertwined connectedness with time and others. Some have called this interaction serendipity or the universal laws of attraction; what we focus on expands. For example, Zapf (2009) explains that psychology has strong ties with, “transaction and interrelationships” (p. 140) between humans and places. Some traditional Indigenous ideology focuses on the integration of earth and connections to animals as a way of life, and belonging, “with a strong emphasis on the land and concepts of place” (Zapf, 2009, p. 181-182). When aligned with universal energy, people can experience a seemingly easy and positive interaction.

More specifically, Linn (1995) describes that, “all life is energy” (p. 4), that there are energy connections amongst people, places, and things. That people are constantly sharing energy, creating a connectedness and timing. A recent personal example of this interconnectedness transpired during a road trip to Tumbler Ridge, B.C. My father and I stopped at Bijoux Falls to feed the Steller’s jays. There were six separate washrooms onsite, and the one I selected had a \$5 bill and a note taped to the inside of the door. When I closed the door I could see my prize. The note read, “your needs are abundantly met, always trust the universe”. I took the message and \$5, not for the money, it was the motto that was my winnings. I left the message taped to my dashboard for 2 days, contemplating where I should leave it for the next person. I knew that I was a conduit to pass this energy on. It is because of experiences such as this, that I have accepted this energy in, to find its place in my life; I *feel* the connection in my spirit.

My eclectic personal ideologies and practice also create my professional practice. I have experienced enough to know when an instrument is a good fit. I expand on concepts through research and hands on experience. These concepts include but are certainly not limited to: Indigenous traditions, appropriate fit of practice, timing, energy, and the power of community. I correlate this concept of universal timing, to the basic *recovery* principles of Post-Traumatic Stress Disorder (PTSD); timing, energy, and connection. Following is figure A.2, depicting one of my personal philosophies.



Figure A.2

*"I believe that my path and journey in life is set before me. Through choices and consequences, detours happen and it is then that I learn the most".*

*Brenda Smith 2013*

Photograph  
by M.  
Barnes  
(2016)

*Twilight's  
Folly*

### **Purpose of the Research**

The purpose of this research is to expand on the available literature that addresses mental health support services following an industrial disaster. Additionally, the purpose of this study is to explore what services were beneficial to injured workers recovering from PTSD post-industrial disaster and why those services worked. It is important to strive to strengthen the social fabric of the

community by joining people and systems together, known as meso-systems. Equally significant, is identifying the fragmented systems that fail to reinforce that fabric by cutting away supports, including a sense of collectivism (Collier, 2006). James and Gilliland (2013) explain that, “communication between human beings operating in different systems becomes problematic,” when key components are missed such as identification of what systems are involved. Equally important is the functioning of those systems and how they influence the mental health concerns attached to the disaster (p. 651). Systems Theory, “is based on the assumption that matter, in all of its forms, living and non-living, can be regarded as systems and that systems, have certain discrete properties that are capable of being studied” (DuBois & Miley, 2007, p. 55). For helpers, it is important when supporting people, to understand what systems are helpful and which hindered recovery. For example, most people living in Burns Lake spend time in the outdoors and most people who stay in the north do so because they enjoy the natural beauty of the north. For some, a connection with nature can be therapeutic for individuals and an important system in recovery.

There are many systems a survivor of an industrial disaster may utilize such as micro-systems including: extended family, the Church, recreational or sporting activities, as well as connections with the general population in the community. More formal support systems in northern communities can be taxed and in some ways ill-equipped to handle such a disaster. For example there were limited mental health supports in Burns Lake post-explosion. This meant for some, accessing counsellors/psychologists in urban centers; a six hour drive, roundtrip, to receive

these services. Exo-systems in which the Burns Lake community members experienced were: job fairs, training sessions and open forum community meetings. Macro-systems included government financial compensation, while the Health Authorities provided physical treatment. A macro-system failure that was not addressed was the importance of the mill management to receive the training on PTSD because they would be working with affected onsite employees. Also, the community members never received any information sessions on the impact of PTSD, and tools to support the survivors. Without understanding the full impact, the symptoms of PTSD can be elevated. This means that with education and training, these macro-systems (Babine Mill and the Burns Lake community) could have become a supportive environment based on understanding.

The focus of this study is to critically analyze the experiences people have with trauma, and to portray a general understanding of those experiences, as well as the supports around those experiences. Humans can be altered by disaster, and so can systems and the physical environment.

The following figure (A. 1.) outlines the interaction an individual may have with various systems in their life. Microsystems are the most intimate of systems such as family, friends or support groups and mesosystems depict the interactions between these microsystems. Exo-systems are broader groups which support society at a community level, such as job fairs or public forums. Finally, macro-systems can be laws or ideologies (DuBois & Miley, 2007). It is important for these systems to be working in a positive fashion for each individual.



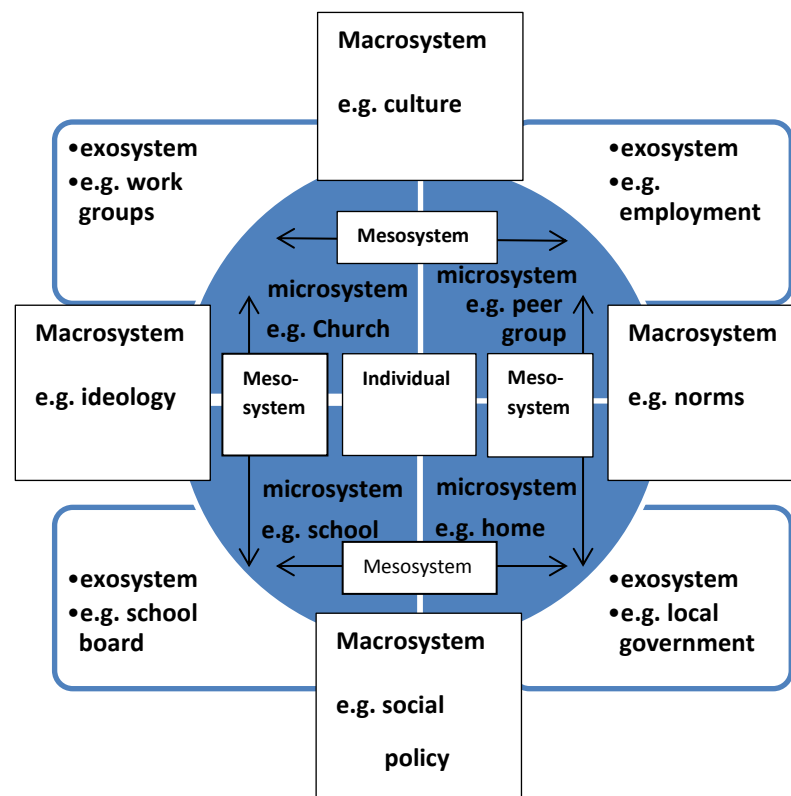


Fig. A.1

Systems  
Interaction

Information from  
Dubois & Miley  
2007

Visual created by  
Smith, B. 2013

When the explosion transpired in Burns Lake, other mill workers and their micro and exo-systems may have changed because of the explosion. For example, in 2012, when two different mills located in British Columbia (B.C.) exploded, millworkers across B.C. may have realized the potential for an explosion in their own mill. This realization may have affected their sense of safety in their day-to-day work in the mill or increased levels of workplace stress impacting personal relationships.

DuBois and Miley (2007) state that, “change at the macrolevel will filter through all system levels, resulting in the potential for change” (p. 70). Some of the primary systems of support are the family unit. Adding to these systems (micro, meso, exo, macro) are the realities that living in the north can invite, such as isolation,

poor weather and road conditions, lack of services and resources (Collier, 2006; Delaney & Brownlee, 2009; DuBois & Miley, 2007; Schmidt, 2008). When addressing the issues of living in the north, DuBois and Miley, (2007) suggest that, “because social problems are caused by some systems being out of tune with one another, the solution to the problem is to fine-tune these systems and restore equilibrium” (p. 70). In light of the above model, this research will explore what supports and services were lacking because of the mills northern location. It takes creativity to organize support programs when resources are limited. Gathering information from participants, who survived a northern industrial disaster, can help guide response plans in the future in northern areas, such as this research has regarding trauma related issues.

### **Research Rationale**

Literature indicates that when a person is suffering from PTSD, the more the spouse knows about PTSD, the more likely the spouse is to respond appropriately to the manifestation of negative symptoms or behaviors (Shehan, 1987). For example, educating a spouse on expected behaviors and triggers for the survivor, while training the spouse on how to respond with positive communication strategies, can be an asset. Treatment for PTSD means meeting the conditions and behaviors as they appear for an individual; timing is everything (James & Gilliland, 2013). Most people move on from trauma quickly while others do not (McNally, Bryant, & Ehlers, 2003). My research suggests that there is not a singular model to follow for survivors of disaster and that each individual manifests symptoms of PTSD differently and at

different times. However, building specialized supports around the person, when the timing is right, contributes greatly to the reduction of PTSD symptoms and conditions (James & Gilliland, 2013; Jamieson, 2013; Marshall, Phillips, & Williamson, 2011; Shehan, 1987). The best defence against long-term PTSD is for micro systems and both provincial and local mental health systems to provide the individual with wraparound supports. The symptoms of PTSD may ebb and flow rather than be predictable, so diverse programs and services often need to be utilized, created, or implemented. In my experience working in Burn's Lake, a key element in the recovery process for people requesting assistance is for social workers to build and maintain supports and services within the community. This type of, "healing may therefore be strategically described as a process of removing barriers and building capacity of people and communities to address the detriments of health" (Lane, Bopp, Bopp, & Norris, 2002, p. 19). Therefore, the best place to begin is with the community itself.

There are many studies on the complexities of PTSD providing solid descriptions, an array of symptoms, and even recommended treatment (Breslau, 2002; Carlson, et al., 2002; Degloma, 2009; Hollon, et al., 2002; Marshall, Phillips, & Williamson, 2011; McAllister, 1999; Shehan, 1987). There are copious amounts of literature on industrial disaster, but most are from countries outside of Canada, and I could not find any articles on industrial disasters specific to northern British Columbia (Bui, Tremblay, Brunet, Rodgers, Jehel, Very, Schmitt, Vautiez, & Birmes, 2010). There is also a large body of literature on systems perspective (Delaney &

Brownlee, 1995; DuBois & Miley, 2007; James & Gilliland, 2013; Mancini, Bowen, & Martin, 2005; Voydanoff, 1995; Zapf, 2009). This research approaches PTSD and industrial disaster through a systems theory lens, and presents the findings in a way that can provide insight on the mental health needs of an individual, post a traumatic event.

### **Research Question**

Braun and Clarke (2006) explain that the fundamental research question drives the entire research process. My research question has been in the making since volunteering to facilitate the Support and Information Group in February 2012, and stayed with me throughout my post-secondary education. I began my coursework for the Masters of Social Work program in September 2012 which eventually led me to the following research question, “*What Services Best Support Onsite Employees Post-Industrial Disaster in a Northern Single Industry Community?*”

### **Definitions**

In this study a northern community is defined as northern if it falls within the boundaries of the Northern Health Authority. It is important to acknowledge that Burns Lake is located in the north, and can be impacted by poor weather conditions, longer distances to resources, and a lack of services and service providers.

**Community** can be a physical location, norms and ideals, or emotional connection (Nozick, 1992). With the new age of electronics, community can also include groups on the internet. Community is often built on common goals, rituals, or

beliefs. Connections for individuals to community can change over time and many diverse communities may be present in an individual's lifespan or at the same period.

**Disaster** can be defined as, "an occurrence causing widespread destruction and distress," (The American Heritage Dictionary of the English Language, 2012, p. 529), meaning that when a disaster occurs, it interferes with the lives of humans (Furedi, 2007). "Disasters derive from the inability of a community to adequately manage the impact of a hazard, whether local or global, man-made or natural, all disasters begin with a hazardous event" (Ersing & Kost, 2012, p. 2).

**Healing** is a very personal journey that contributes to the wellness of a person's emotional, psychological, spiritual, and physical being. Healing may come after experiences in life. A clear description of healing is to, "become sound or healthy again ....alleviate (sorrow etc.)" (Allen, 1992, p. 342). When individuals do not heal from traumatic experiences they can continue to be negatively affected in their daily lives, relationships, and ability to function.

**Industrial** is defined by the Business Dictionary (2013) as, "all aspects of industry or a company engaged in industry through the manufacture of products" (para. 1). I consider three industries: manufacturing, mining, and milling. Manufacturing is summed up as the procedures for developing products with machinery in factories (Merriam-Webster, 2013). Whereas mining, is the industry or process of extracting minerals and raw materials from the earth (Milling, 2013) and

finally, milling is, “the operation of cutting, shaping, finishing, or working products manufactured in a mill” (Milling, 2013, para. 1).

**Journeys**, for the purpose of this study, can be described as a suggestion of a passage or travel from one place to another place. An example is, “the journey from youth to maturity,” or, “a journey through time” (Merriam-Webster, 2015). When utilizing the word “journey”, I focus on the individual’s personal pathway to recovering from trauma *or* a physical journey such as to a different community, or a road trip.

**Post-traumatic stress disorder** (PTSD) is, “the development of characteristic symptoms following exposure to one or more traumatic events” (American Psychiatric Association, 2013, p. 274). “Symptoms may include flashbacks, nightmares, and severe anxiety, as well as uncontrollable thoughts about the event” (Mayo Clinic, 2015, para. 1). There is no set time limit for symptoms or how often they will occur. Individuals who experience the same trauma may have different symptoms, which may or may not, last longer than the next victim. PTSD is complex and multi-layered.

**Recovery** is described as, “the act or process of becoming healthy after an illness or injury” (Merriam-Webster, 2015). This aspect of recovery is a personal journey for those affected. Recovery can be seen as returning to a prior way of functioning or to change the functioning pattern to adjust to a new environment or

way of life. For example, mental health issues such as paranoia may require medication, talk therapy, or life skills coaching.

**Single-industry community** is where other employment opportunities are in place because of the primary industry. Lucas (1971) states that, “the working rule of thumb [is] that at least 75 per cent of the population has to work for the single industry and it’s supporting institutional services” (p.14). This is the case in the Village of Burns Lake.

**Traumatic stress** can be a powerful condition that invalidates one’s normal assumptions of order, predictability, safety, and identity (Suedfeld, 1997). The aspect of drastic changes from feeling safe, cared for and protected, to feelings of fear, unsafety, and unpredictability, can perpetuate feelings of isolation, anger, and injustice. Finding ways to rebalance these emotional responses can be a challenge.

**Vicarious trauma** can develop through second hand exposure to a traumatic event in which symptoms of trauma manifest (James & Gilliland, 2013). For example, a person living in a central British Columbia (B.C.) community, working in a mill, may watch continuous news coverage of an explosion in a mill, in a different community. This repetition of the explosion may in-fact cause the worker to feel fearful and develop a propensity to become hypervigilant about safety at work. The behaviors developed by this hypervigilance may stem from vicarious trauma.

### **Conceptual Lens**

This research is exploratory as there is no known literature documenting what services best support onsite employees post-industrial disaster, in a northern, single industry community. Therefore, to clearly understand the impact of this disaster an exploratory concept is necessary (Mauch & Park, 2003). This means that the issue of a disaster in a northern single industry community has not been clearly defined. The interview questions are open-ended, and semi-structured (Creswell, 2013). Creswell (2013) notes that as a qualitative study emerges, interactions with people cannot be replicated, and that data can exist in different forms such as poetry, art, and the written word. Below is a poem that I wrote shortly after the explosion, from my perspective as a community member.

### **When Disaster Strikes**

The blackness came on that night of dire, but not before a massive ball of fire.  
The roof it blew, 200 feet high, it was known that some were certain to die.

A community that became frozen with fear, but luckily emergency people were near.  
A hall remained open both night and day, a place to gather and have a say.

Forever changed and out of our control, we have felt the pain of combat with foe.  
After all was said and all was done, people came together to join as one.

From unity arose such power and fight, for the first time seeing hope in the light.  
For a year we grew, learned and survived, now the game changes with new rules to abide.

Don't stop until a building stands where ashes once lay, remember that Rome wasn't built in a day.  
Looking back we recall the months how they flew, as we continued the work, to create anew.



Rebuilding our community is long-term commitment, from people still suffering from one single event.

Moving forward can be slow, some recovery even delayed, with thoughts continuing of that one disastrous day.

When the Burns Lake Mill Exploded.

### **Summary**

In summary, this research explores the perils of a northern industrial disaster and PTSD. Support services are explored and documented to shine a light on what services helped workers, what services hindered recovery, and what services were lacking. Chapter 2 will provide a review of the literature on global and national disasters, both natural and manmade. In addition, an overview of PTSD is presented. A focus on B.C. industrial disasters is discussed and finally the chapter will address northern mill explosions including the Burns Lake mill explosion on January 20, 2012.

## **Chapter 2: Literature Review:**

### **Introduction**

When disaster strikes, the ramifications are extreme (Furedi, 2007). What is uncertain, is who will be affected, the depth of impact, and symptoms stemming from the impact. The complex issues associated with an industrial disaster and posttraumatic stress disorder (PTSD) can combine to deliver a blow so difficult to take that it may last a lifetime (James & Gilliland, 2013). This literature review begins with an explanation of disasters in general, examples of natural disasters and then, focuses specifically on industrial disasters. Also discussed is literature on PTSD, an overview of British Columbia's provincial emergency response plan, and the Burns Lake emergency response plan.

### **Disaster**

Regardless of whether disasters are manmade, created by nature, or by accident, the results are often the same for the people involved. The impacts of a disaster can result in trauma which can be difficult for people to overcome. For example, on July 26, 2005, the city of Mumbai India experienced a horrendous natural disaster when the community was pounded by a massive amount of rainfall, totaling 944 mm or 37.2 inches, over a 24 hour period, becoming the 8<sup>th</sup> worst flood on record. The massive volume of water which covered the city and the post-flooding is noteworthy. Possessions were destroyed, and lives were lost (Deshmukh & Nair, 2008).

This natural disaster impacted citizens deeply as loved ones, neighbors, and pets were seen floating by in floodwaters. Fear and threat of disease such as hepatitis,

malaria, cholera, and dengue began to infiltrate the minds of the survivors (Deskmukh & Nair, 2008). Even though floods are common for the people of India, this catastrophe was so unexpected, that no one was prepared. One positive aspect was the unprecedented authorisation of settling insurance claims that typically would have required substantial time to fulfill. This meant that after this great flood, companies offered on the spot settlements with only basic documentation (Siva, 2015). The ability to offer immediate financial supports after the flood provided survivors with the means to begin rebuilding their lives.

The Health Protection Agency (HPA) provided a review of the literature published from 2004 to 2010 on flooding, aimed at assessing the impacts of flooding on survivors mental health (Stanke, Murray, Amlot, Nurse, & Williams, 2012). Findings revealed that regardless of economic background, age or education, disaster affects all people. Disaster can cause loss and grief issues, economic hardship for families, behavioral issues for children, elevated substance misuse, increases in domestic violence, and can exacerbate existing mental health issues (Stanke, Murray, Amlot, Nurse, & Williams, 2012, Core Findings from the Papers Reviewed in the Report, para. 4), leaving a long-lasting impact on individuals, communities, and countries.

Another example of a natural disaster is hurricane Katrina, which struck New Orleans, off the Gulf coast in the late summer of 2005. Bliss and Meehan (2008) shared documentation of thousands of people that were stranded with no belongings and nowhere to go. The authors stated that emergency programs such as the Red

Cross focused on the victims' immediate disaster based needs to assist people in restoring balance in their daily lives (Bliss & Meehan, 2008). Another emergency service that the military offered in relief camps was to provide people with essential items such as toiletries, water, and blankets ("Arriving in Mumbai," 2013). Many of the disaster-survivors in New Orleans became displaced, in some cases relocating to a new community for employment, or on their own to find housing and other supports, despite the government's intervention (Bliss & Meehan, 2008). An example depicted by Morris (2011) explains that the government provided, "25 million", towards programs after Katrina dubbing it, "second only to the \$132 million that went in to mental health services after 9/11" (as cited in James & Gilliland, 2013, p. 651). It is only recently, that mental health organizations have increased their focus on trauma, regardless of whether the disasters are natural or human caused (James & Gilliland, 2013).

### **Global Industrial Disasters**

It appears that industrial disasters have been impacting communities since the industrial revolution of 1760 (Nardinelli, 2008). Accounts of disasters can be traced as far back as the 1800s which "includes the advent of early high explosives like nitroglycerin, the beginning of steam power and thus boiler explosions" (Weidinger, 2011, para. 2). For example, one of the earliest recorded industrial disasters took place on February 4, 1850 when an explosion rocked the press room and machine shops of A. B. Taylor & Co. This company manufactured hats in New York City where the boiler in the press room and machine shop exploded killing 63 workers.

Another well-known industrial disaster was the Pemberton Mill collapse of 1860 in Massachusetts, killing an estimated 145 workers (Celebrate Boston, 2013). This disaster affected many families who lost husbands, fathers, brothers, and sons. Following is a rendition of that collapse, see figure B.1



Fig. B.1

Collapse of Pemberton  
Mill

Celebrate Boston, 2013

The Associated Press (“Five Worst Industrial Disasters,” 2013) describes what they believed are the worst industrial disasters in the world beginning with a tragic mine explosion caused by dust accumulation in Courrières, France on March 10, 1906 killing over 1000 workers. In China, an industrial disaster transpired on April 26, 1942, when a Japanese run mine in Benxi, exploded from an accumulation of gas and coal dust. Because of this industrial disaster 1,549 people lost their lives. Documentation shows that it took 10 days to retrieve the bodies left behind with many victims burnt beyond recognition, therefore buried in a mass gravesite (Honkeiko Colliery Mining Disaster, 2015). In addition, the bodies were not retrievable for 10 days because the entrance to the mine was sealed with ventilation shut off creating a fear of dangerous fire explosions. Unfortunately, the mine was not fully evacuated prior to the mine sealing and those alive, suffocated in the smoke.

These are only a few cases of the long list of documented examples of global industrial disasters. I found it overwhelming to realize how many lives have been lost due to industrial disasters over the centuries.

A shocking instance of an industrial disaster was the December 3, 1984, lethal methyl isocyanine gas leak from a pesticide plant in Bhopal, India. As a result of this industrial disaster 500,000 people in the surrounding communities were exposed to tainted water and air. This tragedy left approximately 15,000 dead and activists blamed the continuation of contamination, cases of cancer, birth defects, and illnesses on this disaster (Broughton, 2005).

On April 26, 1986 a reactor meltdown at the Chernobyl nuclear plant in the Ukraine spewed radiation into the surrounding community. A fire killed dozens of people immediately, and the contamination in the air, food, and water was blamed for thousands more deaths. United Nations agencies produced a death toll of 4,000 to 9,000, with anti-nuclear assemblies challenging that the number is much higher (Five Worst Industrial Disasters, 2013).

More recently, on April 24, 2013 a garment factory in Bangladesh collapsed killing over 1100 workers. This disaster was noted as one of the worst industrial disasters to date (Cheng, 2013). These industrial disasters can impact other countries, including the potential for changes to the ecosystem by permanently damaging and altering the environment (Gilliland & James, 1997). For example, the Fukushima disaster on March 11, 2011, continues to affect people all over the world (Smith, 2013). It was nearly five years after this tragedy that Japan welcomed global

aid for the ever growing effects of the industrial disaster at Fukushima. The radioactive contaminated water continues to affect the Pacific Ocean's ecosystem, and with that, potentially the world's entire food supply (Smith, 2013). "Radiation from Japan's Fukushima nuclear disaster reach[ed] Canada's west coast last June [2013], far earlier than expected" (CBC News, 2014 Feb 27, para. 1).

### **Canadian Industrial Disasters**

One of the earliest documented mining disasters took place in Nova Scotia in 1880 at the Stellarton coal mine. This explosion was so horrific that it swept across to the opposite side of the mining pit, killing 44 miners along with their horses. There was great fear that another explosion would occur because of the volatile condition of the pit. The cause of the explosion remains unknown (Beitler, 2009). Another incident took place on June 19, 1914 at the Hillcrest coal mine in Hillcrest, Alberta. The majority of the 235 men working that day had no defence against the massive explosion that ripped through the tunnels. Of the 235 men working underground, 189 died. This industrial disaster made history by becoming the, "worst mining disaster in Canada" (Ambrosi, 2009, para. 2). Two exceptional industrial disasters were the 1956 and 1958 mining explosions in Springhill, Nova Scotia. In 1956 the explosion killed 39 miners and in 1958 another 74 miners were killed. In 1958, a CBC-TV live broadcast stated that there were 178 miners trapped almost 4000 meters underground. People searching for bodies, known as Draegermen described the chaos below the ground, painting a picture of raging fires with potential for consecutive explosions. The search and rescue efforts were postponed and the mine was closed off with

bodies left underground (CBC Radio Canada, 2013). What was visible to others was the physical damage; however survivors describe the emotional and psychological trauma as far more impactful (Hollon, Thase, & Markowitz, 2002; Regehr, LeBlanc, Jelley, Barath, & Daciuk, 2007; Shehan, 1987; Suedfeld, 1997; Thompson, 2010). More recently in May 1992, the Westray Mine located in Plymouth, Nova Scotia exploded killing 26 coal miners. "The Westray story is a complex mosaic of actions, omissions, mistakes, incompetence, apathy, cynicism, stupidity and neglect" (O'Malley, 2012, para. 2). There was one example of a Canadian mill disaster which took place at a steel mill in Whitby, Ont. This mill exploded in 2011, sending two people to the hospital with minor injuries (The Globe and Mail, 2011). Even though there are many references to mining disasters, literature on Canadian mill disasters continues to be extremely limited.

### **British Columbia Industrial Disasters**

Even though the focus of this research is on a specific northern sawmill disaster, a noteworthy B.C. industrial disaster took place in a coal mine. The Cranbrook Herald (1902) presented a well-documented account of the May 1902 Coal Creek Mine explosion in Fernie, B.C. 200 men were working in the mine that evening when a thunder like roar echoed in the mountains surrounding Fernie and more than 150 workers perished. The following account depicts to me what this entire study represents, the impact of industrial disaster and the supports and humanitarian efforts to support survivors. Regarding the Coal Creek Mine explosion, there were:



many widows, many fatherless children, and many homes bereft of their mainstay and support. There are few doors in the long rows of miners' cottages that are not darkened by folds of crepe, and few eyes in these homes that are not be-dimmed with tears shed for loved ones buried in the chaos and darkness of the wrecked tunnel. And such a misfortune carries with it responsibilities that the people must not shirk. It brings to the surface the strongest feelings of humanity, and prompts all men to do what they can to alleviate the sufferings of the unfortunate. There are homes that are stricken, mothers who are destitute, [and] children who will be starving (The Cranbrook Herald, 1902, para 2 & 3).

There are many examples of mine explosions classified as industrial disasters in B.C. communities however; more recently mill explosions have been depicted in the media.

In 2012 and 2013 combined, there were a recorded seven mill explosions in British Columbia alone. Some explosions were deemed minor and some without casualties, however, the Lakeland Mill in Prince George, B.C. was not as fortunate (Dhillon, 2013). This industrial disaster killed two workers and injured two dozen more. The explosion occurred on April, 24, 2012, with an enormous fireball and a blast that could be heard several kilometres away (Dhillon, 2013).

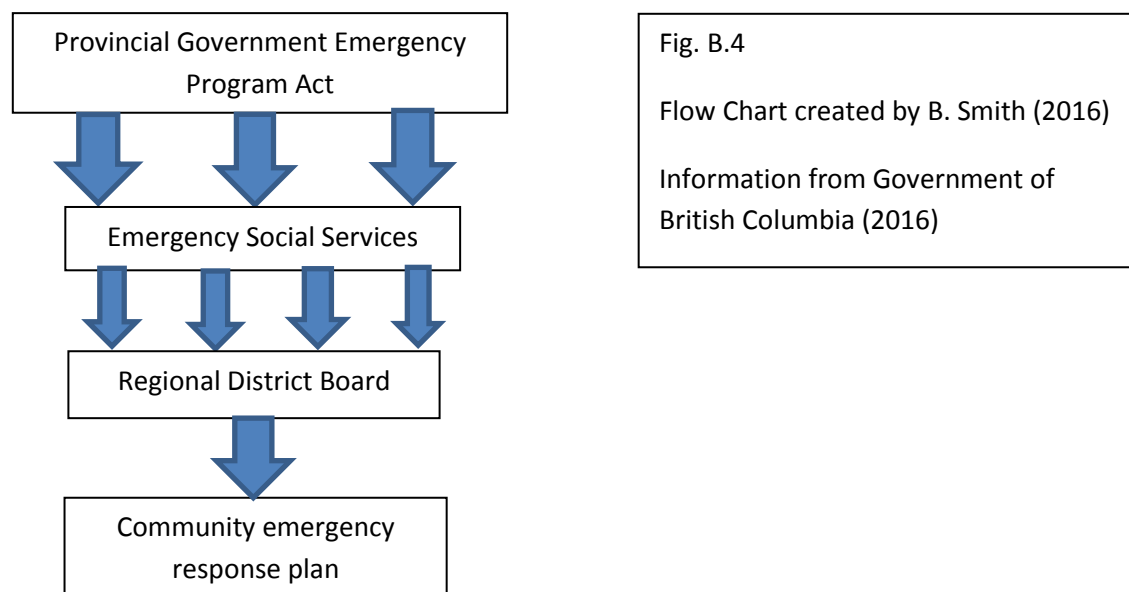
During a newspaper interview with an onsite employee, a graphic account reported that the employees felt like they had been in a war and that the entire mill was levelled in a moment's time. In addition to the two fatalities, many others lost fingers, skin, hair, and their clothing was either burnt off or melted onto their flesh

(Hoekstra & Carman, 2012). This explosion in an urban center was almost identical to the explosion in the northern village of Burns Lake, which took place three months earlier (Babine Forest Service Mill Fire, 2013; Dhillon, 2013; Hoekstra & Carman, 2012). Living in Burns Lake and witnessing the post-disaster impacts, I wondered if the number and type of resources available to the survivors differed because of being an urban centre?

### **Emergency Social Services**

Even though the Lakeland mill is located in an urban centre and the Burns Lake mill is located in a village, it is probable that both communities followed the same provincial protocol for emergency response. The Government of B.C.'s (2016) policies for disasters and emergency state that there *may* be supports and services provided to a community in an emergency situation such as lodging, clothing, information, food, emotional support, and family reunification (para. 1). These services are short-term up to 72 hours and all services are provided through volunteers. Reception centres may be put in place within the community and are generally for families who are unable to stay in their own homes, as is the case with fires, or floods. These services may include child minding where necessary, transportation if required, and pet care (Government of British Columbia, 2016, para 1). There is no mention in the emergency social services protocol that addresses mental health issues, other than volunteers providing basic emotional support to family members.

The guidelines of the provincial Emergency Program Act state that for each community, “a local authority is at all times responsible for the direction and control of the local authority's emergency response” (Government of British Columbia, 2016, *Part 2: Administration*, para. 5). This means that the procedures and policies created by the provincial government are filtered down to individual communities to implement emergency support services, see figure B.4.



The Emergency Social Services are delegated to a regional authority or regional district in which a board is responsible for the development of a community emergency response plan and provision of services to that district (Government of British Columbia, 2016, local authority emergency organization, para. 1-6). There are very detailed and logically laid out procedures within the Emergency Program Act for all B.C. communities when faced with disaster or emergency (Government of British Columbia, 2016, chapter 111). However, the provincial Emergency Program

Act does not respond to the mental health issues often associated with industrial disaster to the degree to which Burns Lake was affected.

The Regional office of Bulkley-Nechako is located in Burns Lake, B.C. and would be responsible for creating a community Emergency Response Plan (Regional District of Bulkley-Nechako, 2012). Provincial government supports a “Three Stage Evacuation Process of Evacuation Alert, Evacuation Order and Evacuation Rescind when preparing .... under the legislative authority of the Emergency Program Act” (Regional District of Bulkley-Nechako, 2012, para. 1-9). The foundation of this program is to administer leadership and support, “emergency management” (*emergency preparedness program*, para. 1).

The Canadian Mental Health Association (2012) consists of, “a nationwide, voluntary organization,” that “promotes the mental health of all and supports the resilience and recovery of people experiencing mental illness” (para 1). It is through this association that there are “14 local resource centers [in B.C.] that can provide direct support services to people and organizations in their community”, however Burns Lake is not one of these communities (Canadian Mental Health Association, 2012, para. 1). In my review of the provincial and local emergency plans, I could not find any information that supported a mental health (psychosocial) protocol when *Disaster Strikes*.

### **Burns Lake Industrial Disaster**

One newspaper account provided a clear overview of the industrial disaster at Babine Mill in the northern community of Burns Lake, B.C. where two lives were lost and 20 others were injured. Reports discussed how onsite employees were forced to leap from the second story of the mill while watching in terror as their colleagues on the ground desperately fought their way back into the inferno to rescue those trapped. The sawmill was decimated by the explosion and the fire that followed (Babine Forest Service Mill Fire, 2013).

Living in a northern B.C. community, can create problems when services and programs are either limited or not available when tragedy strikes (Delaney & Brownlee, 2009; Dhillon, 2013; DuBois & Miley, 2007; Hollon, Thase, & Markowitz, 2002; Jamieson, 2013; McAllister, 1999; Shehan, 1987; Suedfeld, 1997; Thompson, 2010). Posttraumatic stress disorder (PTSD) can manifest for employees following an industrial disaster, whether it took place in 1880 in a hat factory, in a disaster in Japan in 2011, or as above, in a northern Canadian single industry community.

### **Post-Traumatic Stress Disorder**

Post-Traumatic Stress Disorder (PTSD) stemming from a traumatic event has no boundaries (Breslau, 2002; Carlson, McNutt, Choi, & Rose, 2002; Degloma, 2009; Thompson, 2010). Traumatic events such as a disaster can be spontaneous, unique, and impact people differently. James and Gilliland (2013) describe how both

manmade and natural disasters contribute to the development of PTSD, “but it is far more likely to occur in individuals who have [exposure] to some human-made disaster that should have been prevented” (p. 196). PTSD is complex and wide-ranging depending on variables such as the reaction and relationship to the disaster, the physical proximity, and the depth of change perpetuated by the phenomenon (Myer & Moore, 2006, as cited in James & Gilliland, 2013). This can mean that individuals may have different experiences, even though the event is shared. Supports and services should be explicit and directed towards the specific needs of each individual. This can be a difficult task when there is a lack of resources, which living in the north brings (Delaney & Brownlee, 2009).

Supports and services for PTSD can vary depending on the geographical location of communities such as the variance between a southern urban center (DuBois & Miley, 2007; Mullaly, 1997; Van Wormer, 1995), and a small community in the north (Collier, 2006; Delaney & Brownlee, 2009). Equally important is to know what strategies and systems are in place to support trauma and PTSD symptoms within a community (Degloma, 2009; DuBois & Miley, 2007). Collier (2006) clearly expresses that services and supports in urban centers, do not reflect the needs of northern or rural communities and those programs are often created by southern counterparts, which rarely ‘fit’ with the needs of northerners. Therefore, it is important to create supports in the north that reflect a northern context. Specific to emotional needs following a traumatic event, are the four factors in the assessment of emotional functioning: “the duration of the crisis”, the degree of, “emotional stamina

or coping,” abilities, “the ecosystem within which the client resides,” and finally, “the developmental stage,” of the individual (James and Gilliland, 2013, p. 70). If urban programs and services do not meet the contextual needs of their northern counterparts, no amount of money will address the issues following an industrial disaster. In fact, if disaster response systems are ill fitted the symptoms of PTSD can be exacerbated and the fall-out can be damaging. Unfortunately, “when disaster strikes there is sometimes little time for preparation” (Regional District of Bulkley-Nechako, 2012, *The Legal Authority*, para. 2)

Systems addressing the financial, physical, emotional, and psychological damage from disasters are often taxed, ill-equipped, and usually funded by urban agencies or government (Collier, 2006; DuBois & Miley, 2007). These systems need to be addressed in the recovery from PTSD and an acknowledgement that a reciprocal influence is shared between the system and the individual, both of which are impacted by the event (James & Gilliland, 2013). For example, in northern India the devastating flood occurring in June 2013 decimated villages and due to the location of the villages, there was an absence of support services as the available supports are generally centered in developed communities (Deshmukh & Nair, 2008). However, there were some basic relief strategies that were utilized and implemented by outside agencies during the 2013 flood in India. External organizations began delivering a, “two-phase relief operation,” that consisted of assistance to people who were evacuated from their communities. Provisions were provided to the survivors that were essential for day to day existence. Additionally, counselling was provided at

relief centers, and orphanages and shelters were established (Reddy, 2013, p. 2 under *current relief efforts*). When tragedies or disasters arise, it is essential to connect individuals to appropriate support services or micro-systems in the immediate, short-term, and the long-term (McNally, Bryant, & Ehlers, 2003). The majority of people dealing with trauma are able to move forward with minimal services (James & Gilliland, 2013). However, there are those who struggle to move forward from the impacts of trauma. Part of the issue in the treatment of PTSD, is the diversity of needs amongst individuals that share a traumatic experience (McNally, Bryant & Ehlers, 2001). If these needs are not managed adequately, PTSD symptoms may worsen.

The DSM-5 clearly outlines specific criteria for PTSD diagnosis and notes that the person must be exposed to death, the threat of death, or suffers from a severe injury. Furthermore, a crucial feature with PTSD is the onset of characteristic symptoms after the exposure to a single or multiple traumatic events (American Psychiatric Association, 2013). The DSM-5 suggests that symptoms (intrusive recollection, avoidance, negative cognitions and mood, alterations in arousal or reactivity, duration, functional significance, or exclusion), can influence day-to-day functioning and often fluctuate with the length of time that the symptoms continue (American Psychiatric Association, 2013). What this means is that treatment for PTSD symptoms must be specific to the needs of the individual with careful, ongoing planning. In the north it can be challenging to find professionals with the qualifications to treat PTSD. An analogy that I relate to is that treatment can be seen



as an accumulation of diverse pieces, like a patchwork quilt, sewn together, each piece visually different but the underlying fabric is the same. The patches themselves are unique with some more prominent than others, all stitched together to add reinforcement, and each square is an independent system that comes in contact with other squares of fabric (systems). Relating these pieces of fabric to the symptoms and treatment of PTSD means that without the appropriate supports and services, the individual may easily become unraveled and not able to function appropriately. The importance of providing a strong underpinning for the survivors of PTSD is crucial to overcoming symptoms.

Treatment plans for individuals diagnosed with PTSD, are complex and may require many systems working together such as, community members, mental health services, extended family, and possibly alternate approaches such as, canine programs, relaxation therapy, anger management, etc. (Breslau et al., 2002; Degloma, 2009; Shehan, 1987; Thompson, 2010; Beitler, 2009).

There is much literature available on the effects of trauma or post-traumatic stress disorder (PTSD) (Breslau, 2002; Carlson, McNutt, Choi, & Rose, 2002; Degloma, 2009; Hollon, Thase, & Markowitz, 2002; Marshall, Phillips, & Williamson, 2011; McAllister, 1999; Peres, Moreira-Almeida, Nasello, & Koenig, 2007; Regehr, LeBlanc, Jelly, Barath, & Daciuk, 2007). Within the literature, diverse ideologies exist on how to treat symptoms and the survivors of PTSD. One perspective noted by Bishop (1994) is the re-evaluation counselling theory whereby:

unhealed pain is like a gully carved in our thinking. Each time we see a situation that looks anything like the one that hurt us we do not stop to think creatively, we simply react with whatever behavior might protect us .... (p. 52).

Unchecked negative secondary symptoms developed post-industrial disaster can create long-term problems, such as anger, fear, or hypervigilance. It does not appear to matter whether the industrial disaster happened in India such as the 1984 lethal methyl isocyanate gas leak from a pesticide plant, leaving 15, 000 dead (Broughton, 2005), or a single industry northern British Columbia (B.C.) community of 3000 people, where the mill exploded killing two and wounding 20 others (Babine Forest Service Mill Fire, 2013; Hoekstra & Carman, 2012; The Globe and Mail, (2013). It is crucial that the symptoms and behaviors associated with PTSD be addressed, in the immediate, short term, and long term.

Unfortunately, there is much controversy in the literature regarding the *timing* of treatment for PTSD. Gathering information from on-site employees' post-industrial disaster helps to illuminate some ideas about best practice. Bui et al. (2010) suggest that, few studies have investigated which factors contribute to long-term constant and ongoing PTSD for years following the exposure to trauma. This lack of clear data specifically regarding the timeframe of intervention and what services best support individuals post-industrial disaster, requires addressing. What is known is that industrial disasters will continue into the future, as they have in the past and the present.

### **Summary**

In conclusion, a number of articles on global industrial disasters are addressed in the literature; however, there are fewer articles that describe Canadian industrial disasters, and even fewer describing B.C. industrial disasters, with a limited literature on northern B.C. industrial disasters. This lack of information, especially the impact of PTSD, stemming from an industrial disaster, clearly shows a need for further research on this subject. Chapter 3 will present the methodology and method applied to this research.

### **Chapter 3: Methodology**

This chapter presents the methodology chosen for this research as well as the ethical concerns, procedures of data collection, and data analysis. Royce (1991) posits that, “methodology is something like a blueprint,” and how it, “outlines the approach to be used to collect the data” (p. 43). Braun and Clarke (2006) explained that importance lies in the theoretical schema and that the methods of data collection are a match with the researcher’s inquiry. Because of the lack of research on services post-industrial disaster in northern communities, I chose to utilize an exploratory case study research design (Royce, 1991). The goal was to acquire information from firsthand accounts, on what services best supported or hindered onsite employees post-industrial disaster. There were a total of 17 participants consisting of four onsite employees, three spouses and 10 anonymous surveys completed by service providers.

#### **Qualitative Approach**

A qualitative approach was selected because it supports face to face meetings with participants and facilitates a natural progression of data collection (Creswell, 2013). It also supports flexibility in the process (Braun & Clarke, 2006). Even though it was unknown what information would be revealed through the interview process, as the researcher, my thoughts of potential themes already resided in my mind and my focus was on, “creating links [to] understand” (Ely, Vinz, Downing, & Anzul, 1997, as cited in Braun & Clarke, 2006, p. 7). This means by comparing data between a limited numbers of cases, societal life is illuminated (Neuman, 2010). By

selecting participants that were onsite when the Babine mill exploded, I expected that commonalities such as shock and fear amongst the participants' experiences would surface.

Preparing for this study, meant researching the principles of qualitative research practice and methods (Creswell, 2013; Guba, 2012; Neuman, 2010), which helped me to understand the basic tenets of a qualitative study. More specifically, I had a better understanding of how to validate data by cross analysis comparison, how to present questions to encourage honest in-depth answers, and how to analyze the data.

Creswell (2013) summarizes the concept of qualitative research in that the researcher provides an interpretation of a participant's experience, in their natural environment, to clearly understand their day to day activities. This meant focusing on respect, being sensitive to other's experiences, and appreciating their circumstances (Westhues, Cadell, Karabanow, Maxwell, & Sanchez, 1999); something that I demonstrated throughout the interviews. I would utilize both non-verbal and voice intonations to add a level of trust and comfort. I would sit with my body open and engaged. Usually when a concern was disclosed, I immediately validate their feelings and emotions. Key phrases of questions encouraged a willingness to engage such as "tell me how that felt?", "what did that look like?", or "what were your thoughts at the time?" helped to gain information and also provide emotional support. The data collection strategies for qualitative inquiry aligned with my research purpose as interviews with participants provided so much more than words or numbers. For example, facial expressions, body language, and comfort level can be observed during

face to face interviews. These visual cues can add to the spoken word, and for these reasons, qualitative research was a fit for this study (Neuman, 2010).

The focus in the preparation phase of my research was on ethical considerations and addressing any personal biases or preconceived concepts. For example, I believed that those injured who had a close social network, would heal quicker emotionally and psychologically. To address this and other potential bias I maintained a field journal and reviewed the entries to help me to acknowledge when a personal bias might be present. I felt a sense of humbleness throughout this process, which helped to ensure an accurate account of the participants' experiences, in a way that honored them. In addition to writing my feelings and thoughts in my field journal, I mitigated any further concerns such as what qualitative research approach to utilize, how to design my study, and the process of recruitment, through contact with my supervisor, and reviewing helpful literature.

### **Case Study**

A case study approach is both specific to each case and inclusive as it compares cases focusing on one topic (Creswell, 2013). Baxter and Jack (2008) state that a, "hallmark of case study research is the use of multiple data sources, a strategy which also enhances data credibility," and that explicit concepts include addressing situations which are not straight forward, but often messy and intertwined with social, political, historical, and personal circumstances (p.556). "Because case studies have traditionally been used as an exploratory method", it is a good fit with the topic of an

industrial disaster in the north (Yin, 1999, p. 1220). The literature review starts a Case Study process. It is important to “demonstrate a broad awareness of prior research.... to avoid unknowing reinvention in a study” (Yin, 1999, p. 1221). I could not uncover any studies on the topic of industrial disaster in a northern single industry community; however, there were a vast array of literature on: disasters, the north, and PTSD.

This Case Study approach, focuses on a single event (explosion) *and* participant’s experiences with support services. Each participant experience became a case. Each case focused on services post-industrial disaster. Creswell (2013) acknowledges that it is preferable to gain information from participants who are still situationally in-progress as the information has not been lost with time.

Along with information from the onsite employees and some spouses, an anonymous qualitative survey was completed by service providers such as a police officer, a fire fighter, a nurse, doctors, psychologists, and an international coordinator of an emergency response team. The purpose of the survey was to understand the point of view of service providers who were involved with the onsite employees in the immediate, the short-term and long-term, post-disaster. I also wanted to comprehend how this tragedy impacted the services providers, if at all. The information from service providers was important for the data analysis as it added a new layer of facts.

Also utilized was supporting materials such as media reports, media interviews, and electronically documented publications of support or lack of support post mill explosion. Documentation gathered supported me in “hav[ing] contextual material available to describe the setting for the case[s]” (Creswell, 2013, p. 123). As a social worker, I wanted to understand what services were created, implemented, and existed. It helped me to identify what was lacking and how the gaps in services could be best mitigated in the future.

Each case was an opportunity to understand how support services benefited or hindered recovery, and to view those supports from a multitude of perspectives (Neuman, 2010). I correlate a case study approach to that of a puzzle. Each piece of the puzzle can be seen as a case forming aspects of a larger picture. When all the pieces come together it presents a clear picture.

### **Ethical Considerations**

I had immense feelings of concern that grew over time. Originally, my research focused on the experience of living through an explosion. Ethical questions were forefront in my mind as I pondered the influence of studying the experience of being blown up in an industrial disaster. I realized that I did not want to contribute to any possible added trauma by concentrating on the explosion, so therefore, switched my focus to supports, post-explosion. The University of Northern British Columbia (UNBC) Research Ethics Board (REB) addressed any ethical concerns (Appendix G) adhering to mandated standards (Creswell, 2013). Also guiding this study, was the



information I acquired through my Tri-Council Policy Certificate for ethical conduct for research involving humans (Appendix H).

My focus throughout the study was on the safety and wellbeing of all participants. An important part of the process was to release information about the study to all potential participants (Creswell, 2013). It was my responsibility to inform participants about the ethics of this study, provide the opportunity for informed consent, and ensure transparency and ethical research practice.

It was equally important that the participants met the criteria for this study. If potential participants did not meet the criteria to participate I provided information for possible support services. For example, an adult child of an onsite employee contacted me wanting to provide information for the study. This person was asking for help and even though I could not ethically allow their valuable information to be in the study, I took time to validate concerns, feelings, and fears. I also provided names of local counsellors that were accessible for further support.

An enormous ethical consideration was to engage with the participants as a researcher, and not as a social worker. There were several participants who continued to struggle with PTSD throughout the study. I felt like I understood some of the participant's presenting issues and wanted to help them with their concerns, but as a researcher it was not appropriate. At the time, some of the participants were receiving services such as local counselling. I wrote in my journal about these struggles between being a researcher and a social worker to help me keep focused on

my role as a researcher. Finally, being true to the information was an ethical concern. I was very aware that any false or embellished data could directly affect the study and the results. It was important to me that future researchers regard this study as ethically sound.

### **Recruitment Strategies**

The basic recruitment strategy was to place recruitment posters in strategic locations in the community of Burns Lake. These locations consisted of public announcement boards, private business windows, and in the coffee room at the mill. Recruiting participants via posters was a long and frustrating process. Every ten days I set out to re-date the posters for another 10 days (as per community rules). The posters at the mill site were left in the coffee room for three weeks then removed, as to limit the perpetuation of any negative feelings regarding the explosion. This process lasted almost 8 months, with no request to participate. Desperate to try a new approach, I took the posters down for two months then reposted them throughout the community. Within the next few weeks, there was contact by eight potential participants. When asked how they knew to contact me, each individual said that they obtained the information from the poster. When I asked if they had previously seen the posters, which were in the same location, they all said no they had not. As a novice researcher I found this very interesting and it appeared that now the timing was right to move forward with the research interviews. Initially, my goal was to interview six to ten employees who were onsite the night of the mill explosion and up

to four interviews with spouses/partners of onsite employees. These numbers changed because of the length of time it took to recruit, and the limited number of potential participants who had come forward. In total, the study included interviews with four onsite employees, interviews with three spouses/partners, and 10 anonymous surveys completed by service providers.

The second recruitment strategy involved service providers. During the interviews with the onsite employees and spouses/partners, names of 40 service providers were presented. When I received those names, I contacted each service provider to request their participation in a survey.

### **Data Collection**

Data was collected through individual interviews and qualitative surveys. The data collected also included poetry and media sources directly related to the mill explosion. Comparing data, referred to as triangulation of data, contributed to the validity (Creswell, 2013), therefore supporting the findings in this case study. Quality of data is necessary when conducting a study of depth and breadth. To study means to gain understanding through the pursuit of knowledge, by observation, research, or reading (Allen, 1992). I felt confident with the information that was gathered throughout this study.

The interviews with employees and spouses/partners consisted of initial contact, an overview of the research focus, and at least two face to face meetings. The first meeting was to provide an in-depth description of my research, to explain

the consent form, confidentiality, and to collect personal information as well as answer any questions the participants had. The second meeting focused on the interview and data collection. Initially, I planned two meetings lasting up to one and a half hours each, however some of the participants required more time, which was provided. There was one on-site employee who did not want to meet in person, but who was willing to participate over the computer. I realized that people's comfort level regarding face-to-face meetings sometimes hinders their ability to participate. I accepted this participant's information and signed consents over the computer.

The face to face meetings took place in a location of the participant's choice either in their home, or in the community. It was during these interviews that my learning began. I was aware going into the interviews that people's responses, level of impact, and situations would be diverse and that each experience was different even though they were exposed to the same traumatic event. Prior to conducting this research, I had the opportunity to listen to personal stories from onsite employees about the mill explosion, so was somewhat able to mentally prepare for what I might hear. During the interviews, it became apparent that the explosion was still affecting some participants' ability to cope on a day-to-day basis. It was rewarding to see how my past year of academic focus on PTSD helped me to recognize ongoing PTSD symptoms. This was also difficult as I could not do anything to help participants with their symptoms of PTSD except to provide a list of local counsellors. I reflected my thoughts in my field journal, "I want to help him in his recovery [and] I know what will help this person". From a social work perspective, I could see what supports

were lacking and may be required to move forward in recovery. This was an extremely difficult position for me to be in because as the researcher, I was not able to assist. It helped me to speak with my supervisor and other supports to maintain my focus and attention on being a researcher.

Another aspect that I found challenging was receiving information from one participant, and not taking that knowledge into the next interview. For example, one participant talked about a support that was not brought up by other participants. It was possible, that bringing that support up to other participants may have affected the results of the study. Over and over I continued to ask if there was any immediate, short-term or long-term concerns that participants would like to explore.

All face to face interviews were audio recorded and later transcribed within a week after the interview while the information was still clear in my mind. When transcribing the audio recordings, I noted that recording the conversation rather than taking notes, was beneficial to having fluid and open communication. The semi-structured style of questioning allowed for clarification questions and also encouraged the participants to share their information on their own terms with no pressure. Questions focused on both the negative and positive aspects of support services, as well as exploring what the participants perceived were lacking in services. Focus always remained on the participants' renditions of what services and supports helped, or hindered them post-disaster.

It was during the transcription phase that I realized there was a marked discrepancy between men and women. Typically, the male participants answered the questions in a straight forward manner focusing directly on the question. Female participants on the other hand, began to answer a question, and then before the question was fully answered would often refer to a different example or reference a different idea. The female participants tended to provide many examples to support their answer or recalled other situations connected to the original question. Sometimes this verbal interaction became very confusing and hard to follow on the recording. Because of the style of conversation with the female participants, as a researcher, I spoke more and asked more clarifying questions. Generally, the women spoke more quickly and with far more information pertaining to the question. It was extremely important as a researcher to adapt to the circumstances that were present during the data collection process.

During the one to one interviews with employees and spouse/partners, service providers were identified. I applied a snowball technique in which the main principle is to gather additional contacts or data sources through the interview process (Neuman, 2010). Before contacting service providers, it was helpful to have the information clear in my own mind. Royce (1991) states, “researchers must define rather precisely what is to be measured in their studies and who is qualified to be a subject” (p. 45). The service provider information letter and the survey helped produce a clear and precise explanation of the study.

Initially, I stated that direct telephone contact would occur with the service provider prior to sending the survey. It was apparent early on in the process that with some, there was minimal possibility in speaking directly with them. Lack of time and availability changed the strategy to contacting administrative staff for email addresses or support to ensure the service provider received the pertinent information. After the initial contact, both the survey (Appendix E) and letter to the service provider (Appendix C) were sent in the mail, dropped off in person, or emailed. A short eight-item survey was sent to 40 service providers within the community with a few sent to service providers from other communities.

### **Confidentiality and Anonymity**

Ethical practice addressing confidentiality started at the beginning of the research study and continued throughout. Ensuring confidentiality and anonymity meant developing a, “master list of types of information gathered,” and ensuring confidentiality by, “masking,” participants names in the data (Creswell, 2013, p. 175), all of which I followed. I cross coded names with numbers in a field journal. All confidential information was kept in a locked file cabinet and digital files were password protected. Confidentiality is a researcher’s responsibility, so for this reason, the participants were not given an alias or number to reference throughout the findings chapter, rather all participants were referred to as, “a participant,” only. While living in a small community, members may have heard some of the participant’s stories. If the participant was provided an alias, it may be possible for

other community members to link the person based on information. This extra precaution contributed to the participant's anonymity.

### **Methods**

When designing this study, to produce accurate and trustworthy information, I began planning by putting pen to paper and creating lists to create some semblance of order and a solid plan. This approach helped me to focus, organize, and create a visual roadmap moving forward. Thematic analysis was, "a foundational method" (Braun & Clarke, 2006, p. 4). This method can be described as identifying and analysing data and then reporting several themes derived from that data. In addition, thematic analysis has a flexibility that can provide a complex account of data while also being detailed and rich in information (Braun & Clarke, 2006). I utilized Braun and Clarke's (2006), "six key" steps (p. 10) when using thematic analysis. These steps are, 1) familiarizing myself with my data, 2) generating initial codes, 3) searching for themes, 4) reviewing my themes, 5) defining and naming the themes, and finally, 6) producing a trustworthy report (Braun & Clarke, 2006). Another basic qualitative research method is a mutual interaction with participants, to gain accurate data. Neuman (2010) states that each individual case is, "defined by data and theory," (p. 163) which means that creating a case is viewed as a method which can take place during any phase of the research process, while building explicit and clear meaning of ideas. The methods were to utilize existing concepts and



techniques and then merge those methods with the data collection process (Neuman, 2010).

### **Data Analysis**

As Creswell (2013) points out, it takes a skill to convey another person's information with accuracy and clarity. By presenting themes and findings, data is intermingled and guides the reader to understanding the dynamics of surviving a mill explosion. Possessing the ability to captivate and hold the attention of readers is both a challenge and a talent. This aspect can become murky with so much information from so many sources. It was important to focus on the information to present a clear case description.

A case description is about capturing all the information that was acquired. Therefore, the data collection process, analysis, and interpretation of the data, was combined to produce a substantial case description. The skill is to draw in the reader so that they feel like they are part of the study process and can apply the information from the study to their own life circumstances (Creswell, 2013). This aspect of engaging the audience can be accomplished by describing the context in which the situation occurred, thus providing a deeper understanding and connection to the phenomenon under study (Baxter & Jack, 2008). Royce (1991) describes a general format by first putting the, "research question or hypothesis in context and review[ing] the important studies.... in the literature" (p. 48), and secondly by

providing an overview of the research methods, and finally, making recommendations for additional research in the topic area, and how that research can be enhanced.

Following Braun and Clarke's (2006) first step, "familiarising yourself with the data," I began the process of immersing myself in the data. I wanted to create in my mind, a picture of how this disaster impacted the participants. I needed to understand. Braun and Clarke (2006) state that, "you immerse yourself in the data to the extent that you are familiar with the depth and breadth of the content" (p. 16). For the first reading of the interview transcripts, I just read. With the second reading, and third full reading, I began the process of coding. Initially, I intended on developing a code book and began this process however, it felt repetitive as I was also coding with highlighters. My ability to focus and categorize thoughts in my head helped a lot, because I am a visual learner so the colour coding process made more sense to me and for these reasons, I abandoned the code book.

The second step, "generating initial codes," (Braun & Clarke, 2006, p. 18) seemed to come naturally which began the process of, "organising the data into meaningful groups" (p. 18). Because this study is, "data-driven," (Braun & Clarke, 2006, p. 18) I included media reports, media interviews, and electronically documented publications of the mill explosion, and coded them in the same fashion as the interviews. I began coding by hand with hardcopies at first, and once I felt comfortable with the process, I highlighted using the computer which was positive as

the process was less time consuming. There were so many codes and deciding on which code to prioritize was difficult.

The search for themes is Braun and Clarke's (2006) third phase. It helped to, "consider how different codes may combine to form an overarching theme," (Braun & Clarke, 2006, p. 19). For example, isolation was seen as positive, and also as negative, both forced and self-initiated. To combine all these aspects of isolation, and capture them under a theme of withdrawal, created a, "theme pile" (Braun & Clarke, 2006, p. 19). By using thematic analysis strategies such as inductive processing, themes were created and then reduced to several broad themes, and then finally created a universal essence (Hsieh & Shannon, 2005). Figure C.1 portrays an example of the inductive process.

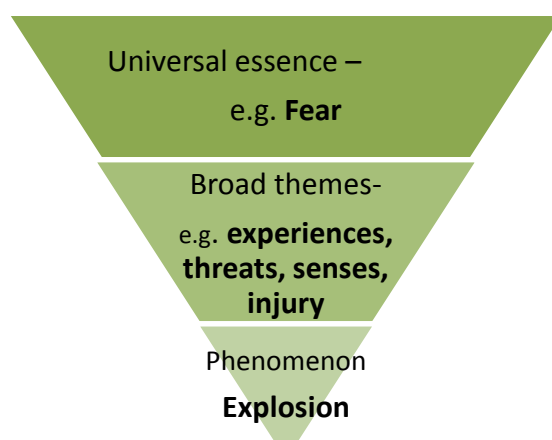


Fig. C.1

General information  
from Creswell (2013)  
p. 45.

Chart and specific  
information  
produced by B.  
Smith 2014

Even though thematic analysis is a complex process, it was helpful to use color coding, notes in the margins on transcripts/data, and correlate specifically with definitions of the themes. Creswell (2013) explains how coding consists of schemes/themes filtered into categories or codes and that this

action, “represents the heart of qualitative data analysis” (185). Continuing, he states that it is the researcher’s role to develop schemes and build meticulous descriptions for those themes, and provide detailed interpretation. He recommends continuing this process until producing five or six themes, which will guide the findings (Creswell, 2013). The process of developing themes from data can be intimidating and presents as being unorganized, however, looking past the seemingly chaotic methods lay very useful and efficient ways to develop themes.

Another useful tool is what MacQueen (2008) describes as, “lumping and splitting” codes, meaning that data can be created from a variety of smaller units such as a line, sentence, or word as long as, “the essence is the same” (as cited in DeCuir-Gunby, 2011, p. 145). This helped me recognize the messages and meanings in smaller more poignant statements and writings. This aspect of lumping and splitting supports analysis by cross referencing, making the data trustworthy (Creswell, 2013). Guba (1981) states that one way of gaining trustworthiness is to utilize data triangulation by accessing diverse sources and that no data should be accepted unless it is confirmed by at least two other sources. This process was utilized during the analysis stage of this study. For example, I recalled some information that was in the news and was general scuttlebutt around the Burns Lake community in 2013. This information related to this study so I researched further. The media reports suggested that the information was indeed true. However, when I spoke with a reliable source about this specific information, it was explained that there *was* a recommended initiative that did not come to fruition. Because of the triangulation of data, only

truthful and accurate information was utilized. By this point, I was starting, “to have a sense of the significance of individual themes” (Braun & Clarke, 2006, p. 20).

Once the data was categorized, I entered phase four of Braun and Clarke’s (2006) six phases. Phase four is the process of reviewing themes. Eliminating duplicated information and teasing out the most relevant data was a straightforward process. It was at this point where there was, “a set of candidate themes,” which involved the, “refinement of those themes,” where I could see, “clear and identifiable distinctions between themes (Braun & Clarke, 2006, p. 20). I re-read the data from each theme, to ensure there was an actual theme. Initially, the data was organized with 11 broader themes. After review it was apparent some themes were similar, so I adjusted and moved the identified themes to achieve a final set. Braun and Clarke (2006) explain that, “the need for re-coding from the data set is to be expected as coding is an ongoing organic process” (p. 21). I had completed Braun and Clarke’s (2006) steps of generating and authenticating themes which were validated with other data. I continued the process of validating themes with data, until eight specific themes were named. In, “phase 5, defining and naming themes,” was the target. Defining the themes and then providing, “the essence of what each theme is about,” determined, “what aspect of the data each theme capture[d]” (Braun & Clarke, 2006, p. 22). The final themes are: 1) contact and information sharing, 2) resiliency, 3) withdrawal, 4) closure, 5) anger, 6) lack of resources, 7) timing, and 8) supports. The information from these eight themes is detailed in the findings chapter.

The final phase of Braun and Clark (2006), phase six, begins where there is, “a set of fully worked-out themes, and involves the final analysis and write-up of the report” (p. 23). The idea is to overview complex renditions of data in a way that shows the soundness and quality of the analysis (Braun & Clarke, 2006, p. 23). This includes the examples and references from interviews, and the answers to the anonymous surveys. The information which formulated the data set was then presented to guide in a better understanding of how each theme was developed and how the themes became important to this study. The findings are an amalgamation of data collected, focusing on the themes that were prominent. Throughout the process, it became clear that a ‘meta-analysis’ was important to this study in order to relay overarching change moments in the data in a meaningful way. To capture the true essence of this thesis, I felt a timeline was required as a reference point.

### **Meta-Analysis**

A meta-analysis technique, was utilized to organize the data. Continuing, meta-analysis is defined as having the, “intent to ascertain systematically, comprehensively, and transparently the state of knowledge in a field of study, [and is] both an analytic process and an interpretive product” (Sandelowski, 2004, para. 1). The analysed data was organized into three overarching meta-themes, 1) the immediate, 2) the short-term, and 3) the long-term, which further guided analysis into being more than just facts, as it allowed for an interpretation of change moments that was fluid and easily transitioned from one meta-theme to the next. This “timeline”

structure fit very well and added depth to the individual experiences gathered by providing an overarching process to each of the participant's individual experience. Many of the eight themes occurred in the immediate, the short-term, and the long-term, providing interconnectedness through time. This type of presentation supports the information being offered in a timeline fashion with real indicators, of how important timing was for the delivery of services and supports. It also provided a timeline to clearly understand the progression and change moments of events and to make sense of it in my own mind.

At that point in the study, a confidence towards the data steered the interpretation. As I sifted through the spoken word, experiences, and recollections, I felt overwhelmed with responsibility. I did my best to capture the nuances, truths, and personal realities to produce a comprehensive study. It is important when utilizing a case study method, to be cognizant of the need to analyze the data sources based on the phenomenon, not separate from it (Guba, 1981). For example, when querying responses to living through a mill explosion, a researcher would not include off-site workers as they had only seen the aftermath; they had not lived the experience.

Baxter and Jack (2008) state that, it is helpful to the researcher to focus on the original case by involving other research team members at the analysis stage and asking for feedback. Even though I was the sole researcher, a case study should not be performed in isolation as there is potential for the study to take on a life of its own

and to be overwhelming with the great amounts of data available (Creswell, 2013).

For this reason, I had consistent and ongoing interaction with my thesis supervisor.

With her support and direction, a case description was delivered.

### **Summary**

It was through the presentation of material, utilizing a specific methodology, and method for data analysis that this study unfolded to provide pertinent information regarding what services best support onsite employees post-industrial disaster in a northern single industry community. The process was time consuming, especially with several cases, however triangulation of data contributed to the dependability of the study (Creswell, 2013). Chapter 4 will discuss the thematic findings of this research.



## **Chapter 4: Findings**

### **Introduction**

The research findings are the amalgamation of interviews with seven participants (four onsite employees, and three partners) and ten surveys, as well as media reports, media interviews, articles, etc. The completed surveys from service providers were included in the findings. The survey was anonymous to encourage truthful responses of participant experiences as a result of the explosion. The responses are the personal thoughts and views of how the disaster unfolded, and their involvement as a support person. The surveys were helpful to understand what services and supports were offered that the onsite employees may be unaware of. For example, in the moment after the explosion, because of the chaos, the onsite employees may be unaware of who was onsite and helping.

I remained mindful throughout the entire research process of my responsibility to accurately relay the participants' experiences in a meaningful way. Great care was put into using actual words and expressions from the participants. For example, several participants felt disrespected when community members would refer to the mill explosion as a fire, as it was, "the explosion," to the onsite employees. To avoid being disrespectful, I used the participants' language when retelling their experiences. At different times during the data analysis, I felt overwhelmed when contemplating what information to share. Deciding what information best portrayed the experiences of the onsite employees, their partners, and the service providers, remained the focus.

Following the phases of data analysis described by Braun and Clarke (2006), the following themes emerged from the data.

### **Thematic Findings**

#### **Theme One: Contact and information sharing**

The first theme identified was regarding contact and information sharing. This theme provides a contextual lens to expose the support and lack of support for onsite employees post mill explosion. Due to confidentiality and privacy policy the mill employer was unable to provide a list of employee names to support agencies that were assisting with the employees post explosion. Other supports were limited to accessing names such as the, “Burns Lake Tragedy Fund Society [couldn’t] get names of the sawmill employees due to the Privacy Act” (Canadian Wood Products, 2012, para. 2). Several participants commented about how the Privacy Act interfered with the onsite employees’ ability to receive supports. One participant spoke about having,

hurdles now with privacy laws and stuff like that and they are not allowed to release names of people who were there, but [he] think[s] that any company that ha[d] gone through th[at] kind of a disaster, should be able to freely share the names of every employee onsite with a body like WorkSafe.

A second participant said that there was a family that did not receive any support and that support services, “should have been for everybody, [she had] kept in touch with one of the other spouses and she got nothing”. Some participants waited three days

post-explosion, before anyone contacted them. One participant said that, “[they] didn’t realize that they were all getting together at the hall, and that was on the Friday night that happened [explosion] and it was Sunday at 11 o’clock at night that [they] got a call”. Valuable time was lost while trying to access contact information for those most vulnerable. As one participant stated general community information and updates, “just seemed to come out from all different angles”. Another participant tells how,

one day [he] went to group.... and sat at the table with [his] friends and heard someone across the table say what dinner? And it sparked [his] attention, [that].... they had a dinner at the MP Center the night before [and only] 30% of [them], [onsite employees] knew about it.

Several participants expressed that they were not contacted by either social workers or mental health workers immediately after the explosion. One spouse stated that, “we didn’t know where everybody was going. It was all word of mouth, but if you are [living] out of town, you don’t have a clue what is going on”. Locally, there were social workers and mental health workers that were available to connect with the onsite employees; however because of restrictions on information sharing they could not access a list of who was onsite. I was one of those social workers. If local social workers or mental health workers cannot access the onsite workers, or know how to identify who was working at the time of the explosion, it creates a structural challenge to appropriate service provision.

There was a substantial amount of research to show that an initial debriefing process is recommended immediately (James & Gilliland, 2013). In my opinion, initial group debriefing would have been extremely beneficial directly after the explosion. One participant shared that, “the facilitation of a critical incident debriefing could be extremely effective if completed by appropriately trained professionals”. McNally, Bryant, and Ehlers (2003) recommend that, “anyone exposed to a critical incident be offered debriefing, regardless of whether the person is experiencing any stress symptoms” (p. 57).

There was an immediate need for contact by a social worker to update onsite employees with information, locations of meetings, local resources, and to coordinate immediate services. The systemic issue of lack of information sharing continued as groups were developed to support the onsite employees. “Information was coming from every direction,” said one partner, while some onsite employees, “did not receive information at all”, with others only receiving partial information. This is also known as a, “multi-system failure” (British Columbia Association of Social Workers, 2015, para. 1). Unfortunately, there were no public announcements of where the onsite employees were to meet in the immediate period post-disaster. One spouse reflected back to what would have helped her. She said that,

they [television channel] could have gone and put a little, like CBC news they always have those little tickers on the bottom, if they had gone and had a little ticker on the bottom of the news that people were getting together. They wouldn’t have to say anything, everybody reads the little ticker.

There was no website set up where people could read announcements, activities, or event schedules, until many months later. Participants expressed that the lack of information sharing added to the anger and confusion and took time away from focusing on overcoming trauma. One participant explains that they,

were having group therapy, there [were] services available by this time.

WorkSafe was counselling [and] doing vocational rehab, there were meetings through the college, there were meetings through the village, there were opportunities, [and] there was a job seminar. Some work seminars [were] coming to town and nobody knew; the word was not getting out to everybody.

### **Theme 2: Resiliency**

The second theme resiliency is, “the capacity to recover quickly from difficulties” (The Oxford Dictionary, 2016, para. 1). Resiliency was portrayed throughout the interviews as being a real asset in recovering from PTSD and trauma. For example, one participant described how he could calm himself down because he was, “an athlete,” and he had, “always been able to control [his] heart rate”. It became obvious to me that the ability to overcome trauma, and to regain control over one’s life was more common than not. The strength to advocate and engage in treatment plans provided participants with a sense of autonomy and sense of being in control. One severely injured onsite employee said that immediately all he could smell was his burnt hair.

[He] remember[s] constantly, even in Burns Lake [he] asked them to cut [his] hair because all [he] could smell [was] burnt hair. It was in [his] nasal passage everything was seared, but it was all [he] could smell; they said no. [He] remember[s] being in Vanderhoof asking them to cut [his] hair; no. When [they] got to Prince George (University Hospital of Northern B.C.) they got [him] out of [his] gurney and into a wheelchair and [he] put the brakes on and said [he's] not moving until [they] cut [his] hair. Someone whipped out a pair of scissors and started snipping; thank you.

This action of self-advocating proved to be a real asset. Setting and obtaining goals was also an important aspect to recovering from the traumatic event. One participant explained that if he did not “grab the reins nobody else [would] do it for [him]”. That’s the only thing that [he has] seen over the last few years is that people who needed help did not go out and actively ask for it”. Many examples were provided on moving forward in daily situations, such as forcing oneself to attend community functions, going downtown to face questions by the general public, training, job fairs, and going to group, to name a few examples.

Literature shows that typically, “only about 5% of men and 10% of women would [contract] PTSD,” post-traumatic event (James & Gilliland, 2013, p. 10). Furthermore, it was explained that most people have an innate degree of resiliency. This show of strength was prominent with all the participants. They are all survivors. One onsite employee who was significantly physically injured, displayed resiliency by advocating for himself immediately after the explosion, while still onsite. He

explained that,

the police and fire department came by and [they] understood how under-powered they [police and fire department] were, and [that] the three of [them were] in someone's van, had one black lung and smoke inhalation and [they] had one tank and one mask. Basically the three of [them were] left to [their] own devices and to do triage.

This participant then progressed to making medical decisions and treatment plans for himself.

From involvement with medical procedures, to changing careers, to day to day functioning, resiliency helped participants to move forward.

### **Theme 3: Withdrawal**

The third theme is withdrawal and is a theme that is complex in that it has both a healing benefit and a negative influence. The need to withdraw from general community, prying eyes, and judgements was a concern. According to one onsite employee, a positive aspect of withdrawal was from spotlight circumstances, such as questions from the general public on what it felt like to be “exploded”, and ongoing media pressure. Another participant said he needed,

some way to refocus, [his] job had disappeared, [his] work family had disappeared or died or being sent to the four winds for treatment. [He] also needed to get away, because he felt like [that] ...people [were] watching [him], they are trying to figure out what happened to [him] and [he's] still being hounded by the media.

There were many reasons why the onsite employees withdrew from the public eye and from friends and family. Often, it was the thoughts within the survivor's mind that contributed to their emotional and physical withdrawal from supports. James and Gilliland (2013) spoke about how isolation and, "disengagement," from activities and people, can contribute to severe mental health issues (p. 233). This withdrawal may be sudden, or gradually increase over time. Familial supports or connections in the community seemed to have little bearing as all survivors were susceptible to withdrawal. It was noted that the participants were diverse in many ways, from female and male, a single man to a grandfather, and from being submerged in the community to being a lone wolf. One participant, who was very connected to family and community, expressed that she did not know where the services were located in town, where the offices of counsellors were located or who to call. She said, "the only thing [she] could do [was] talk to WorkSafe and they said there should be a counsellor there, somewhere, [she was] like ok, somewhere? No idea". Even though this family was well connected within the community, they did not have direct information on services and supports. This systemic flaw in the lack of information sharing supported feelings of isolation and a sense of forced withdrawal. Another participant expressed that the family did not need to carry the burden of what happened, so there was no sharing of details and personal affect. One more account was of wanting to protect partners from all the thoughts and details. One onsite employee stated that they didn't, "think [they] would've wanted the family to know what [they] went through or how [they] felt". Many others expressed



an inability to speak with the community in general as they would not understand what the onsite employees lived through. One onsite employee said that it was frustrating,

that such a small community, based around one industry, that they had no clue that it wasn't a fire, it was an explosion. It might as well have been a bomb because that's virtually what it was, and [he] didn't want to talk to people, [he] got tired of being the center of attention. [He] withdrew from many things, well life, [he] just withdrew.

Feelings of being, "different or judged," caused some survivors to withdraw from society, and with that came elevated mental health issues. Withdrawal from emotional attachments, the psychological withdraw that was trauma induced, and the actual physical withdrawal from support systems were some negative aspects. Some withdrawal was associated with, "depression [or] suicidal ideations," as told by one participant.

### **Theme 4: Closure**

The fourth theme identified is closure. This theme is extremely diverse as the participants expressed what they needed to move past PTSD and the explosion to gain closure. Examples were varied regarding closure in tangible terms. The need to feel safe, understood, and heard were important factors. One participant said that he needed, "to just listen to the guys, they just needed to be together". Another participant spoke about having to change careers post-explosion and said that, "it

terrified [him], but it was also the kick in the seat that [he] needed to make it happen, because [he] had no choice [he] couldn't hide behind the TV for the rest of [his] life.” Having answers to questions on accountability, supports, and restitution were all recognized as having an impact on personal closure. One spouse said, “the last time the guys got together was last year (2013) in February or March, to say no one was going to be held accountable, which was upsetting for the guys for sure”. She continued, “like why did this happen? To have someone held accountable, you know [she] want[s] somebody arrested, that kind of thing, but it didn't go that way”.

In the media, people spoke about wanting answers on accountability from the mill explosion. In an interview, the spouse of a husband, who perished in the explosion declared that, “our families will never be the same. I want the truth to come out. I will go to my grave requesting this” (Hunter, 2014, *Robert Luggi Jr.* para. 12). For many, accountability was the closure that they needed to move forward from the mill explosion. Closure is a very personal emotion and mindset that only the individual can define. However when the, “Criminal Justice Branch determined that no charges would be approved against BFP (Babine Forest Products) it created a greater desire for the families of the BFP mill explosion to seek closure, justice and restitution”. Continuing, those “families did not receive closure, justice or accountability on behalf of their deceased loved ones” (Woodworking Network, 2014, para. 4, 5, & 6).

Some onsite employees moved on quickly from the explosion, seeing it as an ‘accident’, utilizing established microsystems for support, and this was enough for their closure. Some participants felt they were not heard, understood, nor valued. For some, having a voice through this study, may bring closure. For others, making a decision to stop focusing on the explosion, to stop fighting for rights, and to just be done, helped them with closure. Another participant explained that he had difficulties handling day to day life, but from, “the moment [he] made a decision to move on from the explosion, [his] life changed”. Some may still be seeking closure. A spouse explained that her partner, “moved forward by choosing another career, by going to school and reaching the goal that he wanted to reach, so that helped him move forward.

### **Theme 5: Anger**

The fifth theme, anger, directs actions and decisions. This theme is strictly for coping purposes for the participants. There was lingering anger because of feelings of being, “forgotten, misunderstood, [and] unheard,” as voiced by several participants. There were examples such as having, “major emotional responses to simple day to day things,” and how triggers were contributing factors to anger. Stories from participants of loud noises sending participants into a rage, or smells of something burning sent some onsite employees right back to that moment in time, when the explosion occurred. The response to these triggers was generally anger. For some, speaking with the general public, brought on anger because, “talking to others was useless,” as one participant did not, “have the words to explain to [his]

counsellor what [he had] lived through. It was like standing in a minefield and not knowing which way to turn”.

Anger was fuelled by questions of why the explosion happened at all. For some, anger that their lives had been altered drastically. “Somebody needs to be brought to justice over what has happened. You know, two people have died. And a lot of lives have changed because of it” (CBC News, 2014 January 10, para. 4). As a coping mechanism, anger can disrupt a way of life that makes it chaotic and out of control. Most of all, some felt anger because of feelings of having no control over circumstances and daily life. A participant said that the retirement plan pre-explosion, “was to get out of there [Babine] at 62 because [he] would have a chance to put some money in the bank.” However this changed drastically for him as he was, walking into retirement with basically zero in the bank and a pension that [they] can afford to eat and that is about it, and an inability to apply [his] trade. So not only [was his] work being taken away from [him], [his] ability to enjoy retirement [was] very restricted.

This participant was very angry towards the change in planning, which he felt was out of his control.

Anger often is a symptom of not having the resources to support emotional responses. For some, the intense daily feelings of stress and fear interfered with the ability to function or focus on day-to-day tasks and relationships. One participant tells that he often had, “flashbacks, distress, and was reactive to sounds like bangs, [he] would throw things, [he] was angry, irritable and had lots of difficulty concentrating”.

Anger was openly voiced, documented, and talked about in the community of Burns Lake and in the news. For some, the physiological responses of fight or flight, which may have been established in the explosion, were still immediate responses to noise, smoke, or other triggers. This response often came out as anger, because of the release of adrenaline. Klein (2013) states that, “along with the increase in heart rate, adrenaline also gives you a surge of energy -- which you might need to run away from a dangerous situation,” (para. 5) or to stay and fight. Unresolved feelings of grief and loss can come out as anger. Some people were angry because they believed that this explosion could have been prevented.

### **Theme 6: Lack of Resources**

The sixth theme, lack of resources, relays the negative aspects of living in a northern single industry community. Some service providers explained that mental health supports were noted as being the glaring deficit throughout the findings. One service provider said that it is a problem with, “generic northern B.C., there are fewer than a dozen properly qualified registered psychologists north of Kamloops and fewer specialize in or are available to help with traumatized workers affected to the degree the Burns Lake workers were”. Travel in the winter between communities to access medical supports proved problematic as northern weather conditions affect access to services (Collier, 2006). Several participants tell of a lack of long-term supports, advocates, program development, and training in media relations. One participant reflected back and spoke about having an advocate. He said that,

it was really rough early on because none of [them] were in the frame of mind to make any life decisions like that, it was, even like Worksafe came in, [he] was in no mind to sign anything. In hindsight it was beneficial, but there was a lot of things [he] couldn't make decisions for [himself] like important decisions.

Another participant said how supports and services, "kind of just stopped so [they were] like well now what? What happened?" and, "that was in the 2012 year that's when it all stopped". Regarding media interaction, one participant said that, "how to deal with the media is something nobody is ready for and anybody who has gone through this shit should not have to deal with people digging through the corpse of Babine looking for news stories". The onsite employees needed solid supports, beginning at the explosion. One mental health clinician stated that one area lacking was, "having enough trauma counsellors onsite due to the numbers of persons involved". Furthermore, there was a lack of resources and supports for spouses/partners.

There was no formal planning for support groups for the employees, or their spouses. There was no group debriefing offered in the immediate. There was no system in place to separate the onsite employees from the general population. There was no counselling offered to the partners, at least not when counselling was required. One spouse answered a question about being contacted by any mental health workers. She said, "no, no, no. Not me personally no, I don't think that has happened to any of the wives". She said that the professional's, "main concern," was her husband only.

Utilizing extended family and wider community members are some of the strongest points of support after such trauma and if these microsystems are not being accessed, there can be wasted resources (DuBois & Miley, 2007; James & Gilliland, 2013). This was troublesome, especially in the north where, “there was limited access to specialized resources” (Schmidt, 2008, p. 15). Nobody organized microsystems to support the onsite employees, by building in programs or through implementing psychosocial training. Living in the Burns Lake community during the timeframe in question, I never read or heard of any public workshops on PTSD. Typically, people do not know about the impact or magnitude of trauma and the effects of PTSD. There were no ongoing information sessions or training for the spouses/partners and their families. There was a lack of education for the community as a whole, on PTSD.

The pressure to respond to media inquiries presented a huge setback for many of the participants as they were never educated on what to expect from newshounds relentlessly requesting interviews. In fact, there was no media debriefing session for onsite employees or family members. One account of how powerful the media can be is that when watching news reports on the explosion can, “participate in the perpetuation of PTSD symptoms” (Bui et al., 2010, p. 764). Specifically, under the right conditions, it is possible to develop PTSD through vicarious trauma; some even say symptoms can be developed from hearing repeated verbal stories of suffering and trauma (Degloma, 2009; James & Gilliland, 2013; Bui et al., 2010).

One RCMP member spoke about the importance of ensuring that sufficient mechanisms are in place to support the, “helpers,” after a significant traumatic event. An emergency response team member stated that there needs to be, “more for staff [for example] debriefing sessions. There was only one and it was a joke”.

### **Theme 7: Timing**

The seventh theme is timing. Timing is the backbone of recovery from PTSD. This theme, timing, directly relates to the needs of the individuals encountering trauma. If services or supports are offered too soon, they are ineffective. For example, counselling was offered at the hall for one onsite employee, through their extended health program at work. One participant’s spouse said that, “there was counselling available right then, but [the onsite employee] wasn’t ready for that, so [they] waited”. Trauma specialists know when to introduce services and to continue offering services even if the onsite employees decline the first offer. Many of the participants spoke about not requiring counselling when they were offered it, but as time went on, they realized they needed counselling, but did not know how to go about receiving it.

One saddened participant spoke about how,

everybody recovered in their own time at the own pace, some people were ready for the information sooner than others. There [were] people [he] worked with that returned to work immediately thinking that they didn’t want a handout and



never dealt with their issues, and they are suffering immensely to this day, have bad choices in their lives, because they never dealt with it.

The one support that the spouses of the onsite employees received was training on how to deal with their partner's PTSD symptoms. Unfortunately, these six individual training sessions did not happen until two years post-explosion. A spouse explained that the psychologist would,

have an hour each week with [her] and then he would give [her] tools to try and work with for that next session and he was very, very good, but [she] wish[ed she] could have seen him sooner. It would have been helpful. Ya, it would have been really nice if they would have had that set up for spouses within the first 6 months, or a year instead of two years later.

Educating, supporting, and training spouses on PTSD in the immediate would have been the best timing, not two years later.

Another aspect of timing is the repeated offering of rejected supports, services, and programs. The reality of living with PTSD is that symptoms are present in day-to-day functioning and can interfere with the ability to focus and succeed in the simplest of tasks. One participant explained that after the explosion,

at that point in time (short-term), [he] had no idea, there was a lot of confusion, [he] was trying to be logical, but [he] found it was very difficult to keep focused on any one thought or any one thing. [He] tried to slip into a routine, [for example they were at] home, so to sit and watch a movie because that would be

a routine that [they] would have done. Of course under those circumstances [he] had no memory of sitting down, [he] had no memory of putting in a movie, what movie it was, conversation [he] had, [his] mind was just in overdrive.

A study (Bui et al., 2010) focused on industrial disaster survivors. Findings showed that PTSD symptoms are said to evolve between six and fifteen months post trauma exposure. In addition, the researcher's findings suggest that, "regardless of the level of PTSD symptoms [a] crystallization," at the 15 month timeframe transpires, where symptoms will not evolve any further (p. 764). Basically, if PTSD symptoms do not manifest within 15 months after the traumatic event, a person is not likely to develop them later on, but interestingly, "if an individual is suffering from PTSD symptoms 15-month posttrauma, these symptoms are not likely to recede" (Bui et al., 2010, p. 764). The importance of providing timely supports and services cannot be stressed enough.

In general, timing was defined as being helpful. Several participants said about how some supports came at the needed time. One participant spoke about how,

the next time [they] were down at the Legion visiting, [the club] had gone and put [money] into an envelope, waiting for [them] to come down. [They] went down there, and they gave [them] this envelope and [they] had company coming from Germany, [in the envelope] was \$167. 43. That paid [their] way down to pick them up to bring them back [from Prince George].

All in all, good timing is about knowing when supports and services are needed and what supports are required.

### **Theme 8: Supports**

The eighth theme focuses specifically on supports. This theme covers micro, exo, and macro systems. The variety of supports and their benefits to the onsite employees was very individual. Micro supports were family, friends, general population, and local clubs. Exo-systems were those systems within the community such as job fairs, local government, and the media. Macro-systems were derived from provincial and federal government programs such as health authorities and emergency family services.

There were many supports that were helpful to the employees post-industrial disaster such as the hospital, emergency response teams, and micro-systems including family, work colleagues, Church, close friends, and counsellors through the employer. Financial support through WorkSafe B.C. was provided to the onsite employees and they also covered all medical costs such as travel to specialists and psychological evaluations. One participant told that “WorkSafe paid for everything,” and another participant stated that, “most of the services [they] received after the explosion was through WorkSafeBC”. It was noted that WorkSafeBC was the primary financial support in the immediate post-disaster and up until claims were closed. The Steel Workers’ Union and Hampton Affiliates were also noted by participants as financially supporting families being together while away from the

community, including but not limited to: food, lodging, transportation, and other basic needs.

Almost immediately, the Margaret Patrick Center opened and remained open for four months; this aspect was a huge support for the public in general, and a place for onsite employees to meet initially. One participant said that,

the local band had opened up their center, the Margaret Patrick Center, 24 hours a day initially, and it was a gathering place for everybody. In the first week [he] went up there it was employees, and spouses and kids, and management and staff. It was everybody and it was a chance for everybody just to see each other and get together and there was coffee and pastries and stuff that was being brought.

This was also great support for offsite employees and general community members to meet.

Immediately after the explosion, medical staff and emergency response teams provided life-saving supports. Survivors spoke positively about their medical treatment by the ambulance service, the Burns Lake hospital staff, the University Hospital of Northern B.C. staff, and other hospitals in urban centers. One severely injured participant explained that, “the work the girls [nurses] did that night [was] commendable, and when [he] got to Prince George later on, they said the girls did a really good job wrapping [the] guys up.” The outstanding work included many specialists focusing on individual medical plans of care and treatment. Ongoing medical treatments included a limited number of professionals coming into the

community such as an occupational therapist, while primarily the injured workers traveled to Prince George, Smithers, or Vancouver for specialized treatment. The Burns Lake Medical Clinic's staff was recognized as being a continuous support.

Ongoing mental health treatment was delivered by local counsellors or through skype with a psychologist. Some even traveled to Prince George to have counselling. Group support was established in the short-term after the disaster and proved to be beneficial for some people to overcome trauma. This group setting can add extra support as people who have an established connection, continue to work side by side in recovery. Also, often a strong bond is formed when people have shared a traumatic experience (Shehan, 1987). It is equally important to know when the person dealing with PTSD can benefit from group work or requires individual counselling.

Several participants stated that their coworkers were a great support. An example was shared where a large group of employees and their partners were hidden away from the public, at a pub in the backroom, laughing and trying to move forward with their lives. Everything was going well, but then all of a sudden, a lightning storm ensued and with a great crack of thunder, the mood in the group changed drastically. "The reaction and the realization from our partners that every one of us froze [and] freaked, the color drained from our faces, we were all vibrating, we were shaking, we were afraid". This event however, showed the employees that they were not alone, that others continued to suffer just as they did. It made one participant feel, "less alone because we all went through it together, and the feelings of being not that

unusual, not that damaged, that everybody was dealing with the same thing”. Being together and sharing those feelings and experiences was described as therapeutic.

The provincial government (macro-system), the federal government (macro-system) and local government (exo-system) were all noted as being a support. All three focussed on the mill rebuild and employment issues however, the Village of Burns Lake did create and execute special events for the employees’ families and the community at large. One report explained that, “officials were tracking down short term jobs at mills and mines in neighbouring communities, and examining transportation options to help people commute to work from Burns Lake” (CBC News, 2012 January 27, para. 3). There were job fairs, hosted by the government, “with over 20 businesses, post-secondary institutions, industry associations, training authorities and health authorities,” present (British Columbia News, 2012, para. 6).

Burns Lake received funding for several, multi-million dollar projects. “Since the Babine Forest Products mill accident in January, the Province had accelerated over \$17.4 million in investments into the Burns Lake region to support job creation and community recovery” (British Columbia News, 2012, para. 9). The provincial government initiated and completed some substantial projects in Burns Lake since the explosion. There is a new hospital, a new Native Friendship Center which is under construction, modification to forestry land contracts, and upgrades to the recreation center. The macro-systems work well for the Burns Lake community, as a whole.

There were many volunteers in the Burns Lake community that came forward as micro-systems and donated their time, money, and support to the wellbeing of the employees and all community members. These informal and semi-formal support systems are the strength of every community; they are the people that come together with others for the overall good of society. They asked for nothing in return. Mancini, Bowen, and Martin (2005) explain that, “effective social organization leads to achieving community results – broad-based shared outcomes desired by community members, such as health and well-being, safety, sense of community, and family resilience” (p. 575). There were other communities that donated money directly to the onsite employees, as well as to a tragedy fund. Teachers from out of town and their classes raised money by holding hotdog sales, and then donated the money to the onsite employees. Other gifts were provided such as gift baskets, gift certificates, and handmade keepsakes. One spouse was very touched when someone brought a box of food and said that,

it was a really nice gesture and also in that timeframe [a community member] got hold of [them], she said she had something for [them] and it was a lady in Vanderhoof that had gone and made homemade pillow cases for all the injured.

There were other accounts of cards being sent by the fire department, with a small amount of money, to just check in with the onsite employees.

Some of the employees wanted to help those families who lost their husband, father, brother, or child in the explosion. The pre-existing micro-systems, where roles

and norms already existed, supported the reunification of the Babine B shift (onsite employees). One participant took on the task of creating a webpage to inform all employees of meetings, events, and updates. Others helped in ways that they could, by being a listening ear for colleagues and providing feedback on their experience, as individuals, and as a group. The importance in exploring potential supports was clear, as not all programs and services will fit the needs of each individual. One onsite employee explained that he was very hesitant about a few services, but tried it all. He, “took advantage of every service available....and moved [his] life forward positively. [He was] trying to contribute and make [himself] better because [he] was given the opportunity to. Another participant shared a similar statement where he, was very hesitant about a few things but went and tried it and like ok [he] didn’t need it, thank you very much anyways, sampled it. If [he felt he] needed it and it was beneficial [he] went with it and if [he found] it unbeneficial, then thank you.

Over time, ceremonies and reconciliations between Hampton Affiliates, the employees, and the Burns Lake community transpired. In fact, the following year post-explosion, “hundreds of people gathered at Lakes District Secondary School to mark the one-year anniversary of the devastating explosion and fire that destroyed the Babine Forest Products sawmill” (Komadina, 2013, para. 1). Participants attended the local events as needed with some still requiring supports and services ongoing. Following is an account of what the immediate looked like for some of the onsite employees’ post-industrial disaster and what service best supported them.



## **Meta-Themes**

### **Immediate**

Initially, as a guideline, I chose the timelines as being, immediate up to four months, short-term from four months to a year and long-term as a year and ongoing. Soon after I began the interviewing process, it became apparent that my designated timeframes required adjustment as participants defined their needs in the immediate and short-term, and there was so much information in the immediate and short-term. Therefore, immediate changed to cover up to two weeks post-disaster and short-term covered the timeframe from two weeks to six months, and long-term was longer than six months.

This study begins at the point of impact, by a catastrophe that affected many people. The journey with trauma and post-traumatic stress disorder (PTSD) began the moment after that explosion and is a new existence for many. One participant described her, “biggest wish [was] to get on with a new normal. Just to have it.... go to the back, it is always going to be there, but just to.... put it on the shelf and carry on with a new normal”. The road towards recovering daily functioning was as diverse as the participants themselves. Some took a straight road with existing supports meeting their needs. For many others, their road required work and time to make recovery gains. These people accessed outside experts to help move them forward, or were taught the tools to learn how to cope, post-trauma. Finally, some participants could not gain traction, or moved forward slowly because of fear and a

hypervigilance towards danger. These people were affected by trauma so deeply that they felt they were severely impaired, psychologically (James & Gilliland, 2013); PTSD was driving their vehicle. Figure D.1 provides a visual account of how the survivors might have felt in the immediate, not knowing where to go, or which road to take for help: confusion and the unknown.



Fig. D.1

*B.C Highway (2016)*

Immediately after the explosion, the onsite employees at Babine Forest Products began taking action to help colleagues to survive. The first supports onsite were the employees themselves. Some worked together to help each other out of the mill and to safety, meeting at the muster station. Colleagues organized each other into categories, completed head counts, and named who was missing. Some wounded were triaging themselves and other employees, which perpetuated feelings of mayhem and fear. In fact, some employees returned to the burning mill to rescue and free trapped colleagues, and to help guide the injured out of the building.

The fire department and police are noted as being the first on scene after the explosion. Shortly after, the ambulances arrived, but equipment such as oxygen masks were limited, so employees shared the masks and tanks. One participant explained that, “we were basically an entire population that was hurt and we’re waiting for two ambulances to come”. Another expressed that, “one of the ambulances had summer fuel in the line and froze up and was stranded for a tow truck,” and that these technical issues, “should have been organized ahead of time,” as standard protocol. Finally, those who were not physically injured were instructed by police to drive the wounded to the hospital for treatment. Some spoke about the horror of seeing how badly their colleagues were burnt, faces and hair melted, clothing burned off, some not even recognizable, and many suffering. For those who were physically injured, the first stop was the Burns Lake hospital. There were, “multiple nurses, clerks, and medics called in. Medical doctors from Fraser Lake and Vanderhoof, as well as a burn centre phone contact”. Once at the hospital the confusion continued. One emergency response team member (ERT) described the support for medical staff as being, “minimal,” and it was all, “very disorganized,” with, “no duties directed by management as how to handle patients coming in, e.g. triage, care, and assessing, documenting, etc.”.

One doctor stated that the way the, “community first responders and the hospital staff work[ed] was in exemplary fashion”. This statement was supported by several participants’ perspectives that the general atmosphere in the hospital was one of competence and that, “nobody who made it to the hospital died”. Others were so

badly injured that they could not participate in treatment decisions, leaving this role for their partners. For partners of the survivors, emotional supports utilized were family, friends, and community. One partner said that extended family and a group of Indigenous members came forward and provided practical assistance. These micro-systems supported, comforted, and advocated for the family's needs. One participant explained that she, "felt so much support there [Vancouver], someone was keeping [her] posted all the time, asking [her] if [she] was ok."

The intention of the hall being opened in the immediate was to provide a place where all community members could come for counselling, to get general information, and to see others in the community. One participant expressed that, "there were more people who were impacted than just the workers and their families". Another participant stated that these types of gatherings were a good source of, "information," and the, "sharing with others," post-industrial disaster, was important. The platform was often around the efforts of, "all levels of government," collaborating, "to ensure most necessary services were available," to the community members. Some describe that hall as being the hub for gatherings, and it was beneficial for many as they, "really need[ed] to figure out who was where and what happened and for the mutual support". Most of the conversations between onsite employees took place, in the immediate, at the Margaret Patrick Centre, on Lake Babine Nation territory. For some of the onsite employees, seeing each other at the hall in the immediate was seen as being helpful and some smaller informal groups did form, while at the hall. One participant said that the hall, "provided [them] with a

place to meet and talk because [they] really needed to figure out who was where and what happened and for mutual support, so that [he] would say was a big influence or big help". The doors to the hall remained open until, "May 2012," so for about five months.

Within the first couple of days after the explosion, Work Safe British Columbia (WSBC)'s case workers began their contact with the onsite employees for financial support. One participant explained that it, "was really rough early on because none of us were in the frame of mind to make any life decisions," and that having someone advocate was useful because, he was, "in no mind to sign anything," regardless of the outcome. Another onsite employee who was not physically injured explained that his memory was not the same since the explosion, but recalls that the employees were being asked to sign, "waivers when we still hadn't figured out how to find the cheeks of [their] ass with both hands". What was explained to employees was, "if we sign[ed] for our workman's compensation, we were unable to sue the company, Hamptom Affiliates, if it turned out to be negligence on their part". This action was thought to be drastic and inappropriate in its timing, however, it must be reiterated that WSBC was seen by most participants as being a positive support financially, medically, and with retraining.

For some who were void of immediate physical injury, the feelings in the first couple of weeks were of being in shock and feeling numb, like being on "automatic pilot," as stated by one participant. A service provider explained that the,

“community was completely unprepared for the psychological trauma”. Some participants did not consider counselling in the immediate, some spoke with a counsellor in the first couple of weeks and others were unsuccessful in accessing the counselling that they required. Some roadblocks to obtaining counselling supports were the vast number of people present at the hall, at any given time. One participant said that,

because they were centered in a public place, [the hall] was crowded with hundreds of people 24 hours a day, they were being distracted and pulled away by whoever wanted to talk and whomever latched onto them first so the people that actually went through the explosion were being denied the service.

Another mental health support mentioned in the immediate, was the, “international coordinator,” for the “United Steel Workers Union (SWU) Emergency Response Team”. This service provider did participate in the survey and explained his role. He said that he acts as an advocate for families regarding, “critical incidents or death in the workplace”. He continued to tell that his organization has,

three legs to the stool: [1] separate the health and safety, strictly for families. [2] An extended program of very good lawyers that [the union] know and trust that helps with third party litigation. [3] [They] go into community and look up and research counselors and go in to assess and refer workers. [They] offer the choice with going with the company or counsellors in the community, to address the issue at hand.

This service provider came two times, once the day after the explosion for six days and once “three or four months [later and] spent another week”. The systemic flaw with this support is that he was only in the community for a short time, then left, so direct ongoing support with the onsite employees did not take place.

Another important support was a community task force led by the Village of Burns Lake which, “formed immediately after the disaster”. One service provider explained that out of the task force, four task force groups were created. The main vision was:

to increase the capacity for the community of Burns Lake and surrounding region to manage the transition process, and to work collaboratively to plan for and advance economic development and mill rebuild opportunities, assist workers towards re-training or re-employment, and ensure critical community services are maintained through a coordinated, adaptive, and timely response.

This meant that services were for all community members with some programs listed as: worker transition, economic development, and timber supply. This was a community based committee, “with many service providers”. Even though these supports and services were not directly attached to the recovery from PTSD, they were a great asset to the unemployed as the, “underlying theme of all the work that was done [was because of] the need for more information to be readily available for the affected workers and their families”. It is acknowledged that any stress relief was

helpful in recovering from trauma or PTSD. The general need in the community was on, “sharing information and efficiency of services on the recovery effort and prevention of duplication of service,” in the immediate and short-term.

### **Short-Term**

After the first two weeks, more supports and services were established. A breakfast was offered at the Margaret Patrick Memorial Center for all community members. This breakfast was a meeting place for the wounded, but soon some felt as if they were, “on display,” and, “having to answer questions,” from those who had not lived through an explosion. The majority of participants spoke of a change in atmosphere at the breakfasts in the short-term, from supportive to becoming politically charged. One participant stated that, “when it started to be political in nature, I would walk away from the breakfasts more angry than when I went in, so it [was] time to put it to rest”. The partaking at these breakfasts become less and less frequent for participants as some felt overwhelmed by the community’s, “anger”. One participant shared that, “the anger was the rest of the employees the people that were out of work. They lost their jobs; they lost their friends; they lost their livelihood, there was a lot of loss”. Continuing he stated that the community anger caught him, “off guard,” but as he, “thought about it and evaluated it, it made sense to [him that] people needed to get it out, but it became the norm”.

In the short-term almost all of the onsite employees, “still needed counselling of one sort or another,” said one onsite employee. A service provider explained that,



“many of the workers required access to highly trained trauma specialists, who simply did not exist in the community or nearby.” With that said, another service provider presented that, “some of the workers needed only the level of care that [could] be provided by counsellors in the vicinity, who [did] great work for the most part”. Some people were moving forward with their trauma and making improvements and adjustments in life. One participant explained that within the first five months or so, post-explosion, he was, “trying to think of what [he] could do with the education and skillset that [he had] that could support [his] family”. Everything was still very uncertain for many people and mental health issues were still a priority in the short-term. For some onsite employees, local counselling continued, while others continued with skype counselling over the computer.

Another service provided by WSBC, over a weekend period, one and a half hours from Burns Lake, was a workshop. The focus was on rebuilding life after trauma, which may have worked for some, but was not beneficial for the only participant that spoke about it. There was stress from leaving spouses, traveling alone, and the content of the workshop was depicted as not being helpful. WSBC paid for the entire trip, meals, and workshop, but partners were not included. One aspect that WSBC was very good at was making sure that the partners of the injured had family support while away at treatment in the short-term. One participant said how grateful she was to have her family members with her to come to meetings with the doctors, because she was not, “able to absorb the information, so [her] mother was taking notes”.

WorkSafeBC was also an important financial support for onsite employees in the short-term. All onsite employees, “minus one,” were entitled to WSBC compensation and one participant believes they had a loss of one week’s wages. It was commented that, “there was financial support through Work Safe, it allow[ed] them] to survive, but [didn’t] allow [them] to do any planning for anything else”. All in all, most participants were grateful for the financial support from WSBC. In order to gain this support, the injured were required to sign forms releasing liability towards WSBC and Hampton Affiliates. In hindsight, some participants disclosed that they did not understand the intention and meaning behind the documents. This lack of understanding was directly linked to the individuals’ physical, emotional, and psychological state, post-industrial disaster. The financial support began immediately after papers were signed.

For those who were transferred to larger centers, there were services and, “supports in the city”. Even while in the Vancouver hospital, a micro-system of support naturally developed and, “turned into a community for [them] in the waiting room in the ICU area because, the waiting room area was [them], like LBN or other First Nations that were there too, we kind of sought comfort in each other”. In fact, one partner spoke about coming back home. She felt, “awkward,” because, “there was no real support or help,” and she felt alone and overwhelmed. The day after their return home was just, “another day for everybody else and then what happens now? Who do [they] talk to? Like nobody told [them], like where do [they] go from here?” All the day to day support had disappeared. One partner expressed that she created

her own therapeutic support, which was to write everything down as to not forget, or miss anything. This act helped when reflecting back on what took place during the immediate and short term medical treatment of her husband. This in turn, helped her husband to understand his medical treatment and progress.

Fortunately, in the short-term two support groups were formed for the onsite-employees. One group was a physiotherapist treatment plan and the other was the Support and Information Group (SIG) that I facilitated. The physiotherapy group consisted of, “about five or six people,” who were physically injured in the explosion. They met once per week and had a project that they were completing; bird houses. One participant chuckled as he journeyed back in time, reflecting that he never did complete that bird house. Even though that therapeutic setting was under two months in duration, the real healing was within the time spent with colleagues, completing shared physiotherapy, and focusing on the mundane and simple day to day tasks in life. This group was referred to as being less structured than the support and information group (SIG).

SIG was a structured working group with weekly guest speakers beginning with the union representative. This group was a working group as the purpose was to move forward post-industrial disaster. The group ran once a week for five months, for two hours per meeting. The purposes of the guest speakers were twofold, as a distraction and providing information for day to day duties to keep the onsite employees moving forward. Once the shock of the trauma subsided, the group

became more unstructured and more of a social gathering. One participant explained that he was contacted about this support group and that,

all the survivors [were] getting together in the Church basement and [they were] going to have coffee and [they were] going to talk. There was no implication, there was no ramification, there was no do this or else. It was oh wow like [he] want[ed] to do that, [he] need[ed] to do that, and that is the most beneficial thing, the realization that the comradery was not lost. [They] were all looking at different directions in their lives and just the ability to get together [those] guys, that [he] worked elbow to elbow with for so many years, and to just find out how their lives were going was more healing. [He] got more healing in an hour of that than in 6 hours of counselling.

There were no rules around attendance and each and every onsite employee was initially contacted on the telephone, by me. This group was referred to by some of the members as, “group therapy”. When one participant spoke about, “group therapy,” it took me off guard because it was the first time that I had heard it called that. In kind, he responded, “[he] refers to this as group therapy because that’s how [they] saw it. This was like any group therapy. This was like AA- alcoholics get together and talk. More workers got together who went through something horrific and [they] talked”. One participant explained how for him it was a way to open up and talk about what he survived and how he felt. He expressed that he could not, “talk to people [about it] who weren’t actually there,” and that it was, “like talking with razor blades in your mouth, you literally have to have a connection with a guy to

open up.” Another participant reflected back to group and said that, still to this day it was the most beneficial thing [he] saw. The way it was handled that [they] kept people out that did not need to be there [and], there was a need for the survivors to get together and everybody who attended that needed it.

Others said that the group meetings had a strong presence in helping to, “put the pieces of what happened together”.

Other services that were not mandatory in the short-term focused around the needs of all employees in the community. Some of the community involvement included, “meetings at the college for retraining, there were meetings through the village, there were opportunities, there were job seminars, and work seminars,” however, some people were not informed about these supports and, “nobody knew the word was not getting out to everyone”. This was a real concern for the majority of onsite employees as they appeared to have a sense of responsibility for each other. For example during group one week, it was pointed out that about, “70% of the onsite employees had not heard about a community dinner”.

The journey to physical recovery was a steady and slow process in the short-term for many as each of the wounded had very individual injuries, programs, and therapy. WSBC continued to financially support ongoing treatment, garments, and other medical necessities. In fact, it was noted that WSBC, Babine Forest Products, and the Steelworker’s Union paid, “for people to go down and see people in the

hospital, they paid for food vouchers and stuff”. In the short-term, many of the needs of those physically wounded were continuing to be addressed such as vision and hearing issues, burns and grafting, lung problems, and therapeutic supports from rehabilitation therapy. For others their bodies had not healed in the short-term and they remained fighting to stay alive. One man’s very public battle with recovery said that the, “blast melted [his] face. [He] was tossed around like a ragdoll. With the pressure from the flames [he] was sucked up 15, 20 feet and when [he] fell, [he] tried to turn from the heat, but it was everywhere” (Hunter, 2014, para. 3). Continuing, this gentleman was in a coma for six weeks and was not expected to live and is now confined to a wheelchair (para. 3).

Several participants’ detailed how the explosion of a second mill three months after the Burns Lake explosion, hurled them into, or further into PTSD. The Lakeland mill explosion was almost a carbon copy of the Babine Mill explosion, only three months later on April 23, 2012 (CBC News, April 2012). One participant explained that he developed PTSD symptoms that were not there, “before the second explosion, like flashbacks, distress, and was reactive to sounds like bangs”. The daytime hallucinations, nightmares, sensory overload, and anger began after the second mill explosion, acquiring the label of, “late onset PTSD”.

Other community members such as the RCMP continued to show support by “participating in community events [and] supporting other police members, and attending the breakfast program at the hall as well as, “talking to workers and their

families”. The Burns Lake Ambulance was recognized as being supportive in the short-term as they unexpectedly sent a gift and a heartwarming card to the survivors. Some participants required more support in the short-term, and into the long-term.

### **Long-term**

At the six month period and for some far beyond, onsite employees were still seeking treatment for emotional, psychological, and physical issues. Others had quickly moved forward and did not display any signs of trauma or having PTSD. At the long-term timeframe, vicarious trauma had begun to work its way through to some support people including spouses and service providers. One service provider said that their agency had one debriefing session and that it was not enough. Several partners expressed that their own diagnoses of PTSD, stemmed from what they experienced with the onsite employees. One partner revealed that she was beginning to have, “little anxiety attacks worrying about suicide with him”. A couple of participants spoke about suicidal ideation in the long-term, one even contemplating goodbye letters to loved ones. Fortunately, with medication and various systems of supports, “no further lives were lost,” because of the tragedy, but many were impacted deeply.

Planning for the future and rebuilding security helped many in functioning day to day. When asked what they needed in the long-term, one participant choked back the tears and shared that, “sure there were lots of things we needed, but didn’t even know what they were”. Plans and expectations for the future were forever

changed for many of these participants. Even retirement plans were clouded. One participant explained that after contributing many years of service at the Babine mill, retiring as planned would have meant having, “some pride in having done it right”, but now felt, “disregarded”, because the opportunity to return to work was gone.

Due to struggles in communication between the mill staff and some onsite employees, a support person had, “stepped in [who was] the liason between WorkSafe, Babine, and the union for people that have problems”. This system worked well as a mediator on behalf of the employees. The diagnosis of PTSD kept others from seeking employment and as one older gentleman asked me, “who’s gonna hire me with those restrictions”, PTSD, and a matured person? The guilt that some participants had regarding the inability to work caused great stress. One participant recalled with deep emotion that, “[he] expect[ed] to put some coin in the bank, to have a cushion. [His] wife just walked out the door to a job she hates, because [he] can’t provide what [he told] her [he] would”. It is difficult to carry this type of guilt and burden.

Some participants spoke of being a support in the long-term to their colleagues, even though their own ability to enjoy day to day life was, “overshadowed with depression”. It helped in their own recovery to be able to help another person who was suffering. Some employed participants have become so, “hyper-vigilant,” to safety concerns that their day to day functioning revolves around potential disasters and safety issues. One participant expressed that he was doing his



best, “as a person working in that environment, to make sure it doesn’t happen again, and it’s stressing [him] out”.

Another psychiatric evaluation was completed in the long-term for those that continued to receive benefits. This evaluation was performed by a psychologist hired once again by WSBC. The purpose was to evaluate whether the employees were able to continue on with a return to work plan. One partner said that her spouse did not, “want to get off the couch for quite a long time, [and] had no motivation for anything”. A contributing factor was the financial uncertainty and meeting the needs of the family. One participant stated that, “the financial situations that [they were] in, it would have been better off if [he] wouldn’t have walked out of that mill”. This person was on antidepressants at one point in time, as were many of the participants. Counsellors and psychologists were recognized as being a support in the long-term, regarding PTSD symptoms.

Those physically wounded continued to be challenged with both physical and medical issues. One participant explained how the medication the doctor put him on for anxiety, anger, and irritability, also caused, “daily headaches and bruxism (grinding teeth)”. A media report on an injured employee expressed, “that he cannot return to that work because he cannot lift any weight and cannot function in a confined space after being trapped in the inferno” (Hunter, 2014, *Dirk Weissbach*, para. 7). Other medical issues consist of vision, hearing, memory and attention, headaches, and concussion derived disorders.

WSBC continued to fund treatment, and set up all resources in the patient's home community when possible, in the long-term. At the time of this study, some three years post-industrial disaster, some participants still had to travel for ongoing medical treatments. One incident was when an employee required transportation to a southern urban centre, but was delayed for several days in Prince George, "because of the amount of snow," on the ground. Another holdup to treatment, was due to the fact that one particular participant could not provide the test results that were necessary, because his doctor was, "only there two weeks a month and that test may be in Prince George or Smithers," which meant a missed deadline. Another partner articulated how she was so, "tired," of going back to retell her story to a new doctor that she just gave up trying to get the medical support she needed. This aspect of high turnover and limited resources kept some from seeking the medical attention that they required. This northern travel aspect can be dangerous for those traveling consistently for both medical appointments or for employment.

One partner shared her belief that because of living in the north, unemployed workers, had, "taken to going out of town to work," because of the lack of job opportunities in Burns Lake, at the time. She hypothesized that there were many marital breakdowns in the 2013/2014 year, because of living apart. She said that, "when these spouses go out of town, the other one misbehaves or they both misbehave," with extramarital relationships. Several participants acknowledged the increase in drug and alcohol issues by some employees. One service provider said that, "more support should be in place for drug and alcohol issues [and] activities that

are drug free [and] support when returning from treatment”. It was noted that in the first year post-industrial disaster, “the RCMP detachment in Burns Lake [had] a 200 per cent increase in domestic abuse calls” (Bernard, 2012, para. 3).

A volunteer psychologist from Prince George was a great support for some of the partners in the long-term. He had been involved with some onsite employees in the short-term. The psychologist came out of retirement to offer training for the spouses whose husbands were suffering in the long-term. Specifically, he came to meet with some of the partners that required tools to combat the effects of ongoing PTSD. This person came once a week for six weeks. He drove three hours to meet with the spouses, one-to-one, that need added support, and then returned back home. One partner explained that it was helpful to obtain the skills to deal with the challenges of living with someone with PTSD, albeit two years too late. More than half the partners expressed that they needed counselling for themselves. In fact, when asked if any professional or mental health worker had called to ask how the partners felt, the answer was a quiet and solemn no. The only counselling offered was for the onsite employee, and coping mechanism for the spouses. Most of the participants had been or still are on some sort of medication to help combat the ongoing effects of PTSD.

Finally, participants continued to speak about a community that was severely impacted even in the long-term. One participant described how the community was generally and that:

the atmosphere was there was a lot of stress. [She] could see people around town and nobody was coming out much again. Nobody was being social. It's almost was like the town shut down for over a year. It just stopped existing. People were in fear because that was a long time employer. All the sudden, that security was gone. Businesses in town suffered, even in grocery stores, it was absolutely bare minimum.

Eventually, the mill was rebuilt and thousands of community members have moved on from the explosion and, "have gotten over their own fears and are exploring new options", still some required specialized trauma treatment plans, developed resources in the community, and support to move forward from the night that the Babine Mill exploded.

### **Summary**

This rendition was of tragedy, devastation, strength, and determination to rise again out of the ashes into triumph. For some, time stands still as they continue to be impacted, from that one moment in time when the Babine Forest Products sawmill exploded and burned to the ground. Many found closure and moved forward, some have not. The participants shared one catastrophic event, with very different outcomes. The insights these participants have are valuable and will guide the recommendations. The final chapter focuses on discussion, implications, and recommendations, based on the data.

## **Chapter 5: Discussion, Implications and Recommendations:**

### **Proposed Outcomes**

Even though this horrific event and the lives of some survivors being publically displayed in the media, others felt like they were not heard. I hope this study represents their post-mill explosion experiences.

The proposed outcome of this research, was to gain valuable research information from employees, who survived the January 20, 2012 Babine Mill explosion. While completing the literature review it became obvious that there is a lack of literature on this topic. One service provider suggested that it is important for, “other communities and professionals [to] learn from these events what to expect, what core responses are necessary, and what works”. There is currently no research regarding my thesis question, “what services best support onsite employees, post-industrial disaster in a northern single industry community?”

### **Discussion**

My role as a social worker, guided me to understand how trauma impacts mental health, relationships, and the general community. I believe that the recommendations and implications for social work practice are interconnected. For these reasons, this section combines both social work practice and recommended services, as they go hand in hand.

### **Limitations**

There were limitations throughout the research process. For example, there was concern that participants might feel obligated to participate because they knew me through the community or through the group I facilitated for the onsite employees post-industrial disaster. However, personal relationships with onsite employees were not maintained outside of the aforementioned group. This aspect of feeling obligated did not seem to cause any issues as there was no contact for about eight months after the recruitment posters were placed.

Another limitation involved engagement with other professionals in the community because of their large caseloads and time restraints. In this type of situation, some of the issues were mitigated by offering multiple ways to collect data such as the survey being sent by mail, or through computer correspondence. All service providers, that participated, filled out the survey and sent it back either by mail, or via email. Although email did present an issue of no longer being anonymous to me, I addressed this by printing off the answered survey prior to reading it. I put all the surveys into a folder and did not read them until it was time for the data analysis, therefore ensuring that the surveys were confidential.

Another limitation was that the service providers and onsite employees may not have been aware of my role as a researcher and what to expect and therefore were hesitant to engage in a study. It was important to inform community members about my role and provide contact information for further questions. During the

conversations on the telephone or over the computer, I provided a review of the research goals, expectations, and answered any questions the participants had. It helped me to write up a comprehensive paragraph describing my research and then I cut and pasted it into any emails for clarification. If the service provider was interested in receiving further information, then Appendix C: Letter to Service Providers, was delivered to them.

A limitation that could not be mitigated was the time that had passed. Memories may be inaccurate due to services offered at least two years prior, or blurred because of the stress associated with trauma (Bui et al., 2010; Jamieson, 2013). Since the mill has been rebuilt, some of the employees were back to work and may not have had the spare time to meet to answer questions, or in other cases the onsite employees had left the community to work elsewhere. Also, some of the onsite employees were still recovering from PTSD. The influence of PTSD may be a limitation as the participant may not want any added stress or to reflect back on the industrial disaster. With that said, all precautions were in place to ensure that counselling services and debriefing were available, if required.

Often in northern communities, ongoing trauma such as deaths, poverty, and mental health issues tax existing resources (Collier, 2006; Delaney & Brownlee, 2009; DuBois & Miley, 2007). A limitation may be that service providers may have few documented records of the supports and services post mill explosion. Lastly, a

limitation may be restricted access to enough participants to complete this research study.

### **Recommendations and Implications for Social Work Practice**

There are several recommendation and Implications for social workers. My first recommendation focuses around a mental health protocol. A provincial mental health protocol regarding services post-disaster is essential. According to a service provider, “having an agreed upon protocol for standardized assessments of workers post-disaster, is important so that other communities and professionals can learn from these events and understand better what to expect”. A social worker’s role has often been one of responding to trauma disaster. However, there is a greater responsibility, “to think ahead and bring its resources to bear in the pre-disaster management phases of assessment, mitigation, preparedness, and in the long-term post-disaster phase” (Rogge, 2003, p. 5). This necessary provincial support would show a culture of responsibility and due diligence for the people of British Columbia. Social workers in the north should be trained with this protocol in mind.

Social workers practicing in the north need to be trained in program development. Often there are services and supports that have not been utilized because of lack of exploration. Uncovering hidden gems of services within the community, is crucial. By doing so, resources can be developed and implemented. James and Gilliland (2013) question, “what institutional, social, vocational, or personal (people) strengths or support systems are available?” (p. 71). Training on



procedures of searching for resources/services will guide a social worker practicing in the north.

Another recommendation is to train social workers on presenting information to the community at large, or to recruit experts to deliver information to the masses. For example, Burns Lake required information as a whole on PTSD. Community members would come into contact with these survivors. Educating people on how to respond in a general way to people suffering with PTSD may have helped. Delaney and Brownlee (1995) explain that “environmental press” (p. 6), can work positively to develop appropriate coping and responses during interactions for the survivors living with PTSD. In fact by, utilizing members in a community “setting, [can] shape the behaviour and development of people in that setting,” for example, the survivors (p. 6). If community members have been informed and trained how to respond and treat a survivor, they can become a support. These intimate micro systems of support, elicit a sense of caring, informed responses, and contributing to the well-being of another. Walking clubs are a good example of an appropriate resource for PTSD survivors.

The work culture was interrupted and tragic. One injured worker was in the hospital for over a year. Some employees worked “shoulder to shoulder” for two decades, as one participant stated. These people formed a bond and considered other employees as friend/family. This aspect added another layer of trauma for survivors. To further add to the shock, the cultural aspect of living in such a small community is

that you know a large percentage of the community members. There is an interconnection of the mainstream groups and clubs, and I personally know of 4 generations within a family network. The entire community felt some sort of negative impact, post-disaster. Microsystems of previous support were dealing with their own loss and grief, possibly interfering with their ability to support the onsite employees in the immediate. It is recommended to work with the community at large to bring a sense of connectedness and healing.

Another recommendation is around what to expect when living in the north. There must be specific training on northern living. Delaney and Brownlee (1995) explain how a “generalist social work practice” along with the “ecological social work perspective,” is what is required to work in the north (p. 1). There are nuances in the north such as weather conditions and a lack of services. Job shadowing over the winter months for upcoming social workers, would provide a realistic base for living in the north. Not everyone can live with the cold and snow, driving can be treacherous, so months can pass before leaving the community. A high visibility rate within the community and a need to access personal services within the community, can put strain on a practicing social worker. Gossip can also cause issues in the north as generations of family remain in the community; everyone knows everyone else’s business.

Finally, it is recommended that every practicing northern social worker be trained in immediate response when such a disaster takes place. Although, it can be

applied to other mental health issues such as: cluster suicides, murder in the community, or any event when a large group of people are impacted. The BCASW could monitor this administration of required training. In the immediate, action is required to best support onsite employees and their spouses. This means knowing to isolate the workers and the spouses. The need to cushion them from any added stress is imperative.

Following are nine recommendations stemming from this study's findings: 1) provincial trauma protocol and information sharing, 2) trauma specialist, 3) training in the north, 4) group debriefing, 5) partner's mental health, 6) support group, 7) media, 8) informing, educating, and involving the community, and 9) further research.

### **Provincial Trauma Protocol and Information Sharing**

One service provider explained that, “ideally, there should be a rapid-response protocol that would make available in some way the level of psychosocial care necessary to deal with the impact of such events at varying levels of severity”. It is noted that none of the participants spoke about involvement with an existing psychosocial protocol and my research did not produce any literature on a provincial psychosocial protocol. Emergency response protocols could be sent via electronic means from a call in center, or verbally over the telephone from a call in center. Immediate procedures would be community based, with funding through the provincial government.

There needs to be an established protocol for information sharing between the company in question, and local government to ensure that services begin in the immediate when such disasters occur. The company will provide a list of survivors to the trauma specialist, therefore ensuring that immediate services be implemented which are beneficial to the onsite employees in the immediate, short-term, and long-term.

Also required are newsworthy sources such as the television, radio, or flyers to inform the onsite employees where people are meeting for support. One spouse's suggestion was to put a, "ticker on the bottom of the news," on the television or if, "they [had] it on the radio, that would help," because, "people were not aware that there were services out there".

### **Trauma Specialist**

The training of social workers in becoming trauma specialists is the second recommendation in this study. The specialist will understand how to train the spouse and family members to recognize the symptoms and the nuances of PTSD, hence streaming information back to the specialist. Programs delivered by a social worker will include anger management, meditation techniques, drug and alcohol misuse programs, relaxation, or conflict resolution, as well as counselling, alternate approaches, reality therapy, or cognitive behavioral therapy (Breslau, 2002). The key in this instance would have been to offer counselling at strategic points in time, such as when the shock wears off. Timing was crucial in the delivery of services, for

example initial services may change the outcome in the long-term. Research shows that a single recounting of the incident can portray to the survivors that they were showing, “normal reactions to abnormal events,” and that often treatment must go far beyond the one critical incident debriefing (CID) tactic (James & Gilliland, 2013, p. 696). One service provider shared that the, “community was completely unprepared for the psychological trauma,” and that, “many of the workers needed access to highly trained trauma specialists who simply did not exist in the community or nearby”. The importance of initial group debriefing and continued group meetings is incredible. McNally, Bryant, and Ehlers (2003) explained that, “the single most important indicator of subsequent risk for chronic PTSD appears to be the severity of the number of posttrauma symptoms from about one to two weeks after the event onwards” (p. 45). The importance of information sharing was relevant as specific systems needed to be established as early detection of PTSD symptoms can make a difference for recovery.

Many symptoms require addressing in the immediate and short-term in order to have a positive effect in the long-term. For example, at the 15 month timeframe, if symptoms of PTSD have not changed, there may be a, “crystallization of symptoms,” meaning the symptoms are unlikely to change in the future (Bui et al., 2010, p. 764). Therefore, recommendations include a trauma specialist, physically being located in the community, and a member of the community, or nearby community. There is a need for one person to organize group meetings straightaway, with the onsite workers and their immediate family members. A trauma specialist could create treatment

plans and provide continuous case management, investigate further required supports, create services, utilize existing systems, and implement services. “Some sort of stepped-care rapid-response protocol, in which experts are deployed to the community to educate, coordinate, and perform triage with respect to psychological treatment and follow-up needs”, says one service provider. Backing this up, are Gilliland and James (1997) explaining that, “large teams of people with expertise in a variety of human and environmental specialties,” should be trained as, “rapid reaction teams,” to interject and then interrupt the development of symptoms and try to, “restore stability and equilibrium to the environment” (p. 21). In the immediate, a trauma specialist needs to be on the ground and frontline, meeting with the survivors. Assessing appropriateness of a person participating in an initial group debriefing or individual debriefing, is key. Groves (1999) says that, “groups break the isolation and enable [people] to tell their stories in the presence of others who closely identify with the experience” (p.126). A local social worker can formulate a group immediately for the onsite employees, until a specialist can be accessed. It will take a trauma trained social worker to engage with government to ensure best practice is being implemented in situations such as an industrial disaster. This trauma specialist would work with the provincial government regarding what protocols and services are required, post-disaster and to complete ongoing assessments of protocols. Ideally, this person would hold a different work position in the community, as a social worker, and one who could move into trauma work in the event of a disaster.

### **Training in the North**

The third recommendation is training a trauma specialist on living in the north and how to access existing support systems within the village or community. The dynamics and interactions in smaller northern communities are very different than southern urban centers. Programs and services created in urban centers fall short of meeting the needs in a northern community (Delaney & Brownlee, 2009; Schmidt, 2008). Supports in urban centers are often more plentiful whereas, the north often has limited resources so creativity and a more intimate micro-system approach is required. The importance of training upcoming northern social workers to work specifically in northern communities is because of the need to uncover hidden resources. Resources can be as wide-ranging as a government system, an elder in the community or a conversation with another person. Literature on northern areas frequently discusses the north as often lacking in formal resources (Collier, 2006; Schmidt, 2008).

Educators, universities, and government need to focus on traumatic and disaster correlated research while recognizing the significance of, “social workers preparing social workers to play well with others in carrying out ethical, effective, and efficient disaster management” (Rogge, 2003, p. 2). A service provider recognized this importance and stated that, “we need a focus on training in the north [because] the more severely affected needed treatment that required a higher skillset”. James and Gilliland (2013) noted that PTSD, “may also disappear from conscious awareness and

re-emerge in a variety of symptomatic forms months or years after the event” (p. 150). The individual journeys required specific treatment and support at specific times. If survivors cannot access the appropriate support services to work on the presenting issues, long-term prognosis can be negative (James & Gilliland, 2013).

If the province has northern trained trauma specialists available for emergency response, then that specialist can go into the community and train the social workers on the aspects of PTSD and trauma. Services, programs, and ongoing assessments will guide the trauma specialist in providing initial time-sensitive support, up until support systems are utilized, created, or discovered. Not to say that the survivors’ symptoms are gone forever, on the contrary, additional treatment may be required for the same symptom, only to disappear again, and so on. *Interrupting the symptoms*, at critical times can make a difference to daily functioning and moving past PTSD symptoms. Northern social workers require training specific to the north, the issues of living in the north and the strength of northern communities, because often in the north, specialists cannot physically reach the community in question for the first day or two.

### **Group Debriefing**

The fourth recommendation is for the industrial disaster survivors to come together to debrief. The purpose of the initial meeting is for the survivors to talk about their experience with those who experience the same phenomenon. To debrief or not, is the choice of the individual, but the offer needs to exist. One description of



debriefing is an, “intervention,” over thoughts, reactions and feelings that, “occur after a traumatic event, and to decrease their impact and facilitate the recovery of normal people having normal reactions to abnormal events” (James & Gilliland, 2013, p. 696). Also, onsite employees need to make sense in their own minds of, what is happening? Where was everyone when the disaster happened? Where are the injured? Equally important is putting the pieces together on how the phenomenon came about. Some participants speak of how cathartic it is to be able to create a timeline of events that took place, not to dwell on the explosion itself, but to piece together the missing facts.

### **Partner’s Mental Health**

The fifth recommendation focuses on the mental health and wellbeing of the families of the survivors. Spouses in particular require a support group with other spouses and partners. This group can be managed by a local social worker, with the support of a trauma specialist. There is great value in having the partners together for support and for a social worker to train and provide skills to combat the symptoms the onsite employees may display. Ongoing counselling is included in the recommendations for the partners. The spouses’ main support system, their partners, did not have the emotional resources to support their spouses struggling through a post-industrial disaster. There needs to be individual support, communication, and options for their own mental health. From the time of the explosion, some partners’ roles changed from a partnership to becoming a caretaker, a counsellor, and a nurse.

### **Support Group**

The sixth recommendation is to develop an ongoing support group for the onsite employees. The role of facilitator for the group is a social worker in the community. Once again, a program developed by a trauma specialist will guide social workers in facilitating a support group. The purpose of this ongoing service is to, 1) monitor symptoms and behaviors, 2) provide information, 3) regulate discussions on the actual incident and to focus on daily living with trauma, 4) to bring a sense of normalcy to each participant as they realize they are not alone in their feelings, thoughts, and recovery. One service provider recommends immediate engagement and, “regular follow up to offer assistance as the initial shock wears off. Family interaction and financial matters are important. Grief counselling [and] giving the survivors a forum to express their feelings and thoughts is good”.

### **Media**

The seventh recommendation stems from media interaction. There is a need for public messaging in the immediate to provide support and service details and updates. One option is for the local or provincial television stations to advise community members of meeting locations. One participant said it would be beneficial to run a ticker tape across the bottom of the news channel on TV. Radio announcements and the development of an immediate webpage will help to ensure all community members have access to important information. Local flyers posted around the community and on rural mailboxes will help to make contact. Once again, having a

trauma specialist to contact the survivors will ensure that accurate information is shared on locations of supports and services.

The second need regarding the media is for the onsite employees, wives, and adult children to be informed on what newshounds can bring to their lives by pressure and expectations. Educating survivors and their family on the media will prepare them to fully understand the potential consequences of sharing with the country through the media. A trauma specialist will create a forum for training around the media such as: community information sessions, workshops, and debriefing sessions.

### **Informing, Educating, and Involving Community**

The eighth recommendation is for a trauma specialist to provide information sessions to the community at large. It is important for the specialist to connect with the management of the company to educate them on important steps in the healing process and the impact of PTSD for the survivors and families. Focus is on reassuring the onsite employees that the company is taking the necessary steps to rectify the issue and what is being done to protect the employees in the future. This act of safety planning will have a direct impact on recovery for the employees. By announcing mitigation tactics, the onsite workers will feel protected and valued by the company.

A specialist should be prepared to educate the community at large including company managers and supervisors who are working with the employees, in the future. Information will focus on trauma, PTSD, recovery, and how symptoms can

change and develop strategies for anyone involved with the survivors. It is crucial to understand that a diagnosis of PTSD has some very specific challenges such as the timing of services, the depth of impact, and uncovering resources within the community to become support systems. This process of uncovering potential resources is just that, a process. A trauma specialist will go into the community to ask the question: what or who can be a potential resource?

### **Further Research**

It is apparent from the lack of research on this topic that further research is crucial. It is through researching a phenomenon that insight and clarity are produced. For example, what core responses were mandatory and how do we know this? Research! Professionals learn about human nature and events by researching. Johnson (2012) expressed that research, “adds to the stock of global knowledge and provides the source of new ideas, methods, techniques and innovation across a whole range of disciplinary and multi-disciplinary areas” (para. 8). Without research, mistakes are repeated, time is lost, and money spent on initiatives, supports, and services that are not required or that don’t fit. Industrial disasters are going to become more frequent moving forward, as industry is continuously pushing to becoming more productive and to make more money.

This is the first study that I am aware of, that focuses on my topic of *What Services Best Support Onsite Employees, Post-Industrial Disaster in a Northern Single Industry Community?* Added research will support the findings in this study

and help guide humans who may suffer an industrial disaster. We only know, what we know, because of people's experiences. It is those experiences that should be told, shared, and used moving forward.

### **Learning and Experience Gained as a Researcher**

The experience gained from conducting research and general role as a researcher, was priceless. At times it was very difficult to remain focussed as there was so much information, emotions from the participants and so much diversity in personal situations. I learned a lot about compartmentalizing and the importance of following steps and procedures such as Braun and Clarke's (2006) six steps of thematic analysis. If one step is missed, then the analysis is confusing and disjointed, and the potential to miss important information is increased. The process of organizing and labeling was time-consuming and overwhelming. I recall several times when I felt blocked, not able to write or focus on tasks that needed to be completed. Specifically, I recall a purposeful action to help my energy flow. I collected art supplies and I began to create artwork. I spent two days doing nothing, but creating art. It was then that I was able to take that energy and apply it back to my thesis. Creating energy flow within myself helped me to become "unblocked".

Timing was also an important experience as I realized that the timing worked positively for my thesis and also for the participants in their recovery from PTSD. The creation of the SIG group is one example of how important timing is. Even though this group formed two weeks post-disaster, an immediate debriefing would

have been timelier; I learned this through my literature review process. With that said, it was an easy route to find the means to run SIG. I trusted that it was the right decision to create this group, because the supports came so easily. I learned from the participants that providing timely services for the onsite employees was important. Knowing when to connect the individual with various support systems was key.

During the study I could see how community was relevant. For example, all the weekly guest speakers at SIG were from the community. The intention was to create a link between the survivors and others in the community, with ongoing support as the desired outcome. I heard stories of how seemingly common questions from community members to the onsite workers, could be taken out of context because of the trauma. It was interesting to me that general population could either be a support or a hindrance for the onsite employees. Community members are an important aspect in healing from PTSD. The skillset and insights that I gained from completing this study, will guide my practice into the future.

### **Summary**

This chapter meets the goal of facilitating the onsite employees in sharing their information. In the discussion section, an overview of data and examples of the study's eight themes were reviewed. From that information, nine recommendations were created for the wellbeing and recovery of onsite employees, partners, families, and community, post-industrial disaster. "When Disaster Strikes," is a fitting title for the occurrence of the mill explosion. It certainly was a disaster, and happened

suddenly with great impact. The ripple effect was obvious moving from onsite-employees, to off-site workers, to families, health workers, service providers, businesses, the community, and the owners of the mill, Hampton Affiliates.

Overall, the main dominant overarching theme was in the immediate regarding connecting timing and recovery strategies. The four critical immediate supports were the onsite employees (who rushed back into the mill to help rescue other workers, and those that helped triage each other), the Burns Lake hospital, the various Emergency Response Teams (Ambulance Services, Royal Canadian Mounted Police, Burns Lake Fire Department), and the Lake Babine Nation hall. However, in the immediate it is imperative to isolate mass victims, and spouses in a non-clinical setting with a therapist and social worker on the premise; this did not transpire. A recommendation from James and Gilliland (2013) is that the social worker's focus is "to serve in a *"witness"* role to observe, listen, and not do anything other than "be with" the client and allow the client to feel" (441). One of my primary insights and gained experience with the onsite employees is regarding compounding stress, post-disaster. Through the process of a literature review, I found little completed studies for mass trauma and the benefits of group isolation. However, authors such as James and Gilliland (2013) support this ideology by telling that, "the primary task of any group therapy is to help people regain a sense of safety and of mastery because of the shared sense of having gone through the trauma," together (p. 178). Survivors need to reclaim as much as their physical homeostasis as possible. Their minds require peace and safety.

Educating them on PTSD, what to expect, and provide them with tools for symptoms

are goals. As a social worker, the primary role is to uncover the needs of the onsite employee, and to research or educate community on those needs, and reassess community resources by continual asset mapping. A social worker's role is to advocate for the survivors and families to ensure appropriate services are in place. A social worker is an organizer, planner, and facilitator; we make things happen. This study and the knowledge attached to it have enhanced my skill level as a social worker beyond my expectations. I now consider myself skilled in PTSD, I have the shared experiences of people who have survived an industrial disaster and I have a confidence in my ability to utilize this information in my practice. Reflecting back on this process, the importance of this research is staggering.

For those people who have shared their experiences with honesty and thoughtfulness, I am grateful.



## References

- Absolon, K., & Willett, C. (2005). Putting ourselves forward: Location in Aboriginal research. In L. Brown & S. Strega (Eds.). *Research as resistance: Critical, indigenous, and anti-oppressive approaches* (pp. 97-126). Toronto, ON: Canadian Scholars' Press.
- Allen, R. E. (Ed.), (1992). *The Oxford Dictionary of current English*. New York: Oxford University Press.
- Ambrosi, J. (2009). *Hillcrest mine disaster cemetery site*. Retrieved from <http://www.crownofthecontinent.net/content/hillcrest-mine-disaster-cemetery-site/cot7AA1BC03B534CEB92>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5<sup>th</sup> ed.) Arlington, VA: American Psychiatric Association.
- Arriving in Mumbai. (2013, June 24). *Business Standard Limited*. Retrieved from [http://www.business-standard.com/article/news-ani/arriving-in-mumbai-uttarakhand-flood-victims-laud-army-s-rescue-effort-113062400585\\_1.html](http://www.business-standard.com/article/news-ani/arriving-in-mumbai-uttarakhand-flood-victims-laud-army-s-rescue-effort-113062400585_1.html)
- BC Highways, (2016). *Picture*. Retrieved from [https://www.google.ca/search?q=canada+federal+government+highway+pictures&safe=active&biw=1600&bih=775&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwim4seJhaHMAhUE9GMKHcZoCjYQ7AkILw#imgre=\\_](https://www.google.ca/search?q=canada+federal+government+highway+pictures&safe=active&biw=1600&bih=775&tbm=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwim4seJhaHMAhUE9GMKHcZoCjYQ7AkILw#imgre=_)
- Babine Forest Service Mill Fire: Burns Lake community picks up the pieces as the smoke clears (2013, October 23). *The Huffington Post Canada*. Retrieved from <http://www.huffingtonpost.ca/2012/01/22/babine-forest-sawmill-fire->

explosion\_n\_1221747.html

Barnes, M. (2016). *Twilight's Folly* [Picture]. Retrieved from

<https://www.facebook.com/maureen.barnes.58?fref=ts>

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544-559.

Retrieved from <http://www.nova.edu/ssss/QR/QR13-4/baxtor.pdf>

Beitler, S. (2009). Stellarton, NS coal mine gas explosion, Nov 1880. *GenDisaster*.

Retrieved from <http://www3.gendisasters.com/mining-explosions-accidents/12369/stellarton-ns-coal-mine-gas-explosion-nov-1880>

Bernard, R. (2012, September 1). Burns Lake RCMP see huge spike in domestic abuse. *News 1130*. Retrieved from <http://www.news1130.com/2012/09/01/burns-lake-rcmp-see-huge-spike-in-domestic-abuse/>

Bishop, A. (1994). *Becoming an ally: Breaking the cycle of oppression*. Halifax: Fernwood Publishing.

Bliss, D., & Meehan, J. (2008). Blueprint for creating a social work-centered disaster relief initiative. *Journal Of Social Service Research*, 34(3), 73-85.

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

<http://dx.doi.org/10.1191/1478088706qp063oa>

Breslau, N. (2002). Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. *Canadian Journal of Psychiatry*, 47(10), 923-929. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=8732001&login.asp&site+ehost-live&scope+sit>

British Columbia Association of Social Workers (2015). *BCASW speaks to the responsibility to secure safety for all children*. Retrieved from

<http://www.bcasw.org>

British Columbia News (2012). *Economic development workshop provided for Burns*

*Lake area officials*. Retrieved from <https://news.gov.bc.ca/stories/economic-development-workshop-provided-for-burns-lake-area-officials>

Broughton, E. (2005, May). The Bhopal disaster and its aftermath: A review. *Environ Health*, 4(6). doi:10.1186/1476-069x-4-6

Bui, E., Tremblay, L., Brunet, A., Rodgers, R., Jehel, L., Very, E., Schmitt, L., Vautier, S., & Birmes, P. (2010). Course of posttraumatic stress symptoms over the 5 years following an industrial disaster: A structural equation modeling study. *Journal of Traumatic Stress*, 23(6), 759-766.

Business Dictionary, (2013). *Single Industry*. Retrieved from

<http://www.businessdictionary.com/definition/industry.html#ixzz2aBSZiCGM>

Canadian Mental Health Association (2012). *British Columbia Division*. Retrieved from <http://www.cmha.bc.ca/about-us/bc-branches>

Canadian Wood Products (2012, April 5). Re: Burns Lake Tragedy Fund Society can't get name of sawmill employees due to Privacy Act [online forum

comment]. Retrieved from <http://www.canadianwood.ca/en/news/burns->

lake-tragedy-fund-society-can-t-get- names-of-sawmill-employees-due-to-privacy-act.html

Carlson, B., E. & McNutt, L., A. Choi, D., Y., & Rose, I., M. (2002). Intimate partner abuse and mental health: The role of social support and other protective factors. *Violence Against Women*, 8(6), 720-745. doi: 10.1177/0778010222183251

CBC News (2012, January 27). *Province to find jobs for Burns Lake mill workers*. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/province-to-find-jobs-for-burns-lake-mill-workers-1.1166073>

CBC News (2012, April 23). *Prince George sawmill 'ball of flame' kills 1, injures 24*. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/prince-george-sawmill-ball-of-flame-kills-1-injures-24-1.1155827>

CBC News (2014, January 10). *No charges in deadly Burns Lake sawmill explosion*. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/no-charges-in-deadly-burns-lake-sawmill-explosion-1.2492077>

CBC News (2014, Feb 27). *Fukushima radiation hit B.C. earlier than expected*. Retrieved from <http://www.cbc.ca/news/canada/nova-scotia/fukushima-radiation-hit-b-c-earlier-than-expected-1.2552718>

CBC Radio Canada (2013). *Mine explosion rocks Springhill* [CBC digital archives]. Retrieved from <http://www.cbc.ca/archives/categories/economy->

business/natural-resources/springhill-mining-disasters/mine-explosion-rocks-springhill.html

Celebrate Boston (2013). *Pemberton mill collapse Image Gallery*. Retrieved from <http://www.celebrateboston.com/image/pemberton-mill-collapse/001.htm>

Cheng, J. (2013, June). Bangladesh garment-factory collapse. *Time World*. Retrieved from <http://world.time.com/2013/06/05/occupational-hazards-the-worst-industrial-disasters-of-2013/slide/bangladesh-garment-factory-collapse/>

Collier, K. (2006). *Social work with rural peoples* (3<sup>rd</sup> ed.). Vancouver: New Star Books Ltd.

Crazy Highway Intersection (2009). *Picture*. Retrieved from <http://pcgladiator.blogspot.ca/2009/01/crazy-highway-intersections.html>

Creswell, J. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. USA: SAGE publications, Inc.

DeCuir-Gunby, J., Marshall, P., & McCulloch, A. (2011). *Developing and using a codebook for the analysis of interview data: An example from a professional development research project*. 23(136), 136-155.

Degloma, T. (2009). Expanding trauma through space and time: Mapping the rhetorical strategies of trauma carrier groups. *Social Psychology Quarterly*, 72(2), 105-122. Retrieved from <http://www.jstor.org/stable/25593913>

Delaney, R., & Brownlee, K. (Eds.) (1995). *Northern social work practice*. Ontario, Canada: Lakehead University.

- Deshmukh, N., & Nair, M. (2008). Floods in Mumbai: A case study of the psychological impact and volunteers' help. *Asia Pacific Journal of Social Work and Development, 18*(2), 36-45. Retrieved from <http://proxy.library.unbc.ca:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=39755989&site=ehost-live&scope=site>
- Dhillon, S. (2013, July 22). Work begins on replacement for exploded B.C. sawmill. *The Globe and Mail*. Retrieved from <http://www.theglobeandmail.com/news/british-columbia/work-to-replace-exploded-bc-sawmill-begins/article13358976/>
- DuBois, B., & Krogsrud Miley, K. (2007). *Social work: An empowering profession*. MA, USA: Allyn and Bacon.
- Ersing, R., & Kost, K. (Eds.) (2012). *Surviving disaster: The role of social networks*. Chicago, Illinois: Lyceum Books Inc.
- Five Worst Industrial Disasters: From Bangladesh to Chernobyl, a look at some of the most devastating accidents in world history (2013, May 10). *Associated Press*. Retrieved from [http://www.salon.com/2013/05/10/5\\_worst\\_industrial\\_disasters\\_ap/](http://www.salon.com/2013/05/10/5_worst_industrial_disasters_ap/)
- Furedi, F. (2007). The changing meaning of disaster. *The Royal Geographical Society, 39*(4), 482-489. Retrieved from [www.encore.unbc.ca:50080/jstor/stable/40346069](http://www.encore.unbc.ca:50080/jstor/stable/40346069)

- Gilliland, B., E., & James, R., K. (1997). *Crisis intervention strategies*, (3<sup>rd</sup> ed.). California, USA: International Thomson Publishing Inc.
- Government of British Columbia (2016). *Emergency Social Services: Emergency program act*. Retrieved from <http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/volunteers/emergency-social-services>
- Groves, B. M. (1999). Mental health services for children who witness domestic violence. *Domestic Violence and Children*, 9(3), 122-130.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*. 29(2), 75-91.
- Guba, E. G. (2012). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Technology Research and Development*, 29(2), 75-91.
- Hoekstra, G., & Carman, T. (2012, April 25). Two dead, 22 injured after massive explosion destroys Prince George sawmill: Second deadly B.C. sawmill explosion this year. *Vancouver Sun*. Retrieved from <http://www.vancouversun.com/dead+injured+after+massive+explosion+destroy+s+Prince+George+sawmill/6506952/story.html>
- Hollon, S., D., Thase, M., E., & Markowitz J., C. (2002). Treatment and prevention of depression. *Association for Psychological Science*, 3(2), 39-77. Retrieved from <http://proxy.library.unbc.ca:2142/stable/40062329>

- Honkeiko Colliery Mining Disaster. (2015). In *Encyclopædia Britannica*. Retrieved from <http://www.britannica.com/event/Honkeiko-colliery-mining-disaster>
- Hsieh, H., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15, 1277-1288. doi: 10.1177/1049732305276687
- Hunter, J. (2014 March 6). Survivors of the Babine mill explosion: 'Our families will never be the same'. *The Globe and Mail*. Retrieved from <http://www.theglobeandmail.com/news/british-columbia/survivors-of-the-babine-mill-explosion-our-families-will-never-be-the-same/article17362407/>
- James, R.K., & Gilliland, B.E. (2013). *Crisis intervention strategies*. CA, USA: Brooks/Cole.
- Jamieson, A. (2013, January). *Beyond PTSD: Traumatic responses in community mental health*. Training presented at the workshop of Positive Human Development, UNBC.
- Johnson, P. (2012, March 19). The importance of academic research [reasons why research is necessary]. Retrieved from <http://www.news.uwa.edu.au/201203194542/vice-chancellor/importance-academic-research>
- Klein, S. (2013, April 19). Adrenaline, cortisol, norepinephrine: The three major stress hormones, explained. *The Huffington Post*. Retrieved from [http://www.huffingtonpost.com/2013/04/19/adrenaline-cortisol-stress-hormones\\_n\\_3112800.html](http://www.huffingtonpost.com/2013/04/19/adrenaline-cortisol-stress-hormones_n_3112800.html)



- Komadina, S. (2013). Burns Lake marks one year anniversary of mill explosion. *CFTK TV*. Retrieved from <http://www.cftktv.com/News/Story.aspx?ID=1867589>
- Lane, P., Bopp, M., Bopp, J., & Norris, J. (2002). *Mapping the healing journey: The final report of a First Nations research project on healing in Canadian Aboriginal communities* (APC 21 CA). ON, Canada: Solicitor General Canada.
- Linn, D. (1995). *Sacred space*. NY, USA: Random House, Inc.
- Lucas, R. A. (1971). *Minetown, milltown, railtown: Life in Canadian communities of single industry*. Toronto: Oxford University Press.
- Mancini, J. & Bowen, G., & Martin, J. (2005). Community social organization: A conceptual linchpin in examining families in the context of communities. *Family relations*, 54(5), 570-582.
- Marshall, E., & Phillips, M., & Williamson, K. (2011). Rethinking resilience from Indigenous perspectives. *Canadian Journal of Psychiatry*, 56(2), 84-91. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=59287567&login.asp&site=ehost-live&scope=site>
- Mauch, J., E., & Park, N. (2003). *Guide to the successful thesis and dissertation: A handbook for students and faculty*. Florida: Taylor & Francis Group.
- Mayo Clinic. (2015). *Diseases and conditions: Post-traumatic stress disorder (PTSD); Definitions*. Retrieved from: <http://www.mayoclinic.org/diseases-conditions/post-traumatic-stress-disorder/basics/definition/CON-20022540>

- McAllister Groves, B. (1999). Mental health services for children who witness domestic violence. *Domestic Violence and Children*, 9(3), 122-132. Retrieved from <http://www.jstor.org/stable/1602786>
- McNally, R.J., Bryant, R.A., & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science in the Public Interest*, 4(2), 45-79 Retrieved from <http://www.jstor.org/stable/40062294>
- Merriam-Webster, (2013). *An encyclopedia britannica company*. Retrieved from <http://www.merriam-webster.com/dictionary/manufacturing?snow=0&t=1381251146>, 2013. An Encyclopedia Britannica Company
- Merriam-Webster, (2015). *An encyclopedia britannica company*. Retrieved from <http://www.merriam-webster.com/dictionary/journey>
- Milling (2013). *In American Heritage online dictionary of the English Language* (4<sup>th</sup> ed.). Retrieved from <http://www.thefreedictionary.com/milling>
- Mullaly, R. (1997). *Structural social work: Ideology, theory, and practice*. Canada: McClelland & Stewart Inc.
- Nardinelli, C. (2008). Library of economics and liberty. *The Concise Encyclopedia of Economics*. Retrieved from [http://www. Econlib.org](http://www.Econlib.org)
- Neuman, W. L. (2010). *Social research methods: Qualitative and quantitative approaches*. MA, USA: Allyn and Bacon.
- Nozick, M. (1992). *No place like home: Building sustainable communities*. ON, Canada: Canadian Council on Social Development.

O'Malley, M. (2012, May 9). Westray remembered: Explosion killed 26 N.S. coal miners in 1992. *CBC News*. Retrieved from <http://www.cbc.ca/news/canada/nova-scotia/westray-remembered-explosion-killed-26-n-s-coal-miners-in-1992-1.1240122>

Pemberton Mill Collapse 1860 (2013). In *Celebrate Boston*. Retrieved from <http://www.CelebrateBoston.com>

Peres, J., F., & Moreira-Almeida, A., Nasello, A., G., & Koenig H., G. (2007). Spirituality and resilience in trauma victims. *Journal of Religion and Health*, 46(3), 343-350. Retrieved from <http://www.jstor.org/stable/27513020>

Reddy, N. (2013). Re: Prashanthi council: Floods in north India [online letter]. Retrieved from <http://www.sathyasai.org/files2013/20130628DisasterReliefUttarkhandFlood.pdf>

Regehr, C., LeBlanc, V., Jelley, R. B., Barath, I., & Daciuk, J. (2007). Previous trauma exposure and posttraumatic stress disorder symptoms as predictors of subjective and biological response to stress. *Canadian Journal of Psychiatry*, 52(10), 675-683. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=27223446&login.asp&site=ehost-live&scope=site>

Regional District of Bulkley-Nechako (2012). *Protective Services*. Retrieved from <http://www.rdbn.bc.ca/protectiveservices/emergency-preparedness/rdbn-emergency-plan/205-regional-district-of-bulkley-nechako-emergency-preparedness-plan>

- Rogge M., E. (2003). The future is now: Social work, disaster management, and traumatic stress in the 21st century. *Journal of Social Service Research*, 30(2). doi: 10.1300/J079v30n02\_01. Retrieved from <http://www.haworthpress.com/web/JSSR>
- Royce, D. (1991). The way research proceeds. *Research methods in social work* Chicago: Nelson-Hall.
- Sandelowski, M. (2004). Qualitative meta-analysis. *The SAGE Encyclopedia of Social Science Research Methods*. Retrieved from <http://srmo.sagepub.com/view/the-sage-encyclopedia-of-social-science-research-methods/n782.xml>
- Schmidt, G. (2008). *Professional work in remote northern communities: A social work perspective*. BC: The Community Development Institute at UNBC.
- Shehan, C., L. (1987). Spouse support and Vietnam veterans' adjustment to post-traumatic stress disorder. *National Council on Family Relations*, 36(1), 55-60. Retrieved from <http://www.jstor.org/stable/584648>
- Siva, M. (2015). Tackling the flood of insurance claims. *The Hindu Business Line*. Retrieved from [http://www.thehindubusinessline.com/features/investment-world/macro-view/tackling-the-flood-of-insurance-claims/article4889009.ece](http://http://www.thehindubusinessline.com/features/investment-world/macro-view/tackling-the-flood-of-insurance-claims/article4889009.ece)
- Smith, D. (2013, October). Fukushima radiation now a global disaster: Japan finally asks the world for help, two years too late. *International Business Times*. Retrieved from

<http://www.ibtimes.com/fukushima-radiation-now-global-disaster-japan-finally-asks-world-help-two-years-too-late-1416058>

Stanke, C., Murray, V., Amlot, R., Nurse, J., & Williams, R. (2012). The effects of flooding on mental health: Outcomes and recommendations from a review of the literature. *US National Library of Medicine National Institutes of Health*. doi: 10.1371/4f9f1fa9c3cae. Retrieved from [http://www. Ncbi.nlm.nih.gov/pmc/articles/PMC3461973/](http://www.Ncbi.nlm.nih.gov/pmc/articles/PMC3461973/)

Strega, S. (2005). The view from the poststructural margins: Epistemology and methodology reconsidered. In L. Brown & S. Strega (Eds.). *Research as resistance: Critical, indigenous, and anti-oppressive approaches* (pp.199-235). Toronto, ON: Canadian Scholars' Press.

Suedfeld, P. (1997). Reactions to societal trauma: Distress and/or eustress. *International Society of Political Psychology*, 18(4), 849-861. Retrieved from <http://www.jstor.org/stable/3792213>

The American Heritage Dictionary of the English Language (2012). *Definition of disaster*. Retrieved from <http://oxforddictionaries.com/definition/english/disaster>

The Cranbrook Herald (1902, May 29). Fernie's horror: Explosion in the coal mines kills from 100 to 150 miners. *The Cranbrook Herald*. Retrieved from <http://www.crowsnest.bc.ca/fernie01.html>

The Globe and Mail (2011, August 10). Whitby steel mill explosion sends two workers to hospital. *The Globe and Mail*. Retrieved from

<http://www.theglobeandmail.com/news/toronto/whitby-steel-mill-explosion-sends-two-workers-to-hospital/article590068>

The Oxford Dictionary (2016). Retrieved from

<http://www.oxforddictionaries.com/us>

Thompson, M. (2010). Bringing dogs to heal. *Time*, 176(21), 54-57. Retrieved from

<http://encore.unbc.ca:50080/ebsco-web/ehost/detail?sid=173448ca-7692-412c-a9ea-8bfb58c870%40sessionmgr4&vid=1&hid=17&bdata=JnNpdGU9ZWWhvc3QtbGl2ZSZzY29wZT1zaXRl#db=aph&AN=55204125>

Van Wormer, K. (1995). *Alcoholism treatment: A social work perspective*. Chicago: Nelson-Hall Publishers.

Village of Burns Lake (2013). Retrieved from

<http://www.burnslake.ca/village/1/home>

Village of Burns Lake (2013). *Economic Development: Burns Lake recovery strategy*. Retrieved

from [http:// http://ecdev.burnslake.ca/burns-lake-recovery-strategy/](http://ecdev.burnslake.ca/burns-lake-recovery-strategy/)

Voydanoff, P. (1995). A family perspective on services integration. *Family Relations*, 44(1), 63-68.

Weidinger, P. (2011, April 2). 10 more American disasters. *Listverse*. Retrieved from <http://listverse.com>

Westhues, A., Cadell, S., Karabanow, J., & Maxwell, L., & Sanchez, M. (1999). The creation of knowledge: Linking research paradigms to practice. *Canadian Social Work Review*, 16(2), 129-149.

Woodworking Network (2014). *Independent Inquiry into Babine Forest Products*

*Mill Explosion*. Retrieved from

<http://www.woodworkingnetwork.com/wood-market-trends/woodworking-industry-trends-press-releases/Independent-Inquiry-into-Babine-Forest-Products-Mill-Explosion-242847451.html>

Yin, R. (1999). Enhancing the quality of case studies in health services research.

*Health Services Research*, 34(5Pt.2), 1209-1224. Retrieved from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1089060/?tool=pmcentrez>

Zapf, M. (2009). *Social work and the environment: Understanding people and Place*. Canada: Canadian Scholars' Press Inc.

## Appendix A

### Interview Questions: Onsite Employee

Note: This interview is structured on the assumption that a trusting relationship has been created with the participant and that referral information on support services is available. Information on the extent of the participants' involvement directly with the industrial disaster will be gained prior to these questions.

Question #1: What services or supports did you require immediately after the industrial disaster? What services were provided or offered? How were you feeling at the time?

Question #2: How were these services or supports beneficial? What was lacking in services?

Question #3: What services or supports did you require in the short-term after the industrial disaster? What services were provided? How were you feeling at the time?

Question #4: How were these services or supports beneficial? What was lacking in services?

Question #5: What services or supports did you require in the long-term after the industrial disaster? What services were provided? How were you feeling at the time?

Question #6: How were these services or supports beneficial? What was lacking in services?



## When Disaster Strikes

Question #7: From your personal experiences, what are the top 3 priorities for a community when industrial disaster impacts a northern community?

Question #8: What services provided outside of the community would you say need modification or changes?

Thank you for your time and honesty in answering these questions. Provide a card with your contact information.

---

## Appendix B

### Interview Questions: Spouse (Partner)

These questions will be provided at the first meeting prior to the interview, so the participant has time to reflect back on services.

Question #1: What services were offered to you immediately (up to 4 months) after the mill explosion? If offered, did you utilize these services? Were these services beneficial to you? Why or why not? Was there any services lacking at the time that you feel would have benefited you? Why do you think these services were lacking?

Question #2: What services were offered to you in the short-term after the mill explosion (4months to 1 year)? If offered, did you utilize these services? Were these services beneficial to you? Why or why not? Was there any services lacking at the time that you feel would have benefited you? Why do you think these services were lacking?

Question #3: What services were offered to you in the long-term (1 year ongoing)? If offered, did you utilize these services? Were these services beneficial to you? Why

or why not? Was there any services lacking at the time that you feel would have benefited you? Why do you think these services were lacking?

Question #4: What other systems/beliefs/values/actions were of support to you? Why did those supports work? Which did not work?

Question #5: Regarding services, is there anything else that you feel is important to share? If so, what?

## Appendix C

### Letter to Service Provider

Brenda Smith MSW Student researcher

5840 Goodwin Rd. Burns Lake, BC, V0J 1E1

Phone: 250) 251-0107 E-mail: smithbr@unbc.ca

Date:

**Attention:**

As a University of Northern British Columbia graduate Social Work student I am conducting research and presenting the research and findings in a final thesis.

I am requesting that you participate in an anonymous, short questionnaire regarding services that you have provided to individuals impacted by the Babine Sawmill disaster in Burns Lake on January 20, 2012. The thesis question is **What Services Best Supported Onsite Employees Post-Industrial Disaster in a Northern Single Industry Community?**

The purpose of the research study is to ascertain information on what services were offered to support onsite employees and spouses. Additionally, this research is

intended to gain knowledge on what services supported individuals to move past the trauma of industrial disaster and what lack of services hindered their recovery. I am interested in understanding your thoughts on why there was a void in services. This is a qualitative study focused on producing information that is currently lacking in literature. It is hoped that the results of this research will assist with understanding the needs of people post-industrial disaster in northern communities.

You will not directly benefit from participating in this study and there is no known risk to you. However, should you feel any discomfort, a list of counselling agencies have been included at the end of this letter. For participants who were onsite the night of the explosion, it is acknowledged that there may be a chance of them feeling some emotional/psychological discomfort while reflecting back to services in the immediate after the explosion. Strategies to combat that distress will include a list of local counselling services. If the participant is a spouse and feels discomfort during the interview process, debriefing and a referral to a local counselling agency may help.

This research study is completely voluntary for the participants, and they may withdraw at any time from participation. All information will be withdrawn and destroyed unless stated otherwise. This collected information may be shared with my supervisor and committee at UNBC in the School Social Work for the further development of research questions or statistics. Only anonymous information will be

shared. This information will be kept on file for up to 2 years and then destroyed.

Furthermore, the data collected will be stored on a locked computer and/or in a locked office.

Results of the study will be included in my thesis and possibly future publications. A copy of the study will be sent to participants by a hardcopy, email or instructions on how to access the document.

Please do not sign the attached questionnaire as it is anonymous. Confidentiality and anonymity will be respected and adhered to by assigning numbers to individuals and their data and by storing the data securely in a locked location such as a computer or office.

If you are in agreement to participate, complete the attached short questionnaire and return to me in the self-addressed stamped envelope.

Should you have any questions please contact me at 250)251-0107 and/or [smithbr@unbc.ca](mailto:smithbr@unbc.ca) or if you have concerns please contact the

Research Ethics Board

University of Northern British Columbia (UNBC)

3333 University Way

## When Disaster Strikes

Prince George, B.C., V2N 4Z9

Ph: 250)960-6735

Email: [reb@unbc.ca](mailto:reb@unbc.ca)

Your support is sincerely appreciated,

Brenda Smith RSW, BSW, MSW © UNBC

### LIST OF COUNSELING IN BURNS LAKE:

Lake Babine Nation: open to all, 250-692-6470 Kate

Addictions and Mental Health: open to all, 250-692-2400 #8 Kelsey or Andrea

Wet'suwet'en First Nations: band members only, 250-698-7787 Gaylene

Carrier Sekani Family Services Mental Health: open to all, 250-692-2387 Gord,

Kawanii

Optum: employees of Babine Sawmill, 1-800-663-9099

Private Practice: Gaylene Neary, 250-698-7787

## Appendix D

### Research Information Letter and Consent Form

For Onsite Employees, and Spouses (partners) of Onsite Employees

Brenda Smith cell: 250)251-0107

(DATE)

**Title of Research Project:**

What Service Best Supported Onsite Employees Post-Industrial Disaster in a  
Northern Single Industry Community?

**Investigator(s):**

- Brenda Smith (250) 251-0107.

**Purpose of the Research:**



- The purpose for the completion of this research is to fulfill requirements of the Masters of Social Work Degree at the University of Northern British Columbia.
- This study will gain information from onsite employees, spouses of onsite employees and service providers, postindustrial disaster. Data collection will include two separate, one-to-one interviews for both employees and/or spouses, and a questionnaire for service providers. Focus will be on what supports, programs or services were beneficial postindustrial disaster, in the immediate, short term and long-term, and which were not.
- Recommendations will be presented to inform people on the impact of industrial disaster including possible supports and services.

### **Description of the Research:**

- This is an invitation for you to participate in a study where there is a lack of information about services post-industrial disaster in the north. All personal information will be kept confidential and anonymous.
- The goal is to collect information on which services supported you in the immediate, short-term, and long-term after the disaster.

- If changes are made to the study or new information becomes available, you will be notified. The interview duration of this study should be completed within a 6 month timeframe. You have a choice to withdraw from the study at any point without repercussions. All information will be withdrawn and destroyed unless you state otherwise.
- This collected information may be shared with my supervisor and committee at UNBC in the School Social Work for the further development of research questions or statistics. Only anonymous information will be shared.

**Are you in agreement to share your contact details with other researchers for the purpose of potential follow-up research projects which have cleared Research Ethics Board?**

☐ Yes    ☐ No

**What You Can Expect:**

- There will be 2 meetings, one to overview the information and consent form, answer questions you may have, assess eligibility, and provide contact information and expectations for participants and researcher. Each meeting should average about an hour in length, with the second meeting consisting of interview questions. The interview will be audio taped. There will be some time for debriefing and feedback at the end of both meetings. Answers will be transcribed and include into this study.

**Access to Research Data:**

- I will have direct access to the data collected as well as my supervisor and committee members. This information will be kept on file for up to 2 years and then destroyed.
- Results of the study will be included in my thesis and possibly future publications. A copy of the study will be sent to participants by a hardcopy, email or instructions on how to access the document.

**Potential Harm, Injuries, Discomforts or Inconvenience:**

- If you were onsite the night of the mill explosion, it is acknowledged that there may be a chance of you feeling some emotional/psychological discomfort while reflecting back to services in the immediate after the explosion. Strategies to combat discomfort will include debriefing after the interview and if required referrals to a local counselling agencies. If you are a spouse and feel discomfort during the interview process, debriefing and a referral to a local counselling agency may help.

**Potential Benefits:**

- You will not benefit directly from participating in this study.

**Anonymity:**

- Confidentiality will be respected and no information that discloses the identity of the participant will be released or published without consent unless required by law. This legal obligation includes a number of circumstances, such as suspected child abuse and infectious disease, expression of suicidal ideas, where research documents are ordered to be produced by a court of law.
- A copy of the consent form(s) will be provided to you for your records.

**Reimbursement:**

- No reimbursement will be provided

**Contact:**

If you have any questions about this study, please contact:

Brenda Smith, 250-251-0107 or [smithbr@unbc.ca](mailto:smithbr@unbc.ca) or

Joanna Pierce, Thesis Supervisor, ph. 250-960-6521 or at

[Joanna.Pierce@unbc.ca](mailto:Joanna.Pierce@unbc.ca)

If you have any concerns please contact:

The Research Ethics Board

University of Northern British Columbia (UNBC)

3333 University Way

Prince George, B.C., V2N 4Z9

Ph: 250)960-6735 Email: [reb@unbc.ca](mailto:reb@unbc.ca)

### Consent:

By signing this form, I agree that:

- The study has been explained to me. Yes ☐ No ☐
- All my questions were answered. Yes ☐ No ☐
- Possible harm and discomforts and possible benefits (if any) of this study have been explained to me. Yes ☐ No ☐
- I understand that I have the right not to participate and the right to stop at any time. Yes ☐ No ☐
- I understand that I may refuse to participate without consequence. Yes ☐ No ☐
- I have a choice of not answering any specific questions. Yes ☐ No ☐
- I am free now, and in the future, to ask any questions about the study. Yes ☐ No ☐
- I have been told that my personal information will be kept confidential. Yes ☐ No ☐
- I understand that no information that would identify me will be released or printed without

## When Disaster Strikes

asking me first.

Yes ☐ No ☐

- I understand that I will receive a signed copy of this consent form.

Yes ☐ No ☐

I hereby consent to participate in this study:

Name of Participant:

---

---

---

Signature of Individual

Date

## Appendix E

### Questionnaire for Service Providers

Thank you in advance for participating in this research project. Please see the enclosed **Research Project Information** letter. Should you require extra space for your answers, you can find a lined sheet attached at the back of this questionnaire. Please be sure to include the question number into your continued response. For clarification or questions, please contact me at (250) 251-0107.

Question 1:

What is your job title? What are your duties?

---

---

Question 2:

When did you become involved with the onsite employee of the Babine Sawmill industrial disaster of January 20, 2012? Were you already working with these people prior the explosion?

---

---

---

Question 3:

What timeframe did you provide services to the employees? How were you supported in delivering services to onsite workers of Babine Forest Products?

---

---

---

Question 4:

What services did you provide in the immediate up to 1 month after the industrial disaster? In the short-term, 1 month to 6 months, and long-term 6 months and over?

---

---

---

---

Question 5:

What services, if any, did you see lacking in the community for these employees? Why do you think these services were lacking? Did you actively try to implement these services?



## When Disaster Strikes

---

---

---

---

Question 6:

Did you develop and implement any services that are outside of your usual services?

If so, what support did you require? What support did you receive?

---

---

---

---

Question 7:

What recommendation do you have, if any, for future mental health/social workers when supporting onsite employee's post-industrial disaster?

---

---

---

---

Question 8:

Is there any other information that you feel would be helpful to this study? If so, please explain.

---

---

---

Thank you again for your interest and participation in this qualitative research study.

Brenda Smith

## Appendix F

## Research Ethics Board Approval Letter

# UNIVERSITY OF NORTHERN BRITISH COLUMBIA

## RESEARCH ETHICS BOARD

---

### MEMORANDUM

**To:** Brenda Smith  
**CC:** Joanna Pierce

**From:** Michael Murphy, Chair  
Research Ethics Board

**Date:** May 20, 2014

**Re:** **E2014.0220.013.00**  
**When Disaster Strikes: What Services Best Supported Onsite**  
**Employees Post-Industrial Disaster in a Northern Single Industry**  
**Community**

---

Thank you for submitting revisions to the Research Ethics Board (REB) regarding the above-noted proposal. Your revisions have been approved.

We are pleased to issue approval for the above named study for a period of 12 months from the date of this letter. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or consent form must be approved by the REB.

If you have any questions on the above or require further clarification please feel free to contact Rheanna Robinson in the Office of Research ([reb@unbc.ca](mailto:reb@unbc.ca) or 250-960-6735).

Good luck with your research.

Sincerely,



Dr. Michael Murphy  
Chair, Research Ethics Board

## Appendix G

Certificate of Completion: Tri-Council Policy

# *Certificate of Completion*

*This document certifies that*

**Brenda Smith**

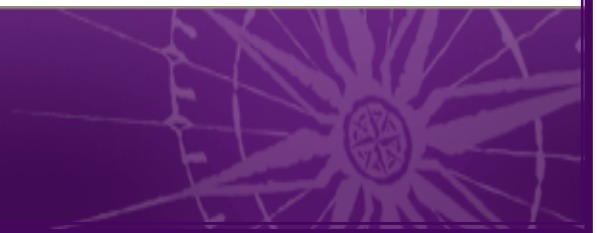
*has completed the Tri-Council Policy Statement:*

*Ethical Conduct for Research Involving Humans*

*Course on Research Ethics TCPS 2: CORE)*

**Date of Issue: 23 September, 2012**

Research Poster





Were you onsite the night of the Babine Sawmill Explosion?

- Would you like to participate in a research study regarding the services you received **after** the mill explosion?
- Participation will be confidential and voluntary.
- Brenda Smith is a Masters of Social Work student researcher at the University of Northern BC and is conducting research on services provided to onsite employees or spouse/partners after the explosion.
- Information will be collected on the services offered in the immediate, short term and long-term after the disaster. Information will also be collected on what services were lacking that may have bennifited you in overcoming trauma and/or post-traumatic stress disorder (PTSD).

## When Disaster Strikes

- Please call Brenda at 250-**251-0107** for further information and if you are able to participate.