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"I am a Living History": A Qualitative Descriptive Study of Atomic Bomb Survivors

Amy Knowles
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a dissertation written by Amy Knowles entitled ""I am a Living History": A Qualitative Descriptive Study of Atomic Bomb Survivors." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Nursing.

Susan Speraw, Major Professor

We have read this dissertation and recommend its acceptance:

Jan Lee, Tami Wyatt, Allison Anders

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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“I AM A LIVING HISTORY”:
A QUALITATIVE DESCRIPTIVE STUDY OF ATOMIC BOMB SURVIVORS

A Dissertation

Presented for the

Doctor of Philosophy Degree

The University of Tennessee, Knoxville

Amy Leigh Knowles
August 2009

DEDICATION

This work is dedicated to the amazing individuals who shared their stories with me. They invited me into their lives, divulging intimate details of extremely painful events in their lives. The *hibakusha* have overcome such drastic adversity, beyond what most of us can comprehend. Yet, their desire to share their story, with the hope that no one else ever has to experience what they endured speaks of their character. They will forever hold a special place in my life.

Further, this is dedicated the researchers and healthcare providers who provide care and assistance to the *hibakusha*. For many, it is their life work to enhance knowledge and provide support for a very special group of people. Their tireless efforts are an inspiration to me.

Finally, this research is dedicated to all those who wage peace.

ACKNOWLEDGEMENTS

Hillary Rodham Clinton once said it takes a village to raise a child. I would argue that it takes a village to write a dissertation. There are numerous people who have played a significant part in the writing of this work.

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Beyond professional assistance, I was blessed to have family and friends who helped, supported, encouraged, and endured me along the journey. My colleagues, Felecia and Steve have offered guidance and shared the triumphs and struggles of the

past three years. Dear friends Maryann, Jennifer, Inga, Peggy, and Kristi have encouraged me countless times. My family Allison and Scott have supported me through so many trials; often sending an encouraging note or small token at just the right time, as well as providing wonderful respites for retreat. To my parents, Ed and Jane McHenry, who have given so much and sacrificed for me in countless ways. Your commitment to education has never gone unnoticed or unappreciated. You are forever an inspiration to me. And to my husband Jon, thank you for your tireless support and encouragement, and for simply putting up with me. I love you so much and look forward to celebrating many successes with you in the future.

Most of all, I thank my Almighty Father who has once again proven faithful to me (Proverbs 3: 5-6, Jeremiah 29:11-13). I truly am blessed beyond measure.

Finally, I would like to thank Sigma Theta Tau Gamma Chi chapter for an education grant to assist the funding of this research.

ABSTRACT

Never has the world experienced such extreme desecration as with the atomic bombings of Hiroshima and Nagasaki, Japan, in August 1945. This magnitude of destruction serves as the foundation for this disaster research. Although significant quantitative research has been completed about medical effects following radiation, the literature lacks qualitative exploration from a holistic health perspective. The purpose of this study was to explore the experience of atomic bomb survivors from Hiroshima and Nagasaki.

From ethnographic data and interviews with eight survivors who currently reside in the United States, a thematic structure was developed that depicts the essential elements of the atomic bomb experience. This includes the literal destruction of the bombing, which resulted in complete desecration of the environment (including the physical health, psychological health and response effort). Individual's perspectives of the atomic bomb experience were circumscribed within the Japanese cultural context. Two ways of being in the world followed the bombing: surviving and thriving, with resilience serving as a lever, allowing for fluid movement over time across the continuum.

Individuals experiencing surviving exhibited anxiety about their personal and family members' health, expressed mistrust, and felt a stigma associated with being a survivor. For those who were thriving, peace activism, overcoming and forgiveness were typically displayed. Keen sensory perceptions were universal across all participants and extreme measures of care were frequently discussed.

The narratives were explicated using Leininger's Culture Care Diversity and Universality Theory. Findings from this study add to disaster nursing literature and support the need to include disaster nursing in all levels of nursing education, emphasize the necessity of long-term psychosocial support following disasters, and discuss key public health messages.

EXECUTIVE SUMMARY

The executive summary provides a broad overview of the findings of research. The purpose of this study was to explore the experience of atomic bomb survivors from Hiroshima and Nagasaki. Three research questions were posed. First, what was the experience of surviving an atomic bomb release? Second, for participants who were in utero at the time of the bombing, what stories were they told about the event? Finally, what impact did the atomic bombing have on survivors?

Background and Significance

Vast amounts of quantitative and epidemiological studies have been performed and enhance the knowledge of medical conditions resulting from radiation exposure. Unfortunately, very little qualitative work has been done with the atomic bomb survivors regarding their experience and their health during and following these catastrophic events. Furthermore, the previous qualitative research does not encompass a holistic approach to health care nor fully address psychosocial factors. Findings from this study have significance from historical, nursing, and disaster response perspectives.

Research Design

This was a qualitative descriptive study, using methods of narrative analysis, oral history, and ethnography. Institutional Review Board approval was sought and obtained. I participated in a bracketing interview to address potential bias. The final sample included eight survivors.

Review of Literature

The literature reviewed was extensive and included historical aspects leading up to the atomic bombings, the immediate aftermath and the impact from the bomb, previous qualitative and quantitative research, resilience, survivorship, and disasters in Asian populations.

Data Collection and Analysis

Data was collected during a training experience at the Radiation Effects Research Foundation in Hiroshima, Japan, and a subsequent trip to San Francisco, California. During these experiences, I was fully immersed in the culture. Eight survivors who currently reside in the United States were interviewed, with narrative analysis being performed on the transcribed interviews. Various artifacts, including newspaper articles, teaching guides, and books were collected as well; the analysis of artifacts was used for triangulation of findings from the narratives.

Commonalities across the narratives existed and included: 1) the ability to recall explicit details about their experience; 2) time played a critical part in each of their stories, and all participants broke their story into life before the bomb, during the bomb, and after; 3) an emphasis on family was evident throughout, including birth order, pride in family name, cared by/for family members; and 4) the influence that the Japanese culture had on their stories (traditions, marriage rituals, conformity and harmony).

Cultural Context

I was initially interested in framing my work with Leininger's Culture Care Diversity and Universality Theory (Leininger, 2006). Participants conveniently presented

their stories to me in a way that meshed perfectly with the theory and facilitated the organization of my findings. All participants spoke to nearly all dimensions of the cultural and social structure. Findings were framed within the context of kinship and social, language, worldview, educational, religious and philosophical, cultural values and lifeways, and political factors.

Out of the interviews and narrative analyses, a thematic structure was constructed to illustrate the concepts, themes and relationships found in the data.

“I am a Living History”

The schematic included the literal destruction of the bombing, which resulted in the desecration of holistic health and the professional response system. Time is a central orientation. Two main parts of the survivor’s narratives include before/during the bomb, and after the bombing. All participants exist psychologically along a continuum of time, with some being more keenly focused on the past, emphasizing experiences before or during the bombing. These individuals appear more anxious, worry, or concentrate on the hopelessness of the bombing and its effects. Others are more present or future oriented, suggesting they are living in the moment, looking to the future, and living their lives in the timeframe of after the bombing. Participants can straddle the continuum or move their position along the spectrum, dependent on their current circumstances. Resilience serves as a lever, allowing individuals to move from one area to another as events or situations arise. When resilience is high, an individual will exhibit traits of thriving. Conversely, if the level of resilience drops, the person will move down into survival mode. With the spectrum being fluid, individuals can ebb and

flow from one area to another based on specific situations. Survivors interviewed presented perspectives illustrating a continuum of living in the world after the bombing, anchored by two poles; surviving and thriving.

Destruction

Several critical components impacted by the destruction of the bomb are the person, on a small scale, or the society from a larger perspective. Physical destruction of the city was described in the following.

> The four square miles of the city of Hiroshima turned into an inferno. (Mr. Tanemori)
>
> Everything destroyed. Nothing there. (Ms. Brown)
>
> We were told that for 50 years, we wouldn't have anything in Hiroshima. (Ms. Eda)
>
> A total scene of hell, if there is a scene. (Mr. Dairiki)

On an individual level, participants spoke of physical health elements resulting from the bombing, ranging from acute injuries, burns, and trauma to long-term consequences of cancer, leukemia, and vision problems.

> I started getting some blisters from my burns. (Mr. Ota)
>
> I was so skinny, I could not even move. (Mr. Fujita)
>
> I remember a lot of worms on my legs…yes, worms because of the flies. They would lay eggs on my legs. They would eat so many things. At first, they eat up the pus, and I don't feel anything. But, they started eating my flesh, oh boy, I screamed. I remember. (Ms. Brown)

Beyond physical destruction, the bombing left an impact on the psychosocial health of the survivors; this aspect has received less attention in previous research. Psychosocial health incorporates various aspects, including nightmares, flashbacks,

anxiety, fear and emotional upset. Participants spoke of the psychosocial effects of the bombings in the following.

> It was hush-hush…so we didn't talk about it. (Mr. Yonokura)
>
> And even til this day, I can not take the guilt of surviving. (Ms. Fujimoto)
>
> I [was] injured so much, so people stare at me…when I was young, really truly, I suffered. (Ms. Brown)
>
> We are the ones carrying the heavy burden…If people died, sure it's hard, but no suffering there. (Ms. Fujimoto)
>
> I attempted suicide, and I failed. (Mr. Tanemori)

On a societal level, the war and destruction of the bomb crippled the medical systems, resulting in extreme measures of care as people used folk remedies to aid.

> We don't have any medicine those days…no medicine, no nothing. (Ms. Eda)
>
> No medicine…just what you call natural healing…so my mom stole bones and crushed up like flour and put on my face…the human being bones absorbed a lot of pus. (Ms. Brown)
>
> We make up mashed potato…and put it on the wound, like a bandage, and the mashed potato absorb the juice that comes out of her body. (Mr. Dairiki)

Surviving

Surviving was defined as the ability to exist, despite adverse conditions. Participant's who exhibited traits on residing in survival mode had a strong association to past orientation, routinely live with memories of the bombing, and exhibited signs of anxiety, mistrust, and focused on the stigma of being an atomic bomb survivor.

Anxiety

The fear and anxiety felt by some participants spanned the spectrum: from being worried about any time they had a cold; to the paralyzing fear that she if had children they would be abnormal, so she never had children. Exemplars of anxiety for their own health and the well-being of their family were evident in the following.

> Even now, when my kids are sick, I think about it. (Mr. Yonokura)

> I really didn't want my daughter to have a baby. Til I see it, I could not…[have an] easy feeling. Is he okay? Is she okay? How it's going to work. Now he looks so healthy, but is he really well? Those kinds of fears, I don't think you can take that away. (Ms. Fujimoto)

Mistrust

For some of the individuals residing in the surviving mode, a general mistrust of doctors and the government was voiced. Part of this mistrust was largely restricted to the time period immediately following the bomb, yet some mention of current mistrust in the lack of information supplied was a concern.

> We don't know! Because nobody tell us what's gonna happen. (Ms. Fujimoto)

> In spite of the assurance the US government has been giving us, they still don't know what to do [regarding nuclear waste disposal]. (Mr. Yonokura)

Stigma

Another theme in the surviving spectrum is the stigma that many of the survivors faced; many endured discrimination or felt a prejudice against those who were affected by the bomb. Participants discussed the uncertainty of the general public, medical providers, and potential spouses had regaining the status of those who were exposed to the bomb.

> There was prejudice against the survivors. Instead of sympathy or compassion, they avoided us. (Mr. Yonokura)
>
> Some people who are survivors…they get kind of prejudice because they don't know what is survivors, or survivor's sickness. They think it kind of contaminates through touching or through marrying. (Ms. Eda)
>
> But I can relate it with AIDS…[they said] 'Why don't you go home' [describing phone call she received when her son was sick, in the time when AIDS epidemic was just beginning and people were worried about contagion]. (Ms. Fujimoto)

Thriving

Thriving was defined as the ability to prosper or flourish, despite adverse conditions. Participants in the thriving mode exhibited a more positive or hopeful tone in their narratives; they often had a present or future orientation. Themes of overcoming, forgiveness, and peace activism emerged from their narratives.

Overcoming

Some participants showed a real ability to thrive, taking their situation from the bombing and generalizing their experiences into lessons on how to live and be strong. Many talked of moving on from the bomb, focusing their time, energy, and attention to other efforts. From serving as a pastor and counseling others during times of need to working to protect and save animals, these individuals used their personal experiences from the bomb to benefit others in various ways and help living things heal.

> But I try to save animals. You know, animals can't talk. Human beings can do very mean things to animals. So, I spend my extra money to the animals. That is my treasure. (Ms. Brown)
>
> So now, I am a better counselor because of what happened to be. (Mr. Yonokura)

Moving on and looking to the present and future was demonstrated by many participants.

> I say the past is the past. The only thing you have to deal with is the future. You don't, you know, take with you everything from yesterday, or 10 years ago. So, I went through a lot. I lost the whole family, my wife passed away because of leukemia. But like I say, they are gone and I am here. (Mr. Fujita)

> I just tried to lead a normal life…I felt I had to make my own life, and I do the best I can. And that is the way I approached everything. (Mr. Ota)

Forgiveness

One attribute that was exhibited during periods of high resilience included the ability to forgive.

> Learning to forgive, that is the greatest gift I have found. It's a relationship with the Divine…we can choose to forgive; the ultimate demonstration of love is forgiveness. (Mr. Tanemori)

Forgiveness was a foundational characteristic in those individuals who chose to become United States citizens and those who joined and served in the United States military, particularly after they and their families had endured the wrath of the military during the bombing.

Peace Activism

A universal theme present throughout every single narrative was the initiative to work towards the abolition of nuclear weapons and to promote peace. For many, their life work and mission revolved around telling their story and experiences to help spread the message that nuclear weapons were not the answer or solution to any disagreement between nations or groups. Many attended peace vigils, spoke to various groups, and participated in anniversary exhibits to promote peace among all.

Cultural Studies

Cultural studies as a discipline concerns itself with the examination of various representations of a society and power structures within that society as revealed through discourse (Hall, 2007). Further, Baez (2007) discusses the discourse between popular culture and language, specifically how we talk about our experiences in the world. The ways in which the survivors used language played a central role in their construction of the meaning of their atomic bomb experience and how it was embedded in the Japanese culture. Representation existed on both an individual and societal level. Individually, each participant broke their narrative into three parts: (1) before the bomb, a time of innocence; (2) during the war and bombing, a time of chaos and destruction; and (3) after the bomb, a time directed towards striving for the ideal of peace.

Representation existed on a societal level as well. In many ways, the city of Hiroshima is still holding on to the bombing event. Peace Boulevard is a central street that winds throughout the city, serving as a major artery in the area. As people travel in the city, they have a continual reminder of the peace; not only the message of peace, but the repercussions of war, as evident by the presence of the A-bomb dome and Peace Park.

Another facet of cultural studies is an investigation of power being negotiated in representations. Power can be explored from various angles; including gender, race, and social position, to name a few. Power was most poignantly displayed throughout the kinship and political factors. Diminished power was evident in the kinship and social factors by the stigma and isolation of some survivors. Enhanced power was displayed

by the participants utilizing their unique experience of being atomic bomb survivors as a platform to advocate for the abolition of nuclear weapons.

Implications for Nursing Practice and Education

Based on the findings of this research, nursing practice and education can be improved in several areas. One significant consideration is the need for long-term psychological support following disasters and traumatic events. Additionally, this work highlights the need for cultural competent nursing practice when providing care to culturally diverse patients and populations.

A key aspect of nursing practice and education is to develop a keen awareness of the environment; never is this more important that in disaster responses and radiological emergencies. Awareness only comes after education; training on radiation and contamination should be provided at all levels of nursing education. Understanding the principles of contamination and decontamination, rendering care according to protocol, and providing additional psychosocial supportive care is essential.

Implications for Nursing Research

Findings from this work suggest additional research opportunities in various arenas. Nursing knowledge needs to advance in regards to the long-term psychological effects of disaster events. Further expanding the understanding of resilience and the ability to overcome adversity is critical to assist with disaster responses in the future.

Implications for Public Policy

Research findings have implications on several areas of policy. Primarily, initiatives to support the survivors who are American citizens needs to be strengthened.

Additionally, as healthcare providers who have knowledge and understanding of the effects of nuclear war, nurses should actively participate in the prevention of nuclear weapon use.

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INTRODUCTION

It was just after dawn on a warm summer day in a bustling city. During the war, people started their morning early, with many already at work or en route to their destination. The sky was serene, with the morning light flooding in and providing warmth. Suddenly, it all changed at 8:15 am on August 6, 1945. First, there was an immense white light, with indescribable brightness. Then, seconds later, an enormous concussion and shock wave emerged, followed by an intense roar. Life as it had been known would never again exist. This event of unprecedented magnitude occurred as the atomic bomb *Little Boy* delivered complete destruction to Hiroshima, Japan. Sadly, the annihilation was repeated three days later as *Fat Man* assaulted Nagasaki. Never had the world experienced such extreme desecration.

The purpose of this study is to explore the experience of atomic bomb survivors, as revealed in their stories. A “survivor” includes individuals who meet any one of the following criteria: (1) those who at the time of the bomb were within the city limits of Hiroshima; (2) those who came into the city limits within 14 days and entered a designated area extending to about two thousand meters from the hypocenter; (3) those who came into physical contact with bomb victims, that aided or disposed of bodies; and (4) those who were *in utero* at the time and whose mothers fit into any of the first three groups (Lifton, 1967, p. 7). While significant research has been done regarding the physical and medical conditions resulting from the bomb, a more holistic study, including survivor’s well-being and psychosocial consequences has not been thoroughly

explored. Capturing the stories from the aging survivors provides an opportunity to preserve history and expand the knowledge of comprehensive, holistic care for radiation exposure victims. Before I take you on this journey to explore one of the world's greatest disasters, let me provide context into my approach of this subject as a researcher and introduce cultural aspects.

The Researcher and Cultural Context

Focusing my research on atomic bomb survivors comes to fruition after twelve years of nursing experience. My professional life has been one of commitment to public health and safety, with an additional focus on vulnerable populations. I have spent over eight years working in public health at the local level. Preventive health, education and training, epidemiology, and emergency preparedness were my primary public health duties. Additionally, occupational health for emergency services, safety prevention, and infection control has comprised my clinical experiences.

My work experiences and interests led me to further my education through a unique Homeland Security Nursing program within the College of Nursing, which prepares nurse scholars and leaders to respond to disasters of various origins. The program focuses on planning, response, and management of mass casualty incidents, including acts of terrorism, natural disasters, and public health emergencies. Initially, my interest and work in public health and preparedness efforts led me to the program, ultimately broadening my horizons and interests in rendering care to vulnerable populations. One unique aspect of the program is its association with international programs, including the Radiation Effects Research Foundation (RERF) in Japan. From

this collaboration, I gained valuable experience, knowledge and training in the medical care and research of atomic bomb survivors in Hiroshima, Japan. These past experiences have been foundational to the evolution of my interest in serving people to examining research questions in susceptible populations. Gaining knowledge in disaster responses can allow the opportunity to better serve those in need.

Furthermore, outside of my professional life, I have served on foreign mission trips to developing countries and volunteered at a free medical clinic in the United States. Throughout my career, a focus on people in time of need has been a central component; serving people of various socioeconomic levels, individuals battling acute illnesses and accidents, and those who have experienced disasters.

From my perspective of public health, vulnerable populations, and disaster response, the path to completing research with atomic bomb survivors appears evident. The atomic bombing has been one of the most destructive disasters in the world, leaving thousands dead, others with significant health impacts, and still more who are extremely susceptible to disease as they age. Arguably, never has another group been more vulnerable than those individuals who survived the bombing. The ability to study survivors of the atomic bombing is a continuing testament to my interest and commitment to public health issues. The timing of this research is critical; the first generation survivors are aging and it is imperative that data be captured from this group before the opportunity is missed. Knowledge gained from this research can assist in future disaster planning and identify needs of victims of catastrophic events.

Culture

Recognizing the cultural context of the Japanese is pivotal prior to embarking on this research study. Particular sub-cultural traditions exist within a majority of the Japanese community. For example, many hold a belief that adult children are responsible for taking care of parents and they take great care to avoid hurting other people's feelings. Additionally, they strive to maintain harmony and good relationships among people. The Japanese are generally indirect in their communication style, relatively tentative, avoid confrontation, apologize frequently and exhibit humility. They will discuss things relatively openly and share their true feelings directly with insiders. However, they keep a certain distance from outsiders (Morimoto-Yoshida, 2005). One way to overcome this is to establish a commonality with the participants. Additionally, having a native Japanese individual introduce the researcher to participants can assist in forming relationships (J. Houta, personal communication, September 7, 2008).

Culture is a critical factor that needs to be considered in examining Asian disaster situations and planning. Unfortunately, Asia is the most disaster prone area of the world (Kokai, Fujii, Shinfuku, & Edwards, 2004). According to the International Federation of Red Cross and Red Crescent Societies (2001), of all people killed by natural disasters from 1991-2000, 83 percent were Asians. From a cultural perspective, the Asian populations are often reluctant to express psychological distress; this may lead to underreporting or lower rates of diagnoses of psychiatric disorders following traumatic events (Kokai et al., 2004). Therefore, studies of disaster and mental health received relatively little attention until January 1995 after the Hanshin Awaji earthquake.

Following the quake, the awareness of post traumatic stress disorder (PTSD) was accepted among the community (Kokai et al., 2004). More recently, Neriishi (2006) documented multiple psychological sequellae, including anxiety, anger, and stress induced medical disorders among citizens of Tokaimura, Japan following accidental radiation release at a nuclear plant in 1999. His follow-up over seven years indicated that mental health effects following disaster can be long-lasting and deserve attention in the healthcare community.

As catastrophic incidents typically involve the loss of life, the cultural relevance and the context in which the Japanese view death is pertinent in disaster research. Long (2005), a researcher of the phenomenon of dying in Japanese culture, noted that the language characters used to write “death” most often include a modifier, offering an explanation of the loss of life; the character for death is rarely used alone. For example, *senshi* indicates death in war, while *roshi* symbolizes death in old age. Rituals are a significant part of funeral rites among the Japanese.

Figure 1. Charles Blow. *A river of light.* 63rd Anniversary of the bombing, Motoyasu River, Hiroshima, Japan. 2008, photograph.

The Obon (or *bon*) is a festival of the dead, with death rituals lasting from the first rite on the seventh day after death to the last rite, which is 33 years later (Stefansson, 1995). In Japanese culture, people float lanterns on the water to send off spirits of the deceased (Figure 1). The perception of the survivor's atomic bomb experience is influenced by how the Japanese construct meaning of death within their culture. It was anticipated that death and funeral rituals might be included in some of the participant's narratives, considering the repercussions of the atomic bomb and the loss of life that surrounded the survivors and the fact that every year on the anniversary of the atomic bombings, a festival is held to honor those who died.

Japanese Nursing

As this study explores well-being among the Japanese survivors, a better understanding of health and nursing within the Japanese context is helpful. Japan has one of the longest life expectancies among developed countries (Clark & Ogawa, 1997), which implies relatively good health among its people. From observation during my visit to Hiroshima, the Japanese diet was a nutritious representation of fish, vegetables, and rice. Additionally, public transportation and daily exercise by walking were noted frequently. However, aspects of Westernization are coming to Japan; a new Krispy Kreme doughnut establishment was found in Tokyo, along with other American fast food restaurants. In speaking about the health and diet of the Japanese, one nurse noted that an increase in obesity was being seen with the addition of Westernized food options (M. Kuwamoto, personal communication, September 4, 2008).

The nursing profession started in Japan in the late 1880's; originally introduced by Japanese doctors who visited Europe and the United States and missionaries, the "Nightingale System" was implemented for nurse training. By the 1900's, the profession had been established and recognized as a female occupation and an integral part of hospital staff (Takahashi, 2004). Nursing care in the community setting began with the introduction of the profession in 1889. A foundation for public health nurses was established in the 1920's, followed by the Public Health Law in 1937. This act provided detail on the nurse's activities in the community. The New Gold Plan, which established preparation for a national care insurance system, was formulated in the 1990's, and led to major curriculum changes in the training of nurses (Moriyama, 2008). Clinical nurse specialist education at the master's level started in 1998. Currently in Japan, the number of advanced and graduate prepared nurses remains small. According to Moriyama (2008), a professor at Hiroshima University, due to political issues and licensing disagreements there are currently no nurse practitioners in Japan, although both nurses and physicians report a need.

The Japanese Red Cross has been active in nursing education and Japanese disaster readiness and relief for decades. It operates 27 schools of nursing, awarding the baccalaureate degree in prefectures throughout Japan. They view their mission both to educate nurses and to assist the nation in its preparation for disaster. The Japanese Red Cross Hiroshima School of Nursing is a model of modern disaster preparedness, with their skills labs fully equipped (including an operating room suite) to function as emergency healthcare facilities in the event of calamity (Japanese Red

Cross Hiroshima School of Nursing, 2009). In addition, even to the present day the Red Cross Hospital in Hiroshima provides ongoing care to survivors of the atomic bombing who have radiation-related disorders, thus continuing to meet their disaster relief mission.

During my experience in Hiroshima, Japan, I had the opportunity to speak with the chief nurse of the contacting division at RERF. She described the role of the six public health nurses that work at the facility in Hiroshima. The nurses participate in physical examinations of the survivors during the biennial medical exams and frequently provide health guidance and education. Additionally, the nurses make home visits to survivors periodically, especially if they are unable to come the RERF facility (M. Kuwamoto, personal communication, April 13, 2009).

When talking with the chief nurse Ms. Kuwamoto, several commonalities between Japanese and American nursing were evident. They have similar education systems for undergraduate nursing education, with diploma and bachelors degrees provided. However, as previously discussed by Moriyama, graduate prepared nurses are in the minority. Another commonality includes the shortage of nurses in Japan. Further, predominantly an occupation for females in the past, nursing in Asia has expanded to include male nurses, so that nursing is no longer a female dominated field. When recently asked about the role of nurses in Japan, Kuwamoto reported that nurses train family members in home care and offer guidance in regimen and cooking, for those patients who are suffering from “diseases of daily life” (M. Kuwamoto, personal communication, April 13, 2009). The Japanese government has enacted the Healthy

People Japan 21st and the Health Promotion Act in 2001, which strengthens policies and emphasis on health promotion and disease prevention (Moriyama, 2008). This cultural context of health and nursing provides perspective as an exploration of the survivor's experience and health is carried out.

Cultural Studies

As Japanese culture is foundational in the atomic bomb survivors, aspects of cultural studies were considered when evaluating the data. Coming from a discursive formation, cultural studies consist of the study of representations. According to Stuart Hall, "cultural studies analyze certain things about the constitutive and political nature of representation itself, its complexities, the effects of language, and textuality as a site of life and death. The discipline holds theoretical and political questions in an ever irresolvable but permanent tension" (Hall, 2007, p. 42). The correlation between language and cultural studies was further explained as "the ways in which we talk about our experiences in the world are embedded within and connected to the language of other institutional discourses, such as popular culture" (Baez, 2007, p. 192). By observing representations and themes that became known from the interviews, a cultural perspective was applied to the data as it emerged from the narratives.

In addition to the cultural context of the participants, sensitivity was deployed when speaking with participants. With the atomic bomb event occurring over 63 years ago, the survivors are representative of the elderly and considered a vulnerable population. As with the older population of all nationalities, sensitivity to elders and vulnerable persons is forefront during the interview process. Furthermore, moral and

ethical considerations abound within the atomic bomb event. Literature promoting peace efforts exist and was kept under consideration throughout the research endeavor.

Resilience

Before delving into the research study, a look at the foundational base of a priori knowledge is beneficial. During my time studying at RERF in the summer of 2008, I spoke with a survivor at length. Resilience was a theme that recurred throughout that interview, as the survivor shared her story of overcoming extreme conditions beyond imagination, both physically and mentally, in order to survive and keep her infant child alive. From personal conversation with radiation research expert Dr Kazuo Neriishi, Associate Director of Clinical Studies at RERF, each survivor's story typically includes the need to overcome adversities associated with the atomic bomb (K. Neriishi, personal communication, September 12, 2008). Based on the survivor interview and expert opinion, the data gained from this proposed research was evaluated with *a priori* knowledge of resilience theory.

Broadly defined, *resilience* is a "phenomenon of positive adjustment in the face of adversity" (Haase, 2004, p. 342). Polk (1997) further described the concept of resilience as "the ability to transform disaster into a growth experience and move forward" (p. 1). As a complex multidimensional construct, consensus on terminology, characteristics and boundaries of resilience is lacking. However, two generally recognized essential attributes are present: good outcomes and adverse conditions (Haase, 2004). From the literature, the human energy field and environmental energy field is manifested through complexity of dispositional, relational, situational, and philosophical patterns to form a

pattern of resilience (Polk, 1997). From my initial experience in talking with survivors and discussions with radiation experts following survivors long-term, atomic bomb survivors truly illustrate the astounding human capacity for transcending adversity. As suggested by Creswell (2003), resilience theory can be used to guide this qualitative research effort and provide perspective.

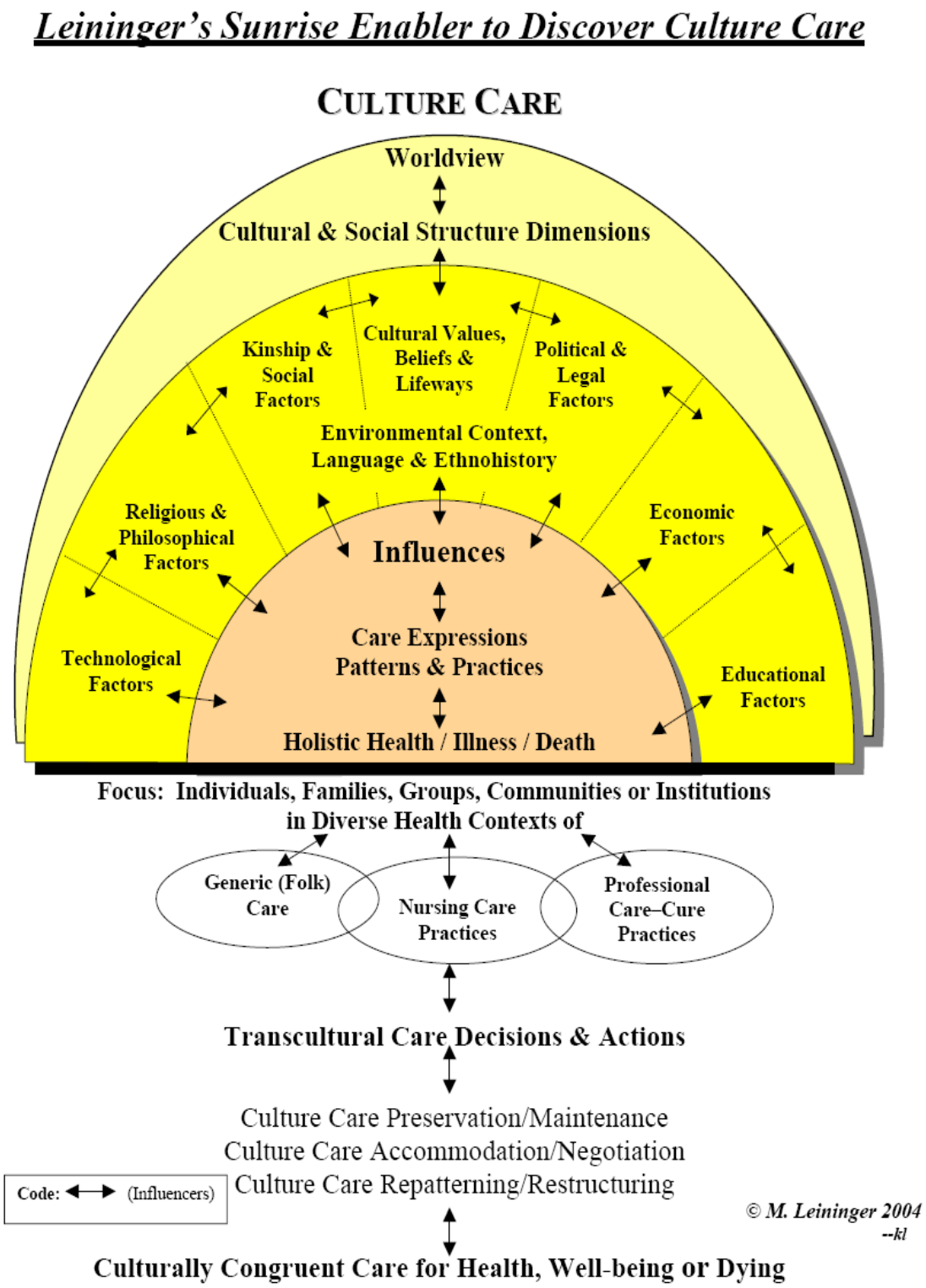
Culture Care Diversity and Universality Theory

As a compliment to Resilience theory, Leininger's Culture Care and Diversity and Universality Theory (Culture Care Theory) serves as a theoretical framework for this study. This model, which is particularly salient as it uniquely addresses the social elements of culture, serves as a guide for nursing care of individuals or groups based on unique, cultural needs. Leininger (2006) suggested that cultures exhibit both diversity and universality and discovering, documenting, knowing, and explaining the similarities and differences of care within cultures are paramount.

Within the Culture Care Theory, Leininger offers the Sunrise Enabler, which is a comprehensive guide for cultural care (Figure 2). The model helps the nurse to assess and understand the influences of cultural values, beliefs and practices, religious, philosophical or spiritual beliefs, economic factors, educational beliefs, technology views, kinship and social ties, and political and legal factors that contribute to the client's care and health.

According to Leininger, environmental context is a complex, multifaceted dimension that is present in all cultures. Varying among cultures, the understanding of the environment requires broad geophysical and social knowledge (Leininger, 2006).

Figure 2. Leininger's (2006) Sunrise Enabler



The Culture Care Theory posits that special environmental meanings, symbols, and commonly shared views exist as aspects of environmental context. Application of Leininger's theory has particular relevance to the study of the atomic bomb release, since that event drastically impacted the environment. Survivors of the bomb can share stories that shed light on the validity of the theory, since they have experienced an event that no other population has witnessed.

Philosophical Bases

Foundational to any research is the philosophy on which it is grounded. Two philosophical perspectives resonate with the view that I bring into this research effort: symbolic interactionism, and naturalistic inquiry. Symbolic interactionism focuses on the phenomena of social interaction. According to Blumer (1969), social interaction underpins the process of learning who we are and the symbolic meanings of things. Naturalistic inquiry includes research designs seeking to describe, understand, or interpret life experiences and structures within the contexts in which they occur (DePoy & Gitlin, 2005). Symbolic interactionism has influenced narrative analysis. According to researcher Riessman, "stories don't fall from the sky-they are composed and received in contexts-interactional, historical, institutional, and discursive" (2008, p. 105). The narrative analysis method bases and extends the theoretical traditions that emphasize the importance of interaction, including symbolic interaction theory (Riessman, 2008). Additionally, symbolic interactionism is a central component in obtaining oral histories. Sociologist Denzin referred to Dewey and his writing on the reflex arc concept as the

beginnings of symbolic interactionism (Denzin, 1992). In the landmark article, Dewey noted:

> It is a question of finding out what stimulus or sensation, what movement and response mean; a question of seeing that they mean distinctions of flexible function only, not of fixed existence; that one and the same occurrence plays either or both parts, according to the shift of interest…(Dewey, 1896, p. 364).

Denzin also noted that interactionists study the "intersections of interaction, biography, and social structures in particular historical moments" (Denzin, 1992, p. 20). Clearly, a symbolic interactionist approach allows for study into the historical and social aspects of surviving the atomic bomb event. As with any philosophical basis, assumptions must be addressed and accepted. In a book exploring qualitative methods, Corbin and Strauss summarize a majority of assumptions associated with interactionist philosophies, including the sentinel work from Blumer, Mead, Dewey, and Strauss. A few assumptions that are particularly salient include:

> (1) the external world is a symbolic representation, a "symbolic universe"; (2) meanings are aspects of interaction and are related to others within systems of meanings; (3) contingencies are likely to arise during a course of action; and (4) actions are accompanied by temporality, for they constitute courses of action of varying duration (Corbin & Strauss, 2008, pp. 6-7).

Within the interactionist philosophy, Blumer further described empirical knowledge. From his perspective, Blumer posited that “in order to validate empirical science, one should go directly to the empirical social world” (Blumer, 1969, p. 32). The meticulous examination results in knowledge of premises, questions and problems, data, concepts and interpretations. The in-depth review can yield a greater understanding of the interactions of the particular social world.

Additionally, thematic content analysis is consistent with naturalistic inquiry. From an epistemological stance, knowledge is based on how individuals perceive experiences and how they understand their world (DePoy & Gitlin, 2005). Narrative inquiry allows the voices of marginalized populations, such as the atomic bomb survivors, to be illuminated, providing rich description and revealing meaning to a story. The stories offered by these survivors are unique and must be captured while still available.

Statement of the Problem

Vast amounts of quantitative and epidemiological studies have been performed and enhance the knowledge of medical conditions resulting from radiation exposure. Unfortunately, very little qualitative work has been done with the atomic bomb survivors regarding their experience and their health during and following these catastrophic events. Furthermore, the previous qualitative research does not encompass a holistic approach to health care nor fully address psychosocial factors. Based on the magnitude of the disaster events, significant knowledge can be gained by better understanding the experience of surviving an atomic bomb and the subsequent health issues resulting

from the incident. By listening to survivor stories, we can gain invaluable knowledge, which can impact future planning and preparedness efforts for the next atomic disaster event. Sadly, this wealth of information and experience which the survivors hold will not exist forever. The bombing event occurred 63 years ago, meaning that those who survived and are able to tell their stories are in advanced age. If their experiences are not captured now, their insights will be lost.

Purpose of the Study

The purpose of this study is to explore the experience of atomic bomb survivors, as revealed in their stories. This research fills a gap in the literature by uncovering the knowledge of how a group of people who experienced a catastrophic event survived it, and went on to live their lives. The lessons learned from gathering stories about their experience, survival, and persevering the encounter provide guidance for how we can respond to disasters in the future. The wisdom gained from this study can have a direct impact on nursing practice and assist nurses in rendering care in future disaster events. Furthermore, lessons learned can enhance the Homeland Security Nursing program through education and training of nursing scholars and the promotion of disaster nursing research.

Research Questions

Three research questions guide this study. First, what was the experience of surviving an atomic bomb release? Second, for participants who were *in utero* at the time of bombing, what stories were they told about the event? Third, what impact did the atomic bombing and/or stories heard have on survivors?

Significance of the Study

Significance to History

This study has significance in several areas. Foremost, speaking to survivors allows a glimpse into an exceptional situation only experienced by few. The historical significance of the World War II atomic attacks in Japan is undisputed. Stories of the bombings should be shared with the American public and with healthcare providers; as we can learn how to better provide care to victims during the next catastrophic event from this unique group of individuals. With the bombings occurring over 63 years ago, it is imperative that we talk to the survivors now, while they are still alive and able to tell their stories. However, gaining knowledge about their experience is not simply for historical interest; radiological emergencies have relevance to present day. Current world context ushers a threat of nuclear warfare, with the United States, the Soviet Union, United Kingdom, France and China possessing nuclear weapons. Possibly more alarming are those countries building nuclear arsenals that are not part of the nuclear non-proliferation treaty, including India, Israel, and Pakistan (Wilson, Loretz, & Johnstone, 2005). At the time of this writing, North Korea most recently launched a long-range missile on April 5, 2009 (Harden, 2009); arguably this act poses a significant threat of nuclear weapon use. With a legitimate threat of future nuclear attacks, it is imperative that we learn from the primary experiences of atomic bomb survivors.

Significance to Nursing

Furthermore, this research holds significance to nursing as a profession. Research efforts focusing on survivors' health status can provide a more realistic

perspective of both immediate and long-term health care needs following exposure to an atomic bomb. A thorough and accurate assessment of health needs is essential to deliver appropriate nursing care. Regardless of the type of disaster event, nursing care is a central aspect of promoting health and saving lives. An improved understanding of the physical and psychological effects of a calamitous event can be extremely beneficial and could assist in both providing nursing care after a disaster event and preparedness efforts in the event of future disaster needs.

As nursing incorporates a holistic perspective of patients, it is appropriate for a nurse to perform this research. Gathering stories from narratives and assimilating the data is one of the basic functions of nursing. Taking a health history is a skill taught early in the nursing curriculum. Nurses must daily collect information from patients, assimilate the facts, and plan appropriate responses. In an article arguing for historical research in nursing, Newton clearly stated the benefit of historical research, “The pattern of the past may help the path for the future” (Newton, 1965, p. 21). Having the opportunity to gather narratives from A-bomb survivors is invaluable for several reasons: gaining an understanding of caring for individuals after a disaster; gaining knowledge that can assist nurse leaders in planning and response efforts after the next traumatic event; and advancing nursing research and scholarship related to disasters.

Advancing nursing scholarship in the arena of disaster nursing is paramount. Newly recognized as a specialty, disaster nursing allows nurses to bring a holistic perspective to providing care for patients and communities under duress. Unfortunately, the few nursing scholars with disaster expertise necessary to examine phenomena of

interest in this arena have resulted in limited research in disaster nursing. Additional work to gain knowledge in the management and care during disasters is needed, as this research can directly influence practice.

Method

Using a qualitative descriptive approach to explore the atomic bomb survivors' experiences can provide a realistic perspective of the event. The general approach to the study includes elements of three qualitative methods: narrative analysis, oral history and ethnography. These methods allow the voice of participants to be heard and include exploration of meaning, experiences, and stories to gain perspective or promote advocacy. All three qualitative methods gather a story, allow first-person accounts, and use open-ended interviewing in data collection. This research utilizes elements of these methods, with an oral history approach to data collection and preservation and a narrative analysis approach to aspects of interviewing and data analysis. Ethnography allows for careful exploration of artifacts and other collected items.

Narrative analysis stems from narrative inquiry, in which a researcher studies the experiences of individuals by asking them to provide stories about their lives (Creswell, 2003). Narrative inquiry experts Clandinin and Connelly (2000) further describe the process as being one that

> asks questions, collects field notes, derives interpretations, and writes a research text that addresses both personal and social issues by looking inward and outward, and addresses temporal issues by looking not only to the event but to its past and to its future (p.50).

Oral history consists of recording memories of participants about selected historical events. It has been argued that as an expression, oral history has become ubiquitous and accepted as a normal essential part of people's histories (Charlton, 2006). By definition, oral history provides a first person account of personal memoirs as historical documentation (Taft, Stolder, Knutson, Tamke, Platt, & Bowlds, 2004; Texas Historical Commission, 2004). Further description of the method will be explored in Chapter 3.

A semi-structured interview process was utilized to guide the encounter, and to facilitate and encourage conversation to elicit information. Interviews were audio-taped and transcribed. Further, the researcher made extensive field notes following each interview. Additional information on the procedure will be given in Chapter Three. Next, the key aspect of time will be discussed.

Time

One consideration for this research project is the factor of time, based on the event of interest occurring 63 years ago. However, several factors support proceeding with research from the past, regardless of the time lapse. First, use of oral histories requires a lapse in time. As previously researched, findings have shown that replication of a traumatic event can occur, even if more than 40 years have passed (Schreuder, Egmong, Kleijn, & Visser, 1998). This indicates it is possible for accurate recall of a tragedy that occurred many years ago. Additionally, the concept of flashbulb memory reduces the influence of the time lapse. Originally introduced in 1977, flashbulb memories have two principal determinants: "a high level of surprise and a high level of

consequentiality, or perhaps emotional arousal" (Brown & Kulik, 1977, p. 73). This type of memory is a "vivid, long-lasting memory for the circumstances surrounding the reception of news about a surprising or shocking event" (Davidson & Glisky, 2002, p. 99). This concept supports the belief that due to the shocking, vivid, and highly consequential nature of the atomic bomb, survivors of the event have a distinct memory of the event. Furthermore, based on the time since the event occurred and the fact that survivors are growing older, now is a critical time to investigate the survivors' stories while they are still living.

Conceptual Definitions of Terms

Prior to delving further into the research, I will provide operational definitions for the concepts of interest.

- Atomic bomb survivors: frequently referred to as *hibakusha*, meaning "explosion-affected person (s)" (Lifton, 1967, p. 7). According to Robert Lifton, a psychologist who has studied the survivors, the *hibakusha* includes individuals who had significant exposure to radiation, meeting one of the following criteria: (1) those who at the time of the bomb were within the city limits of Hiroshima; (2) those who came into the city limits within 14 days and entered a designated area extending to about two thousand meters from the hypocenter; (3) those who came into physical contact with bomb victims, that aided or disposed of bodies; and (4) those who were *in utero* at the time and whose mothers fit into any of the first three groups (Lifton, 1967, p. 7). When referencing survivors throughout this research, I am proposing that a survivor is an individual who fits into one of the

four above categories. The status of an atomic bomb survivor is measured by self-report.

- Health status: For the purposes of this study, health status is defined as the degree of physical and mental well-being and/or the challenges they have experienced since the bombing, such as: overcoming adversity, establishing work, family, engaging in activities of daily life, and going on to live a fulfilling life.
- Disaster: “situation where the normal means of support and dignity of people have failed as a result of a natural or manmade catastrophe” (World Health Organization, 2002, p.1). In this research, disaster is measured as the atomic bombings of Hiroshima and Nagasaki, Japan of 1945.
- Surviving/survival: to endure after the occurrence of some event, especially adverse or unusual circumstances (Dictionary.com, 2008). Nurse researchers Marquart & Sauls (2001) suggest five domains are incorporated into the concept of survival: physical, psychological, social, spiritual, and financial. For the purposes of this study, survival is measured as the ability to continue to exist following the atomic bomb releases. It is anticipated that various aspects of the five domains or survival may be present in the survivor’s stories.

Assumptions

Based on the literature, the nature of the study, and the researcher’s experience, several assumptions were made prior to embarking upon the study. These were:

1. Many survivors had significant health consequences resulting from the atomic bomb.

2. Health consequences may be physical, psychological, or a combination of both.
3. For people to endure the atomic bombing event and the previous 63 years, some type of survival process has occurred. Aspects of coping and/or resilience may be a part of this survival process.
4. There is information to be gleaned from the atomic bomb survivors.

Limitations

The following factors were recognized as limitations of this study:

1. Given constraints of the study, the researcher used a purposeful and accessible sample.
2. The event of interest occurred 63 years ago, which may influence participants' response.
3. The majority of individuals living close to the epicenter and those who were impacted the most by the atomic bomb died immediately or within a short period of time, preventing their stories from being told.
4. The participants are currently residing in the United States; their stories will be influenced by their transcultural experiences.
5. The participants for this study have a relationship with the Friends of *Hibakusha* survivor support group. This group may have different experiences than all survivors.

Delimitations

The delimitations of this study are:

1. Interviews were conducted only in the United States with fluent English speaking participants.
2. Participants were born prior to April 1946 and fit into one of the *hibakusha* categories
3. Participants were obtained through contact with the Radiation Effects Research Foundation (RERF) in Japan, a local nuclear physicist who has worked with the Japanese and RERF for over 30 years, and a liaison with the Friends of *Hibakusha* (FOH), a non-profit organization that supports Japanese and Korean American atomic bomb survivors.

Qualifications of the Researcher

Prior to this endeavor, I participated in qualitative research work and concentrated study in radiation effects. I have taken a qualitative methods research course, and have various classic textbooks used by qualitative researchers as references. As an active participant in a qualitative research group at the University of Tennessee, I have gained experience in evaluating interview transcripts, coding, and theme identification. As a part of my doctoral work in Homeland Security Nursing, I completed training in the emergency management of radiation accident victims taught by the Radiation Emergency Assistance Center/Training Site (REAC/TS) at Oak Ridge National Laboratory. Finally, I had the opportunity to study for two weeks with subject experts at the Radiation Effects Research Foundation (RERF) in Hiroshima, Japan, and have developed knowledge of atomic bomb research efforts and Japanese culture.

Additionally, as a nurse I am familiar with interviewing, asking open-ended questions, using probes and working with people under stress from adverse events. With my prior education in public health and epidemiology, I was especially skilled in evaluating the impact of events on populations.

Finally, a diverse dissertation committee with members skilled in qualitative research among vulnerable populations, historical study, resilience theory and cultural studies guided and directed the study.

Summary

For a researcher, the opportunity to speak with atomic bomb survivors provides a unique experience to study an exclusive group of individuals. Far reaching implications can be achieved through this research. Through talking to atomic bomb survivors about their experience and health, a greater understanding of immediate and long-term healthcare needs resulting from disasters is obtained. The following chapter will explore the literature currently available.

CHAPTER 2

REVIEW OF LITERATURE

As previously stated, the purpose of this study is to explore the experiences of atomic bomb survivors. From the literature, research based on the medical model is most prevalent, with limited or absent evidence regarding nursing care, a holistic view, or psychosocial aspects existing. An extensive literature search from CINAHL, PubMed, and Google Scholar was performed. Additionally, information from archived documents from historical research and a reference list from a subject expert was obtained. A historical perspective of the atomic bomb, the impact of the bomb, a review of previous research related to the atomic bomb, resilience, and other concepts of interest is provided in this chapter.

The Road to Hiroshima

A Historical Perspective of World War II

One cannot begin a discussion of the atomic bomb without framing the event within a historical perspective, both in respect to what happened prior to the bombing and the aftermath. According to historian Michael Kort (2007), the Pacific War between the United States and Japan was initiated years prior, based on the events occurring around the world. The Pacific War between the United States and Japan had been hard fought between December 7, 1941 and August 1945. Tokyo acquired former Germany-held islands in the central pacific and a struggle for the control of the sea emerged. In World War II, significant military milestones and battles comprised the war; including the attack of Pearl Harbor in December 1941, Battle of Midway in June 1942, Guadalcanal

in August 1942, followed by Iwo Jima and Okinawa in February and April of 1945. The bloodshed of thousands of military personnel from both Japan and America resulted from the fierce battles.

The war between Japan and the United States was bound by the events of World War II. The Manhattan Project, tasked with the development of the atomic bomb, was undertaken as a response to the German threat. As stated by Kort (2007), American leaders had the conviction that both Nazism and Japanese militarism had to be uprooted in order to provide for a permanent postwar peace. According to Selden, the atomic bombing of Japan was directed against a nation that was militarily defeated in all but name yet spurned surrender (1989, p. xxiii). The United States was working under the belief that both Germany and Japan had to be defeated, and "the search for a less costly way to end the war on Allied terms continued" (Kort, 2007, p. 45) President Truman was determined to save as many American lives as possible.

The impact of the atomic bomb use was considerable and would resonate for decades to come. In the opinion of Kort, "the use of the atomic bombs against the Japanese cities of Hiroshima and Nagasaki in August 1945 is arguably the most controversial single act in the history of American warfare" (Kort, 2007, p. xiii). The bombs destroyed cities, killed thousands instantly, ushered in the use of weapons that far exceeded previous weaponry, and had the capability of destroying human life. The bombings resulted in Japan officially announcing its surrender on August 14, 1945. Additionally, the act introduced a new frontier of warfare and weaponry to the nations. Clearly, this monumental event shaped both the history and future of the world.

The Progression of the Bomb

The devastation from *Little Boy*, the atomic bomb that generated extreme destruction on Hiroshima, was conceived several years prior to its release. The United States' journey to nuclear warfare began with the discovery of fusion in 1939. Additional momentum was gained on November 1, 1939, when the Briggs Committee Report recommended that the United States begin investigating the possibilities of nuclear weapons. Further progression developed in June 1940 with the creation of the National Defense Research Council. Another significant project impetus was the formation of the Manhattan Engineering District, later known as the Manhattan Project begun in June 1942. The project reached full throttle on December 28, 1942 when President Roosevelt approved the large construction projects necessary to build the bomb (Kort, 2007). Scientists H.C. Urey, Ernest O. Lawrence, and J. Robert Oppenheimer were instrumental in expanding the knowledge and technology to bring the Manhattan Project to fruition (Purohit, 2004). Their work resulted in the production of a viable atomic bomb capable of immense destruction unlike the world had ever known. During July of 1945, a test bomb was released at Los Alamos to provide final evaluation of the device. The magnitude was considerable, yet soon the world would discover the impact of the bomb on human life.

August 6, 1945

In an instant flash, the lives of many were forever altered on August 6, 1945, when *Little Boy* was dropped on Hiroshima. Two air raid alerts had sounded during the night. A third alarm sounded at 7:10 am. Within an hour, *Little Boy* made contact at 8:15

am. The magnitude of the bomb and the accompanying destruction were beyond imagination. The uranium weapon exploded 1,850 feet in the air above Hiroshima with a force estimated at the equivalent of 12.5 kilotons of TNT (Selden, 1989). With Hiroshima being the seventh largest city in Japan, the target was an important military center and a major port area (Kort, 2007). Several years of research, planning and effort was unleashed on Hiroshima, resulting in utter devastation.

August 9, 1945

A mere three days later, Nagasaki was assaulted by a second atomic bomb, *Fat Man.* At 11:02 am on that hot, humid August morning, a bomb yielding 22 kilotons of force attacked the city in the middle of a valley (Selden, 1989; Trumbull, 1957). The force from the plutonium Nagasaki bomb was three times as powerful as the uranium bomb from Hiroshima, yet deaths were decreased due to Nagasaki being less populated. Both cities suffered losses beyond imagination, with countless lives perishing immediately, and leaving those who remained with significant hardships and infirmities.

Impact of the Bomb

When *Little Boy* was released, the terror began. The blue sky was sweltered by the incandescent white light of the enormous fireball. Scientists estimated the fireball was 250 feet wide and the temperature at the burst point immediately reached several million degrees (Kort, 2007; Trumbull, 1957). Next came the roar with an indescribable sound; followed by a wave of concussion, resulting in the leveling of 6,820 buildings and damaging 3,750 more. The fireball consumed an enormous amount of dirt, dust, and debris and quickly formed a massive mushroom cloud. A dark shade fell over the city

as a muddy rain began to fall from the sky (Trumbull, 1957). The enormity of the destruction was unique, immediate, and wide reaching. In a flash, it had shattered an entire city, leveling five square miles instantly (Kort, 2007).

Significant damage resulted from the bomb. In the city of Hiroshima with approximately 340,000 to 350,000 people, an estimated 90,000 to 166,000 died within two to four months of the bombing. In Nagasaki, some 60,000 to 80,0000 died among a population of 250,000 to 270,000 (Radiation Effects Research Foundation, 1999). It has been estimated that approximately 50 percent of the population died immediately or during the first six days (Lifton, 1967; Selden, 1989; Trumbull, 1957). Of those that did not die immediately from the blast, many were badly burned or injured.

Figure 3. Alfred Eisenstaedt. *Mother and child in Hiroshima, four months after the atomic bomb dropped.* 1945, photograph, 14.3 x 17.8 in.

The intensity of the bomb instantly killed those immediately surrounding the epicenter. A radius of two thousand meters (1.2 miles) is generally considered to be the critical area for susceptibility to radiation effects, with a high mortality from blast, heat, and radiation (Lifton, 1967). Sudden death occurred within one kilometer of the hypocenter (Nagai, 2000). Others in close proximity received terrific burns and substantial injuries. A physician who treated the survivors of Hiroshima recalled the afflictions from the bomb. Of those left who did not immediately die or suffer burns, many developed other symptoms. They felt weak, nauseated, could not eat, developed severe diarrhea and fever; some died within ten days. If they survived longer than ten days, many lost their hair; hemorrhages and ulcers began to appear in the skin/mucous membranes; death resulted from pulmonary or intestinal infections. The bone marrow had been completely destroyed and all elements of the blood were depleted (Liebow, 1970).

A radiologist working at the Nagasaki Medical University provided an in-depth report of the experience of providing care to bomb victims after the Nagasaki attack. In his account entitled *Atomic Bomb Rescue and Relief Report*, Dr. Nagai provides a synopsis of the body's response to the bomb. He described the bone marrow and lymphatic system to be most sensitive tissues with most severe damage; mucosa was frail, diarrhea, and hair loss were also frequently observed. Nagai observed medium damage to lungs, kidneys, adrenal, liver and pancreas, while reproductive organs were destroyed, and eyes often developed cataracts. Individually, the patients subjectively reported symptoms of whole body injury, including fatigue, apathy, headache, loss of

appetite, and nausea (2000). Clearly, the blast from the bomb and the radiation exposure had a long-term influence on those who survived the initial attack; many were left with residual health effects for years to come.

The Disaster Response

In addition to human life, significant destruction enveloped the city. A researcher who interviewed survivors described the toll the bomb had on the city.

> No city was ever so prostrate. All means of communication were gone. Seventy percent of the firefighting equipment was destroyed, and 80 percent of the personnel were killed, wounded, or otherwise unable to respond to the emergency. Concussion had broken the water mains and pipes were melted in the incredible heat…Of forty five hospitals, only three were left standing. Only 28 out of 290 physicians in the city were unhurt, and 126 of the 1,780 nurses…All facilities virtually nonexistent (Trumbull, 1957, p. 18).

Figure 4. Bernard Hoffman. *Residents wander cleared streets bisecting the ruins of buildings reduced to piles of rubble.* 1945, photograph, 17.8 x 12.1 in.

The loss of responders to assist in the response was enormous, with 90 percent of doctors and nurses being casualties. Many of the remaining personnel who assisted survivors immediately following the bomb paid a heavy price for their service, contracting radiation sickness and having subsequent health problems (Levin, 1985).

The response and dedication of the medical staff that survived the initial bombing was impressive. Following the bomb in Nagasaki, survivors of the Medical College Hospital organized medical rescue teams and started treatment of burned and injured citizens in the most horrific circumstances, regardless of their own injuries (Sekine, 2003). A detailed list of medical materials that were supplied by the government and used in relief work included: dressing, gauze, cotton balls, stitches, bandages, mercurochrome, limaon, Cresosol soap solution, lysol, hydrogen peroxide, alcohol, sesame oil, antacids, phenacetin, sodium carbonate, boric acid, Vitamin C, Vitamin B, vitacampher, digitalis, narcopon, sodium citrate, acrinol, thrombogen, ephedrine, and lard (Nagai, 2000).

As soon as fires resulting from the bomb had cooled, relief work began. The first relief station was set up on the afternoon of August 6 at Tamon. Armed forces from the naval base at Kure and Iwakuni provided assistance. Aid and relief parties were dispatched to assist in various areas; including Fukuramachi school, the Red Cross hospital (despite severe damage), and the Post Office Hospital, also known as the Walter Reed Hospital of Japan (Liebow, 1970). Of the people that survived, they streamed back into the city in search of relatives and friends.

Figure 5. Life magazine. *Red Cross Hospital, Hiroshima.* 1945, photograph.

Reinforcements came to assist in the response efforts. As early as August 8, 1945, military personnel from around the world including physicians and medical authorities on radiation were brought in to evaluate the impact (Lifton, 1967). Dr Liebow, a member of the medical investigation team, described the work to ascertain the effects of the atomic bomb that began immediately following the bomb. The work performed by quantum physicists, autopsies of the deceased, and physicians working with those wounded captured invaluable information to assist in a greater understanding of the medical effects of the bomb (Liebow, 1970).

From the perspective of a physician working at the hospital in Nagasaki, Dr. Nagai (2000) provided details of the resulting health effects following the bomb. The human body could be injured by the atomic bomb in two ways: by the blast of air pressure and/or by radiation. He further described the initial triage system that was

utilized after the Nagasaki bombing. Victims were initially classified according to direct and indirect injuries, as well as primary or secondary injuries. Further classification of symptoms was done by onset; instant, early (within one week), late (three weeks up to one year), and delayed (greater than 1 year up to decades).

Similar events from the Hiroshima bombing were also documented by Dr Michihiko Hahira (1995), a physician who was not only a victim of the A-bomb, but also a provider of care. In his journal, Dr. Hachiya, a Japanese physician, described the adversity he overcame to make it to the hospital and provide care to the victims from August 6-September 30, 1945. He described the tribulation in detail; he was initially confined to bed by his own wounds, yet attended to patients, continually assessed their status, and documented symptoms meticulously (Hachiya, 1995). A vast array of quantitative research has been done to ascertain specific health outcomes of survivors and will be further explored later in the chapter.

Medical follow-up was provided to survivors after the initial bomb. As described by Selden, a yellow-covered book called “The Atomic Bomb Hibakusha Special Handbook” was developed and distributed among the survivors (1989). Those who possessed a copy of the handbook could receive free physical medical evaluations every two years. The notebook was issued to either 1) individuals that had experienced the bombing within a two-kilometer radius from the epicenter or 2) people who had entered within a three-kilometer radius within a week of the bombing (Shiro, 1989). Estimates of the number of survivors of the bomb have vacillated and the exact number may never be known. However, the number of persons who identified themselves as

survivors increased steadily after the enactment of a Japanese law that established free medical care for bomb survivors (Lindee, 1994). Next, a discussion of the post-bomb war era in Japan will be given.

An Occupied Japan and Healthcare

Following the bombings, the United States occupied Japan from 1945-1952. With sixty-six of Japan's major cities being hit by bombings throughout the war, the evidence of Japan's war defeat was everywhere and inescapable. The war left one-third of the population homeless and ushered in critical shortages in food, housing, and employment (Caprio & Sugita, 2007). At the initiation of occupation in 1945, the United States set objectives of demilitarization and democratization as occupation goals in the 1945 Potsdam Declaration. Yet, existing opinions suggest the compromised democratic vision resulted in limitations of basic rights of the Japanese people early in the occupation (Caprio & Sugita, 2007). For example, the US imposed complete censorship of any news of Hiroshima and Nagasaki, preventing dissemination of critical information and news updates. The adverse conditions following the bombing, including homelessness, food shortages, and a suffering economy, all influenced the survivor's health in various aspects. In the immediate aftermath of the bomb, healthcare was directed towards maintaining survival of those who could be saved, either through organized healthcare or the use of home remedies. No organized examination of the health of citizens post bomb came into being until the Atomic Bomb Casualty Commission was established in 1949.

In summary, the magnitude of the bomb and its impact took a tremendous toll on the cities of Hiroshima and Nagasaki. A vast number of individuals were immediately killed, yet of those that survived, significant health needs arose. A medical response was initiated and provided care in the midst of turmoil. The next section reviews previous research efforts associated with the atomic bomb.

Previous Research

Qualitative Research Related to Atomic Bombing

Narratives of the atomic bomb survivors have been offered previously, with two of the most prominent from Robert Lifton and John Hersey. In 1967, Lifton penned *Death in Life,* attempting to record important psychological consequences of exposure to the atomic bomb. Individual interviews with two groups of survivors were performed. The first group consisted of thirty-three survivors chosen at random from lists provided by Hiroshima University Research Institute for Nuclear Medicine and Biology. Additionally, forty-two survivors were specially selected based on their articulation and prominence in the research area. According to Lifton, guilt over survival was a major theme of the experience (Lifton, 1967).

Throughout the book, Lifton provides guidance to methodological aspects of the work. He relied heavily upon introductions by native individuals, made personal visits to the home with a Japanese social worker, tape recorded the sessions, and had transcripts in both Japanese and English. Further, he described establishing a "comfortable operating distance" between *hibakusha* and himself, based on the emotional demands of the work (Lifton, 1967, p. 10).

Knowledge gained from Lifton's previous work guides my research efforts; especially regarding the process of introductions to the participants.

Lifton provides an integral primary source on the psychological effects surrounding the atomic bomb. However, the knowledge gained is limited. Lacking from the research are the aspects of nursing care for the survivors, most specifically psychosocial elements of care. Nurses view situations from a broad, holistic perspective, offering the ability to incorporate various aspects into the study of effects from the atomic bombing. Gaining knowledge in the nursing care needs of radiation exposure victims can improve outcomes in the future. Additionally, current literature is lacking psychosocial components, which can be evaluated through nursing research. Having an emphasis on psychosocial needs can assist in improving holistic care for victims. For example, if the victims feel guilt or shame, therapeutic conversation can assist in improving the psychological health of individuals. Providing long term support following a catastrophic event can assist in recovery for a traumatized person. By taking Lifton's sentinel work and expanding it to encompass nursing and public health aspects, the knowledge base of disaster response to an atomic bomb can be expanded.

Another writer of atomic bomb experiences is John Hersey. As a journalist, he provides a glimpse of the encounter of the bomb from the ordinary person's perspective. Hersey offers a detailed account of the bomb experience from the view of a clerk, a physician, a tailor's widow, a priest and a pastor (Hersey, 1985). Their story of their bomb experience was told within the context of their family unit, recalled the event with keen sensory perceptions (smell of burning bodies, white color of flash, and crying of

small children), and noted the intensity of the fires following the bomb. Additionally, Dr Fujii spoke of the loss of personnel; only six physicians out of 30 were able to function and only ten out of 200 nurses were available (Hersey, 1985). Of particular interest was the author's note that "the lives of these six people…would never be the same" (p. 114).

In addition to the qualitative research by Lifton and Hersey, first-hand accounts of the bombings also exist. Eyewitness testimonies, drawings, poems and stories were compiled and produced by the Hiroshima Peace Culture Foundation. In these works, fires, burns, and extreme devastation are described and displayed. For example, survivor Chisako Takeoka describes the endless searching and calling aloud for her mother; a calling that was never answered, as her mother perished in the bombing (Hiroshima Peace Culture Foundation, 2003). In a memoir, Sadako Teiko Okuda documents her journey through the ruins of Hiroshima in search of her family members. She describes her life before, during and after the bombings. At the age of 93, Ms. Okuda concludes her story with the following: "May we carry out our lives in ways that honor their suffering. May we by our lives bring meaning to theirs that they may have not died in vain" (Okuda & Vergun, 2008, p. 144). Rich narratives are interwoven to portray the catastrophic event. However, there are no accounts of the nursing care needed or provided, the survivor's health, or impact from the bomb.

Quantitative Research Based on Medical Model

Significant quantitative longitudinal research based on a medical model has occurred with bomb survivors from both Hiroshima and Nagasaki. Unfortunately, aspects of nursing, holistic care, and psychosocial issues have received less attention.

Considerable information has been the result of federally funded research supported jointly by both the American and Japanese governments. Therefore, a historical review of seminal research will be provided.

Timeline

Between 1945 and the present time, key organizations and movements have been pivotal in the conduct of research into the aftermath of the atomic bomb and its effects.

- August 1945: During the days immediately following the bombing, the Japanese National Research Council sent medical and scientific teams to investigate the fallout from the explosion.
- September 1945: Researchers from the Manhattan project arrive, along with scientists from United States Army and Navy researchers.
- October 1945: The United States and Japanese investigations merge to study effects from the bomb.
- November 1946: On November 26, 1946, United States President Truman directs the National Academy of Sciences to begin a long-term study of the biological and medical effects.
- 1946: Significant research was initiated during 1946, with the start up of a mortality study of children born to exposed parents.
- 1948: A major genetic study of 70,000 surviving children was initiated.
- 1949: The National Academy of Sciences entered into a contract with the United States Atomic Energy Commission, which lead to the establishment of the

Atomic Bomb Casualty Commission (ABCC) in 1949. Three main programs were to be established and operated by the ABCC, a genetics program, a medical program for both children and adults, and a pathology service.

- 1950: A Japanese national census was taken, with the survey identifying 284,000 Japanese survivors of the atomic bomb
- 1950: The major Life Span Study (LSS), an investigation of causes of death and incidence of cancer among survivors began in 1950. This study cohort of approximately 120,000 individuals includes survivors who were within 10,000 meters of the hypocenters and persons who were not in the cities at the time of the bombings (controls).

Figure 6. Carl Mydans. *Japanese and American doctors examining victims of a-bomb in Hiroshima.* photograph, 1949, 17.8 x 12.9 in.

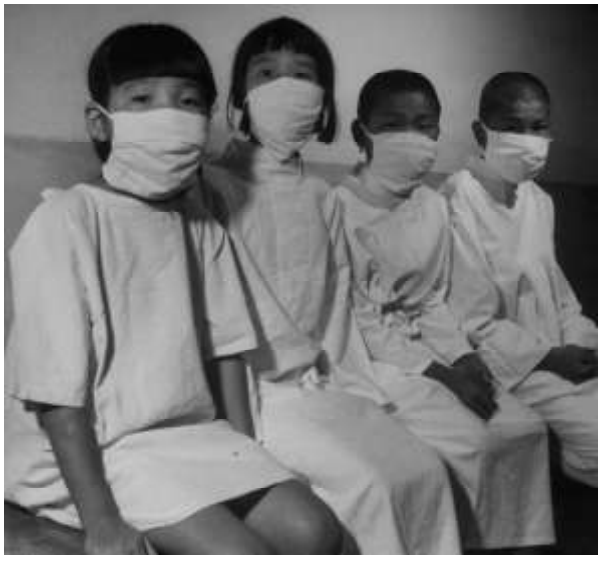


Figure 7. Carl Mydans. *Victims of a-bomb in Hiroshima waiting to be examined by A.B.C.C.* 1949, photograph, 17.8 x 16.5 in.

- 1954: The Woodbury Mortality Report highlighted an increase risk of mortality among survivors. This report assisted in securing additional funds to establish the Atomic Bomb Casualty Commission (ABCC) and highlighted the need for long-term systematic study of survivors.
- 1955: In November, the “Francis Committee Report” was released, providing a report of an ad hoc committee for appraisal of the ABCC program. The committee’s function was to make an objective, scientific appraisal of the ABCC, plan of study, adequacy of data, and future recommendations. Noting the rarity of the information, the committee observed, “the data already collected in this long-term study is uniquely valuable” (Francis, Jablon, & Moore, 1955, p. 8). A summation of the report included the following:

> The continued imaginative investigation of the study population should yield knowledge of great value to medicine, to human biology, and to peaceful uses of atomic energy. It is believed that the program should be strengthened and given increased support (Francis, Jablon, & Moore, 1955, p. 2).

- 1958: Following the formation of the ABCC, an adult health study (AHS) was initiated to investigate the general health of survivors in 1958. Approximately 23,000 persons were included in this cohort, offering the ability to collect disease incidence and health information through biennial medical examinations.
- 1966: The first estimates of radiation doses were published in 1966.
- 1975: The Radiation Effects Research Foundation (RERF) was established April 1, 1975, under joint Japanese and American direction and replaced the ABCC.
- 1977: Original adult health study sample was enlarged to account for attrition among high-dose survivors.
- 2006: My mentor, Dr Susan Speraw, was invited to visit RERF for the first time. This visit was significant in that she was the first doctoral prepared nurse to attend the facility and this visit initiated the partnership between RERF and the University of Tennessee.
- 2006: I entered the Homeland Security program within the College of Nursing
- 2008: I traveled to Hiroshima, Japan, and while spending two weeks at RERF, gained experience and knowledge in biennial examinations and research efforts of atomic bomb survivors.

- 2009: I traveled to San Francisco, California to interview atomic bomb survivors now residing in the United States.

(Brown, 2005; Francis, Jablon, & Moore, 1955; Matsumoto, 1954; Putnam, 1998; RERF, 1999)

Throughout the decades, significant work has been done to evaluate the medical effects of radiation exposure, resulting in valuable data that influences current standards for radiation protection.

Epidemiology Investigations of Survivors

After six decades of data and surveillance of atomic bomb survivors, a plethora of research has accumulated. The Radiation Effects Research Foundation (RERF) initially produced Technical Reports and currently provides an RERF Report and Updates, assisting in the dissemination of research findings. Table 1 summarizes seminal and recent work.

This review of previous research outlines the vast amount of quantitative efforts that have been undertaken to expand the knowledge of the medical effects of radiation. Through RERF, a well-managed system is in place to capture medical impacts from the bomb (Figure 8). Clearly, significant research has occurred among the survivors and their children. However, the majority of research has been quantitative in nature, focusing mainly on medical outcomes, epidemiology, and life span studies. There has been limited qualitative work with the survivors. Additionally, investigations on mental or psychological effects following the bomb have not received much attention (Sekine,

2003). Furthermore, research of the aspects of rendering nursing care in a disaster of this magnitude is also lacking.

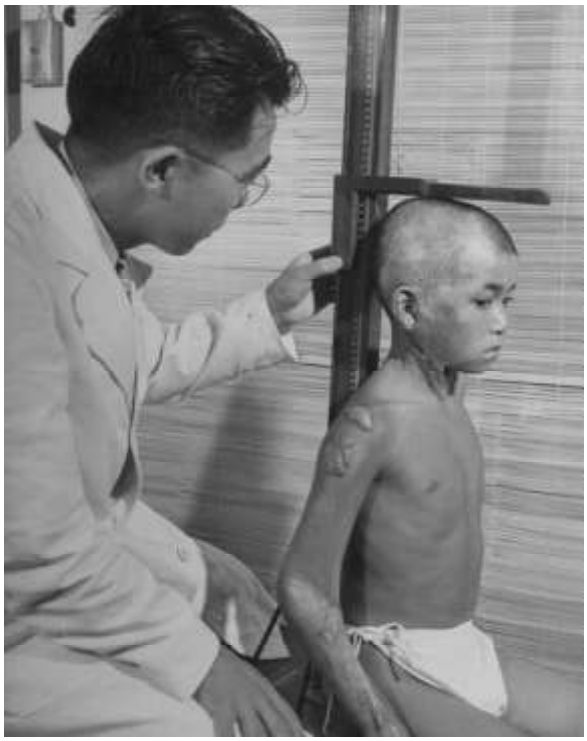


Figure 8. Carl Mydans. *Flashes from a-bomb burned boy who is being examined by A.B.C.C.* Kure, Japan. 1949. 14.1 x 17.8

Table 1. Previous Research Findings

Author(s)	**Year**	**Sample**	**Focus**	**Results**
Shimizu, Kato, & Schull	1991	1,829 participants (subset from the 120,000 Life Span Study cohort); these were *in-utero*-exposed survivors	Cancer risk	In addition to leukemia, the relative risk of cancers of the esophagus, colon, stomach, lung, breast, ovary, urinary tract, and multiple myeloma is significantly increased. The relative risk tends to be higher for survivors who were young at the time of bombing.
Ichimaru, Tomonaga, Amenomori, & Matsuo	1991	120,000 from the Life Span Study cohort	Leukemia	Increased risk to all types of leukemia increased with radiation dose. Provided support of chromosome aberrations in survivors, noted by changes in peripheral blood T-cells and bone marrow cells.
Shimizu, Mabuchi, Preston, & Shigematsu	1996	120,000 from the Life Span Study cohort	Radiation-induced leukemia and solid cancers	Radiation-induced leukemia occurred 2-3 years after exposure. Risk of leukemia reached a peak within 6-8 years and has decreased with time. However, this is not been true of solid cancer. Radiation-induced solid cancer begins to appear at later ages than normally prone to develop and continues to increase proportionally. Sensitivity to radiation carcinogenesis may differ by age at time of bombing. Excess relative risk is higher for females than for males (background rate is higher for males than females).

Table 1 cont.

Author(s)	Year	Sample	Focus	Results
Kodama, Fujiwara, Yamada, Kasagi, Shimizu, & Shigematsu	1996	5,000 participants from Adult Health Study cohort	Non-cancer disease	"Because of the consistency of results, it is almost certain that cardiovascular disease (CVD) is higher among atomic bomb survivors." However, previous studies did not include or adjust for all CVD risk factors, so "it is difficult at present to conclude that the increase in CVD among survivors was a direct effect of radiation (p. 14). Established relationship between A-bomb radiation exposure and hyperparathyroidism. A significant dose response is observed between A-bomb radiation exposure and chronic liver disease.
Cologne & Preston	2000	120,200 persons from the Life Span Study cohort	Life expectancy	Median life expectancy for all survivors was about four months shorter than individuals with zero-dose exposure. Estimated that 2.6 year average loss of life expectancy was found for survivors with higher radiation dose estimates.
Yamada, Kasagi, Sasaki, Masunari, Mimori, & Suzuki	2003	1774 participants from Adult Health Study cohort	Midlife risk factors and dementia	Increased systolic blood pressure and low milk intake in midlife were associated with vascular dementia detected 25-30 years later. Early interventions to control risk factors for vascular disease might reduce the risk of dementia.

Table 1 cont.

Author(s)	Year	Sample	Focus	Results
Neriishi, Nakashima, Minamoto, Fujiwara, Akahoshi, Mishima, Kitaoka, & Shore	2007	3761 from Adult Health Study cohort who underwent medical exam during 2000-2002 and for whom radiation dose estimates were available.	Cataracts	Prevalence of postoperative cataracts increased significantly with radiation dose, regardless of subjects age at time of bombing. The dose response was suggestive over the lower-dose range of 0-1 Gray (threshold of 2-5 Gray is usually assumed by the radiation protection community).

Survivorship

In addition to atomic bomb and radiation exposure, literature on survival was evaluated. Defined as a person who has managed to live in spite of a threatening experience, a survivor has previously included individuals with life threatening or terminal illness, other significant health issues, and abuse histories (Marquart & Sauls, 2001; Peck, 2008). During a concept analysis of survivorship, literature suggested six shared experiences of the state: (1) confrontation of mortality; (2) alienation and isolation; (3) need for support; (4) search for meaning through the lived experience; (5) need to reprioritize life; and (6) continued vulnerability (Peck, 2008). From their work with individuals having colon cancer, Little and colleagues found three common experiences among survivors: an immediate impact of the diagnosis with an identification as a cancer patient, a state of vulnerable alienation from social familiars, and a persistent state of boundedness, or an awareness of limitations (Little, Jordens, Paul, Montgomery, & Philipson, 1998).

Minimal research was found on the process of survivorship among individuals exposed to the atomic bomb: one qualitative study explored meanings of surviving Hiroshima and Nagasaki. Sawada and colleagues identified nine themes that could be divided into two main categories: those connected to the experience itself and others pertaining to life afterward. These themes included: (1) memories of the attack and immediately afterward; (2) postwar social action; (3) physical and health concerns; (4) view on Japanese society, including social stigma; (5) survivor guilt; (6) discussing family members killed in bombings; (7) life afterward; (8) worrying about the future; and

(9) reasons for surviving the bomb, mainly good luck (Sawada, Chaitin, & Bar-On, 2004).

Yamada and Izumi (2002) evaluated psychiatric sequellae in a-bomb survivors from a secondary analysis of a self-administered questionnaire given to 9,421 AHS subjects in 1991-1965. They selected indicators of anxiety and somatization symptoms based on the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV criteria. Findings suggested that a higher prevalence of anxiety symptoms and somatization symptoms were observed in subjects with acute radiation symptoms than in those individuals without them. The location of subjects was also central to their findings: a higher prevalence of anxiety was observed for those in the city at the time of bomb than individuals who were outside the city (Yamada & Izumi, 2002). Although this article brought focus to the psychological impact of the atomic bomb, limitations exist with the study. Researchers never met with survivors face to face or spoke to the individuals about their mental health; they were making assumptions based on a tool that was not designed to measure mental health issues. Just because a survivor indicated multiple physical health symptoms resulting from the bomb does not mean they were having psychosocial problems; a further investigation is warranted.

When further evaluating survivorship, several themes emerge consistently throughout the process: (1) a significant event that has considerable impact on an individual's life, possibly forever altering their lives; (2) a period of vulnerability; and (3) a restructuring of their "new life", post event. Another key aspect is that following the event, survivors seem to take on a new identity based on the situation, as if they are

forever marked by the circumstance. For example, an individual might refer to his or her self as a breast cancer survivor, Hurricane Katrina victim, or A-bomb survivor, instead of their previous identification, often revolving around their occupation. With this alteration of identity may come isolating stigma. For example, in Hersey's (1985) book, he noted that non-*hibakusha* employers developed prejudice against survivors, based on the belief that survivors were unreliable workers and prone to ailments.

Clearly, substantial research has been performed with survivors, according to the medical model and focused mainly on medical outcomes. Additionally, the process of survival has been documented in the health literature, mainly associated with individuals who overcame a terminal or significant illness. A theoretical framework can assist to inform the researcher and to direct future work and should be further explored.

Theoretical Perspective

Resilience

Based on conversations with survivors and healthcare providers who render care to them, overcoming extreme adverse conditions is a significant aspect of the *hibakusha's* story. Resilience theory is particularly salient to this group. Resilience can be broadly defined as "a phenomenon of positive adjustment in the face of adversity" (Haase, 2004, p. 342). Historically, three waves of research in resilience have occurred since the 1970s: efforts to describe personal qualities that predict success; resilience as a process; and resilience as a motivational life force to be fostered in all individuals (Haase, 2004).

Resilience was further explained as a dynamic process, highly influenced by protective factors, and resulting in various competencies, or healthy skills and abilities individuals can access. Model, contrary, and borderline cases were illustrated (Dyer & McGuinness, 1996). Later, Polk (1997) summarized defining characteristics of resilience, including dispositional, relational, situational, and philosophical patterns. Highly variable outcomes tied to normative judgments are one limitation to resilience research (Dyer & McGuinness, 1996).

Previous Resilience Research

Systematic study of resilience by nurses has been occurring throughout the last two decades, with various definitions, characteristics, populations, and approaches for knowledge development (Haase, 2004). Felten and Hall (2001) reported a case study of resilience in women over the age of 85 years. The authors described resilience in this population as a symbol of a coiled wire, enclosed within a box. Environmental factors within the box included “frailty, determination, previous experience with hardship in learning to cope, access to care, culturally based health beliefs, family support, self care activities, caring for others, and functioning like efficiently working machines” (p. 46). External factors (such as stress) influence the ability to recoil. Elderly women alter their lifestyles in response to loss, illness, or impairment. The ability to respond to and recover from these changes gives indication to their resilience capabilities. This research provides insight of resilience in an older population and offers implications for nursing practice, such as counseling patients, insuring access to health care, and the need for culturally sensitive care.

Resilience within the Cultural Context

Several research efforts have included cultural aspects with respect to resilience studies (Hamahata, Magilvy, Hoshino, & Komatsu, 2004; Hunter, 2001; Tummala-Narra, 2007; Ungar, 2008). In an effort to explain the experience of Japanese elders in a health-care facility, Hamahata and colleagues found that “keeping a good heart” symbolized resilience and positive acceptance of life for elderly persons residing in a health-care facility (Hamahata, Magilvy, Hoshino, & Komatsu, 2004, p. 27). Of particular interest was the role that memories played in their present constructed meaning of reality. “The participants’ talk about their memories that demonstrated the reality of the life they had led, and this was tied to an expression of their present existence” (Hamahata et al., 2004, p. 32). This offers a glimpse of resilience within an older Japanese population and suggests the connection between past memories and current living.

From a cultural lens, resilience has been studied across various cultures. In a mixed methods study of over 1500 youth from around the world, Ungar illustrated four propositions that are foundational to cultural resilience: (1) resilience has global as well as culturally and contextually specific aspects; (2) aspects of resilience exert differing amounts of influence on a child’s life depending on the specific culture and context in which resilience is realized; (3) aspects of children’s lives that contribute to resilience are related to one another in patterns that reflect a child’s culture and context; and (4) how tensions between individuals and their cultures and contexts are resolved will affect the way aspects of resilience group together (Ungar, 2008, pps. 226-231). The author

noted that in order for an individual to display resilience, they must come from resilient families and communities, suggesting the environmental influence and relationships. Further, Ungar reported that little investigation into the constructs of resilience have been performed outside the non-western cultures; suggesting that most resilience research is anchored in a Eurocentric epistemology. Although my study will not include a pediatric population, culture and context can influence individuals of all ages. Ungar's work promotes the need for resilience exploration across diverse cultures; thus, the evaluation of resilience among atomic bomb survivors fills a gap in the current knowledge base.

An interesting study of resilience among the Japanese came from an exploration of Japanese Americans who experienced the World War II internment camps. Several weeks after the Japanese military bombed Pearl Harbor, President Roosevelt signed Executive Order 9066, which authorized the removal of all Japanese (regardless of citizenship) in the western part of the United States, from their homes, requiring them to live in internment camps for several years (Nagata & Takeshita, 1998). Despite living in adverse conditions and suffering hardships, many former detainees went on to lead productive lives. A closer evaluation of their experience can illuminate facets of resilience among a Japanese population.

In a study looking at resilience and coping among these persons, internment camp brought various stressors: anti-Japanese sentiment and war hysteria following the Pearl Harbor bombing, quick uprooting which led to severe economic losses for many, adverse physical conditions including freezing winters, blazing heat in the summer, and

frequent dust storms. In addition, innocent men were arrested by the Federal Bureau of Investigation because of their nationality, and detainees were tagged with numbers and treated as inmates. Psychologically, the internees suffered as well; many experienced feelings of humiliation or self-blame, while others felt betrayal by their country (Nagata & Takeshita, 1998). Interesting to note, the Japanese cultural values emerged as a dominant contributing factor to their ability to cope under adverse conditions. For this group of Japanese descendants, "learning to endure hardships, resourcefulness, strong family support, and an emphasis on education encouraged the Nisei [second generation Japanese Americans] to actively reestablish their lives and not dwell on the past" (Nagata & Takeshita, 1998, p. 600). The understanding of resilience and coping among this particular group of Japanese individuals aids in establishing context for the evaluation of resilience among the *hibakusha*.

Resilience Following Disasters

Cultural attitudes and beliefs play a critical role in fostering and maintaining resilience in the aftermath of a disaster (Tummala-Narra, 2007). Although no studies of resilience among atomic bomb survivors were found, exploration of overcoming adversity among disaster events has occurred. In a qualitative study looking at coping after the Asian tsunami, Rajkumar and colleagues noted two significant findings. First, diversity in psychological reactions to natural disasters exists and is shaped by culture and secondly, coping mechanisms on both an individual and community level exist and enhance resilience (Rajkumar, Premkumar, & Tharyan, 2008). These findings support the need to evaluate my study findings within the context of the Japanese culture. One

component to evaluate is whether natural disasters or man-made events influence the victim's response and resilience.

Of the research related to resilience and disasters, studies of Holocaust survivors are prominent. Similarities between Holocaust survivors and atomic bomb victims exist, including: events surrounding war, acts of war against innocent people, and the political context. In another disaster research effort, a qualitative study of Holocaust survivors provided several components of resilience. Major themes from the interviews included an initial response of anger and disbelief, the importance of local residents who befriended and assisted survivors, and a resolve to obtain basic necessities. Perhaps resilience was most accurately displayed in two findings: (1) survivors making "a conscious decision to go on living, to celebrate life, and to think positively about themselves (Greene, 2002, p. 11); and (2) "resilience is not looking backwards, but looking forward. The ability to pick yourself up is innate" (p. 11). The Holocaust and the atomic bombings are two of the most monumental acts of war our world has ever known. Similarities exist among the survivors of these two events, yet differences of culture exist; therefore, it is critical to expand the literature by evaluating resilience among the *hibakusha*. Additional knowledge allows comparison between the groups of war victims and may shed light on the process of becoming resilient.

Age has also been a factor in disaster and resilience research, with findings suggesting that while most children are vulnerable, they are nonetheless resilient to many psychological effects of disasters (Williams, Alexander, Bolsover, & Bakke, 2008). Older adults were also evaluated in a rare pre-disaster, post-disaster longitudinal study

of a 747-airplane crash into high-rise apartment buildings in Amsterdam. Findings suggested older persons living closest to the disaster area were likely to experience a relatively small health decline (particularly in regards to mobility) over and above the normal health deterioration associated with aging. Interestingly, a decline in other actions such as daily functioning, cognitive functioning, or self-perceptions of health were not observed (Deeg, Huizink, Comija, & Smid, 2008). This finding supports the belief that older adults are capable of overcoming adversity during a disaster and becoming resilient. Similarities between this work and my research include an evaluation of resilience at a later age; however my participants were exposed to disaster at an early age, and over 63 years ago. It is possible that the age exposed to trauma and/or length of time since disaster occurred may be factors in an individual's ability to be resilient.

Disasters within Japanese Context

As previously introduced, Asia is the most disaster prone area of the world (Kokai, Fujii, Shinfuku, & Edwards, 2004). The potential for natural catastrophes, such as earthquakes, tsunamis, volcanic eruption, typhoons, and cyclones threatens Asian countries. Despite the frequency of these calamitous events, the number of published disaster studies focused on Asian survivors is limited. As suggested by Kokai and colleagues, this scarce investigation could be the result of the strong stigma associated with mental health problems. Receiving the most attention, post traumatic stress disorder (PTSD) gained consideration following the Hanshin-Awaji earthquake in 1995.

One study evaluated post-traumatic symptoms among younger and elderly victims of the 1995 earthquake. Participants were interviewed three weeks and eight weeks after the event. Both groups experienced sleep disturbances, depression, hypersensitivity, and irritability. During the evaluation at eight weeks, the symptoms had not decreased for the younger subjects, while the elderly population displayed a significant decrease in the majority of their symptoms (Kato, Asukai, Miyake, Minakawa, & Nishiyama, 1996). These findings suggest that an elderly population, such as the *hibakusha*, may have a greater capacity for resilience than a younger population. However, exposure to the traumatic earthquake event occurred as they were elderly; not when they were younger as with the A-bomb survivor population.

Another perspective of the Hanshin-Awaji earthquake came from a physician who was both a victim and provided care during the 1995 disaster. Shinfuku (1999) described the aftermath immediately following the event, the first weeks, at one-month post quake, and long-term health consequences. As expected, emergency services were needed immediately; there was an increased need for orthopedic surgeries, forensic services, and many victims reported emotional numbness. Next, exacerbations of chronic diseases presented: diabetes mellitus, hypertension, and loss of memory and/or disorientation were observed, especially among the elderly. Acute stress responses, including nightmares and insomnia were reported. Long-term health consequences consisted of psychological effects, stress-related physical symptoms (hypertension), lowered immunity, and nutritional imbalance. While other studies have

suggested that elderly have increased resilience, Shinfuku reported that elderly who had lost kin were particularly vulnerable to long-term consequences.

The belief that elderly persons may be more susceptible to emotional upset following tragedy was also suggested by an evaluation of psychological distress among evacuees of a volcanic eruption. Ohta and colleagues evaluated 248 individuals from six to 44 months following an eruption of Mount Unzen in Nagasaki, Japan. Using the General Health Questionnaire, they found psychological distress decreased over time, showing progressive improvement over time in anxiety, tension, and insomnia. However, the mean scores showed that recovery was more difficult among the older evacuees, suggesting that they are more vulnerable (Ohta, Araki, Kawasaki, Nakane, Honda, & Mine, 2003).

These previous studies of disaster events in Japan support the need for additional research in psychosocial issues surrounding calamitous occurrences, particularly evaluating age-specific populations. While evidence of both increased resilience and susceptibility has been found in elderly populations, these investigations have generally been immediately after an event, not looking back at previous events. The Neriishi (2006) study of residents exposed to the 1999 radiation leak at the nuclear plant in Tokaimura, Japan, demonstrated that substantial psychological stress can endure over many years and that survivors continued to request mental health consultation for at least seven years following the event. His work indicates that long term and retrospective studies are valuable and indicated after disaster. Yet, historical perspectives on the emotional sequellae of disaster events are rarely obtained.

Culture Care Diversity and Universality Theory

As described earlier in Chapter One, Leininger's Culture Care Theory provides a comprehensive guide for providing care within diverse populations. The Sunrise Enabler allows the researcher to assess and understand the influences of cultural values, beliefs and practices; religious, philosophical or spiritual beliefs; economic factors; educational beliefs, technology views; kinship and social ties; and political and legal factors that contribute to the client's care and health (Leininger, 2006). A key facet of the theory is environmental context, which is a complex, multifaceted dimension in all cultures. In her previous work, Leininger (1978) addressed nursing within the Japanese cultural context. Key aspects of knowledge regarding Japanese culture include the following: (1) basic unit of the Japanese social life is the family. Life with one's family, extended kinsmen, and the community is the central focus of an individual's existence (p. 338); (2) showing honor and respect to parents (especially the father) is vitally important; (3) Japanese have a distinct dedication to work, duty, and obligation to others; and (4) the expression of shame behavior is a deeply seated aspect of Japanese culture.

Leininger's Culture Care Theory has been explicated in various studies across a wide spectrum of cultural communities. In a previous study by Lundberg (2000), cultural care was evaluated in Thai immigrants residing in Sweden. Four themes were identified: (1) care means family and kinship relationships as expressed in daily life; (2) care is expressed in traditional gender roles; (3) care means religious beliefs as expressed in the Buddhist worship; and (4) care means support of traditional health care practices (p. 274). The study concluded that the research supported Culture Care Theory and

Leininger's Sunrise Enabler. Similarities between this study and my research include having an Asian population and evaluating immigrants currently residing in a different country.

Another study focused on the Asian population and attempted to learn about cultural differences, lifeways, and health care systems. Two nurses, Finn & Lee (1996), traveled to China and shadowed a transcultural nurse educator. Findings from their descriptive report conclude that religious and philosophical, kinship and social, political and legal, and economic factors were most significant for the Chinese culture. Further, health and well-being were highly valued and a strong reliance on folk health care systems existed. This research offers a varying perspective on culture and health from a different Asian population, allowing for validation of research findings.

One study explored spirituality among the Japanese by utilizing Leininger's Culture Care Theory (Shirahama & Inoue, 2001). Themes from that research include thanking others and repaying kindness through actions, helping people experience peace and hope during death and beyond, ancestor worship, and nurse-patient communication (Shirahama & Inoue, 2001). Researchers explored the social structure according to Leininger's Sunrise Enabler and described factors associated within the Japanese community they studied. Implications for nursing care included the necessity for nurses to have an awareness of the need for spiritual care, provide culturally relevant spiritual care, and maintain contact with patients (Shirahma & Inoue, 2001). Although spirituality was not a primary focus of my study, the ability to compare and

contrast my findings with another cultural care evaluation within the Japanese community can assist my efforts in data analysis.

In summary, significant research has occurred in the past with atomic bomb survivors, with a primary focus on quantitative measures of health effects following radiation exposure. Resilience Theory and Culture Care Theory has been explicated in the literature and served as a point of reference as I prepared my research study. The process of resilience is a complex, adaptive process that various individuals are capable of following a disaster or traumatic event. The next chapter will further describe the methodology for this work.

CHAPTER 3

METHODOLOGY

This qualitative descriptive research was designed to explore the phenomenon of surviving the atomic bombings in Hiroshima and Nagasaki, Japan. Qualitative research allows the voice of participants to be heard and includes exploration of meaning, experiences, and stories to gain perspective or promote advocacy. The researcher typically asks open-ended questions, gathers emerging data, and develops themes from the data (Creswell, 2003). The methodology of this study is based on a combination of two strategies: oral history and narrative analysis, specifically thematic content. This chapter will: review the methodology, state research questions, define the sample, outline data collection procedures, present the instruments, discuss the interview questions, and describe the method of data analysis.

Methodology

A qualitative, descriptive methodology was used for this study. It incorporated key elements of narrative analysis, oral history and ethnography.

Narrative Analysis

Narratives were obtained to gain valuable information from a cohort of survivors who experienced the most significant act of war humankind has known. According to Riessman (2008), narrative analysis interprets texts that focus on a story. Researchers focus on distinctive actors, places, and a particular time. Within narrative analysis, the data collected is examined by content analysis. From a broad perspective, three main steps are included in content analysis: a naïve reading of the text, followed by one or

more structural analyses, and finally, an interpreted whole (Frid, Ohlen, & Bergbom, 2000). Frequently taking the perspective of the storyteller, narrative analysis is rather loosely formulated, almost intuitive, and uses terms defined by the analyst. Additionally, themes are emergent and are contextually bound (Manning & Cullum-Swan, 1998).

Oral History

Oral history offers the ability to gather first-person accounts of history, from the perspective of the ones who lived it, with the central purpose being historical preservation (Taft, Stolder, Knutson, Tamke, Platt, & Bowlds, 2004). Defined as the "collection and recording of personal memoirs as historical documentation," (Texas Historical Commission, 2004, p. 2) oral history can also serve as a means of advocacy for populations served by nurses. For example, through documentation and dissemination of a story, a nurse could propose a change in healthcare delivery to a vulnerable population in need.

Narrative in an oral history does not suggest a clearly articulated story that runs in precise chronological pattern. Rather, the researcher follows the pattern set by the interviewee, resulting in the narrative being constructed by noting the relationship between units sequentially (Grele, 2006). An interview guide containing topics of interest assists during the interview, without limiting the discussion to subject areas. When interviewing, only one question is asked at a time, open-ended questions are provided, and the researcher speaks in lay language (Morrissey, 2006). An example of the interview guide is available in Appendix E.

Ethnography

Ethnography provides a mechanism for learning about people by learning from them within their own cultural context, and involves the methods of participant observation, interview, and examination of available documents. This method allows the researcher to discover both the emic (the insider's view of the world) and the etic (the outsider's framework) perspectives on a particular topic of interest. Dimensions of participant observation include the elements of time, place, social circumstances, language, intimacy, consensus/validation, and bias (Roper & Shapira, 2000). In this study, data from observations, narrative analysis of interviews, and examination of artifacts were triangulated in order to provide a total picture of the atomic bomb survivors' experience.

Building on Lifton (1967) and Hersey's (1985) works, some authors have provided isolated or limited stories of the experience from the survivors. Yet, information and analysis focused on the survivors' holistic health (including psychosocial needs), and care needs beyond a medical model, are limited. Two excellent methods to expand knowledge or include more holistic understanding of a phenomenon are narrative analysis and oral history. According to Riessman, narratives are strategic, functional, and purposeful. Additionally, remembering the past is one of the most familiar uses of narrative form (Riessman, 2008). The aim of interviewing is the accumulation of detailed accounts, with the narrative shifting to details; for example, what a narrator accomplishes by developing the story a particular way. By hearing stories of the atomic bomb survivors, and by focusing on themes associated with health, additional

knowledge is gained to assist in disaster preparedness and response efforts. Having the opportunity to examine sequence and contexts within the atomic bomb survivor's narratives contributes to the existing knowledge base of the bombing event. Due to the historical significance of the event, it is imperative that we collect the oral history in order to document their experience and nursing aspects while we have the opportunity.

Based on the desire to ascertain the survivor's stories, a qualitative approach is most appropriate for this study. Qualitative studies allow a researcher to gather data on the meaning of an event from an individual who experienced it. Hearing survivors' stories and accounts firsthand, while they are still living and able to provide rich details of their experience is invaluable. With the atomic bomb event occurring 63 years ago, only a small window of opportunity exists to get information about their experience and communication. Once the *hibakusha* are gone, only their stories remain. Due to the typical constraints of dissertation research, a small sample of survivors who are active participants in the Friends of *Hibakusha* (FOH) were targeted for the study. Specifically, many Japanese atomic bomb survivors have resided in the United States for many years and are fluent in written and spoken English. Although the findings from this research cannot be applied to all atomic bomb survivors, they provide a snapshot of what the survivors as a whole experienced as well as a representation of their healthcare needs.

Research Questions

Three research questions guided this study. First, what was the experience of surviving an atomic bomb release? Second, for participants who were *in utero* at the

time of bombing, what were the stories they have been told about the event? Third, what impact did the atomic bombing and/or stories heard have on their lives?

Networking Process

Gaining access to the sample was an arduous endeavor. In the spring of 2008, connections were established with RERF and I applied for the training scholarship. In August of 2008, I met with Dr. George Kerr, a local nuclear physicist who has worked with RERF and the Department of Energy for over 30 years. He spent several years living in Hiroshima, working at RERF and was acclimated to Japanese culture and had numerous connections within the community of scientists (in Japan and the United States) who had worked to determine precise levels of radiation exposure among survivors. During the August meeting, and in several e-mails and discussions that followed, he and I spoke of his research, pertinent literature to review, and potential contacts throughout the United States who might suggest liaisons willing to facilitate my access to survivors. It was following those early contacts with Dr. Kerr that I received scholarship funding and traveled to Hiroshima in September 2008 to complete my intensive two week stay at RERF, studying with scientists there, including Dr. Kazuo Neriishi, Associate Director of Clinical Studies. My time with Dr. Neriishi would prove invaluable to moving this research ahead.

In late fall and early winter 2008, I began reaching out to potential liaisons to determine their willingness to work with me on the project. I also emailed Dr Neriishi at RERF in Hiroshima to inquire about any US connections he might have who would be

willing to assist me. It was his suggestion of Ms. Geri Handa with the Friends of *Hibakusha* in San Francisco that would ultimately prove to be most helpful.

Numerous emails and phone calls were made by my mentor, Dr. Susan Speraw, and myself: to connections with the United States (US) Department of Energy, a retired physician who worked with the *hibakusha* in the US, and a San Francisco newspaper reporter who frequently wrote stories about the survivors. With each conversation came the opportunity to speak of my research interest, the time factor and urgency of speaking to the survivors, and potential access to a sample population. By late December 2008, I had negotiated the relationship with Ms. Handa, discussed research aims, gained IRB approval, and scheduled data collection time in San Francisco. Actual interviews in San Francisco were conducted in January 2009.

Sample

Sample and recruitment criteria for participation include the following: (1) born prior to April 1946 (to include those *in utero* at time of bombing in August 1945); (2) fit into one of the four categories of "survivor" as defined above; and (3) be able and willing to recall and discuss their experience or stories told to them by family members/ others who passed information along to them. Potential participants were excluded from the research if they had acute medical/psychological illness.

In qualitative research, there is no set number of participants that can be predetermined. Data collection continues until ongoing analysis reveals no new themes that add to the description. When this level of data saturation is reached, data collection will cease. For this study, saturation was met after interviewing eight participants.

Recruitment was facilitated through contacts and liaisons resulting from a partnership and training experience with Radiation Effects Research Foundation (RERF). RERF is a bi-national Japan-United States scientific organization dedicated to studying health effects of atomic bomb radiation for peaceful purposes. The organization was established on April 1, 1975 as a nonprofit foundation under Japanese civil law, within the jurisdiction of the Japanese Ministries of Foreign Affairs and Health and Welfare, and in accordance with an agreement between the governments of Japan and the United States. RERF was preceded by the Atomic Bomb Casualty Commission (ABCC), which was established in 1947 by the US National Academy of Sciences (NAS) with funding from the US Atomic Energy Commission. ABCC initiated extensive health studies, primarily focused on physical health, on A-bomb survivors in cooperation with the Japanese National Institute of Health of the Ministry of Health and Welfare, which joined the research program in 1948 (RERF, 2008).

Through a partnership with RERF, a relationship with Ms. Geri Handa was established. Ms. Handa is Chair of the Medical Committee of the Friends of *Hibakusha*, a non-profit volunteer organization based in San Francisco, CA, providing support for Japanese and Korean American Hiroshima and Nagasaki atomic bomb survivors residing in the United States. Founded in 1981, the Friends of *Hibakusha* has access to and credibility among survivors; they have assisted others in obtaining connections with the population. Ms. Handa served as a local contact person and distributed the information sheet about the study.

Instruments

Instruments included: 1) digital voice recorder. The equipment was placed on a level surface in the middle of the room, close to the participant and researcher. The interviews were held in one of two locations: in a quiet room at the National Japanese American Citizen's League Headquarters, or in a participant's home. 2) One face-to-face, semi-structured interview was held with each participant. Each interview ceased when the participant had no additional information to add and had disclosed as much information as they wished to share. 3) Principal Investigator (PI) field notes. I took extensive field notes after each interview. Notes were used only as an additional means of exploring the survivor's stories and documenting my immediate impressions. 4) Artifacts. If participants wanted to provide photographs, written narratives, a diary, or other artifacts, I accepted the material they provided; a detailed list of artifacts is included in Chapter Four.

All potential participants were contacted by Ms. Handa from the Friends of *Hibakusha* organization and indicated interest in the work. As PI, I sent an information sheet (Appendix A) describing the study to Ms. Handa, who distributed it to potential participants. Individuals interested in the study contacted Ms. Handa to schedule the interview. At the time of the interview, I provided additional information, answered any questions the participant had about the research, reviewed eligibility criteria, and obtained informed consent to participate in the research.

A contingent of Japanese atomic bomb survivors now resides in the United States. For this research effort, survivors residing in the United States were the target

participants, as these survivors are generally fluent in English. Further work may include translation/interpretation for Japanese speaking survivors.

Generally, the interviews were private, including only the participant and myself. However, when invited to the participant's home, Ms. Handa accompanied me to introduce me to the participants. For some of the interviews, Ms. Handa was present, but only upon request of the participant.

I was sensitive to the participant and observed for cues to stop the interview. With 12 years of nursing experience, I have been trained and am experienced in observing patients for non-verbal cues. At times during our conversations, the participants got upset at recalling their experiences; some had long pauses in their conversations, others cried. When the participant displayed distress, I asked each participant if they would like to take a break. All participants continued to tell their story. Occasionally, the conversation was moved to a topic less stressful, allowing the participant to recover from their emotional upset. At no time during any of the interviews was additional support needed.

With the atomic bomb event occurring over 63 years ago, the majority of the participants were elderly, ranging from 62 to 78 years of age. Because the participants represent the geriatric population, I observed for signs of cognitive impairment or memory issues, such as an inability to follow the conversation or difficulty in remembering the story they were sharing. Measures were incorporated to ensure participant protection, and included a right to stop at any time, the opportunity to take a break and rest periodically if needed, confidentiality, and supportive care if they became

upset or had difficulty when telling their story. According to geriatric researcher Dr Barbara Resnick, “respect for persons” (Resnick, 2007, p. 272) requires special consideration for the elderly. At the time of our meeting, I performed a mental/physical screening prior to the interview to assess mental status, alertness, and energy level by competing some general questions from the demographic form (Appendix F). No participant displayed signs of cognitive impairment or memory loss; contrary to memory loss, each one vividly recollected their story as if it had happened yesterday.

As part of the pre-screening, participants were informed about the study in general, the background of the researcher, and the approach to the interview was clarified. Additionally, potential risks and benefits were discussed and issues of consent were explained.

Human Subject Protection

In accordance with the University of Tennessee’s guidelines for the research involving human subjects, a completed Form B was provided to the institutional review board (IRB). Recruitment efforts were made after approval was granted from the IRB. The informed consent process was explained to participants, as well as benefits and risks associated with the study. Individuals were assured that participation was voluntary and that they may refuse to answer questions, stop the interview at any time, or withdraw from the study.

Risks to the participants were primarily emotional distress, and included the possibility of the participant getting upset when telling their story. They engaged in talking, which is a familiar part of everyday life. Emotional distress could result from

talking about their experience. Providing time for rapport building helped to diminish anxiety.

Potential benefits for participants were many. Knowing that their story and experience was valued could be reassuring and affirming. Many survivors placed an emphasis on promoting peace, and sharing their stories could work towards expanding the peaceful protest of nuclear warfare. The experience of the atomic bomb is like no other in history. To share a personal account of this event provides a documentary of this historical incident. Each participant spoke passionately about the desire to share his or her story in effort to promote peace. They wanted their experience with the atomic bomb to be the only one ever witnessed by humans. The opportunity to tell their story could have been cathartic to some of the individuals.

Additionally, information gained from this experience could provide a clearer understanding of healthcare needs during disaster events, offering improvements in disaster planning and response strategies. Ultimately, the invaluable knowledge gained from this experience could potentially save the lives of many others by advancing the practice of providing emergency care during a disaster.

Procedure

Bracketing

Prior to qualitative research, it is imperative that the researcher identifies preconceived notions of the phenomenon of interest prior to performing the interviews. The bracketing process allowed me to identify and reflect on my own experiences and interests in the research endeavor. According to phenomenologists Thomas and Pollio

(2002), bracketing is a method to place existing theories, knowledge and assumptions about a topic area aside. This process assists the researcher to maintain an open and nonjudgmental attitude while interviewing participants. All previous literature explored and discussed, including medical effects of the bombings, survivorship, and resilience was tabled during the interview and did not influence the interview process. Bracketed material is temporarily suspended during the interview phase and reemerges throughout the study. Prior to my interviews, my bracketing identified several experiences and preconceived notions: I am a very visual person, who frequently focuses on what can be seen or experienced first-hand. Additionally, I expressed concern over my hometown affiliation with Oak Ridge, Tennessee, one of the locations in the United States where the atomic bomb was manufactured. I anticipated that my nationality as being an American citizen might promote bitterness or anger.

Data Collection Interviews

On the day of each interview, I was introduced to the participants by Ms. Handa. After formal introductions and general conversation to build rapport, the participant was presented with a consent form (Appendix B) and the specifics of the research were once again reviewed. A copy of the consent form, including the phone number and email address of the researcher, was provided to participants for their records. Each participant was told they could contact me at any time in the future if he or she had additional questions or if issues arose. After the participant had finished telling his/her story, the demographic form (Appendix E) was completed. Items related to medical history were included for several reasons: items were areas of interest from previous

RERF studies, potential health effects of radiation exposure, or provide a snapshot of an individual's overall health status. At the end of each interview, time for debriefing and closure was provided.

Based on the historical significance of the atomic bombings, it was anticipated that participants might desire to have their name associated with their story. To ensure confidentiality, participants were given the opportunity to use their real name or a pseudonym. Of the eight participants, six desired their identity to be known, two elected to remain confidential and a pseudonym was given to their story. All audiotapes and transcripts have been maintained under lock and key. Due to the historical nature of the artifacts collected, the information will be kept indefinitely.

The interview was initiated with a broad introductory statement, "There are some things I would like to talk about with you for a while. The main thing I want to know is about your experience with the atomic bomb". For those individuals who were *in utero* at the time of the bombing, the statement was, "There are some things I would like to talk about with you for a while. The main thing I want to know is about what you were told by family members or friends about the atomic bomb". The semi-structured interview format (Appendix D) was flexible and intended as a guide. Probes in the form of questions were used only as necessary to ascertain additional information.

All interviews were audio-taped and transcribed by me so that I could be fully engaged and saturated in their story. Taping and transcription were necessary for several reasons: so I could give my full attention to the participant, for accuracy and precision of data collection, and so all participant responses could be collected in full.

This process assisted in the data analysis phase. Additionally, after leaving the interview setting, I made extensive notes about the interview process, the setting, participant's mood or reactions, and any other relevant details that would assist in data analysis.

The digital recording of the interview was downloaded to my personal computer, which is password protected and not shared by other individuals. During the process of transcription, I eliminated all identifying details and inserted pseudonyms for those who wished to keep their identity confidential. Therefore, for those participants wishing to remain anonymous, the final transcript did not contain any identifiers that could be traced back to the research participant. As previously discussed, participants that wished to have their name associated with their narrative included identifying information about themselves; the names of other individuals in their stories were changed to maintain confidentiality. Additionally, confidentiality agreements were signed by members of the qualitative research group (Appendix C) who reviewed the transcripts.

Oral historian Charles Morrissey (2006) offered the following interviewing strategies: (1) ask one question at a time; (2) use open ended questions, inviting the participant to speak their story in self-chosen words; (3) express questions in lay language; (4) speak up and speak slowly when working with the elderly; (5) listen carefully to what you hear; and (6) go with the flow-follow the course set before you. Additionally, working to build rapport is essential for every interview. These strategies

were coupled with my nursing experience to ensure the best data collection when interviewing for this research endeavor.

Analyzing the Data

Based on the methodologies of oral histories, narrative analysis and ethnography, several methods of analysis were possible. A combination of strategies was utilized to analyze the data from this research, allowing for flexibility as the process evolved. As highlighted by Hall, “data analysis is always a process, not a preconceived plan that can simply be scripted, providing predictable products” (Hall, 2003, p. 494). It is important to note that aspects of cultural studies emerged from the data. As I reviewed the data, I considered characteristics of cultural studies, such as representation and power. From the stories garnered within this research effort, I employed several steps to complete the thematic content analysis from the data.

Initially, I connected with each participant’s story, listening to the interview recording several times while transcribing the conversation. Next, a chronological ordering of events and experiences from each case was developed followed by a detailed case report for each participant. A thorough re-read of the transcripts to identify codes and categories followed. This process included breaking down text into small units and organizing them according to category, as described by Simons and colleagues (Simons, Lathlean, & Squire, 2008). Then, categories were refined to bring out broader themes. Throughout the process, every effort was made to keep words and phrases as close as possible to the participant’s actual words, including quotations when able.

During the data analysis, various sources of data were available: written documents, field notes, and transcripts from interviews. Field notes are an invaluable contribution to qualitative research, allowing the researcher to make comments immediately following an interview. Comments included ranged from the setting, non-verbal communication, cues, disruptions, or events that occurred throughout the interview.

Additionally, according to Riessman, narrative analysis incorporating thematic analysis is appropriate for historical documentation, and also when there is a minimal focus on how a narrative is spoken (2008). Using a method highlighted by Riessman, the following process was followed: (1) analyze text noting main points; (2) identify propositions and common patterns/sequences; (3) examine field notes; and (4) develop thematic categories from interviews (Riessman, 2008). Based on this methodology, a thorough evaluation of various types of data can yield a strong analysis of the experience of the bombing and health aspects from the survivors.

From an oral history lens, the story is used to document context within the survivor's perspective. When analyzing the stories, I looked for items that related to disaster response and other universal themes. For example, aspects of communication, a triage system for mass casualties, and procurement of supplies and personnel could be central issues related to any disaster event. Additionally, I looked for patterns that emerged regarding the story of participant's recovery and survival. It is from these lessons learned that we can influence nursing practice for the future.

Generalization and Quality Control

After the completion of the initial analysis, the findings were evaluated based on two methods. Narrative researcher Riessman stresses two levels of validity within a work: the story told by a participant and the validity of the analysis illustrated by the story told by the researcher. Coherence on a global, local, and thematic level strengthens the interpretation of the narrative (Riessman, 2008). Additionally, DePoy and Gitlin address triangulation, saturation, member checking, peer debriefing, and maintaining an audit trail as methods to evaluate analysis (2005). Nursing historian Lusk suggests additional guidelines to ensure validity. Searching for corroborating evidence and seeking multiple sources to view a target event can assist with validation. Furthermore, enlisting the collaboration of experts in a variety of disciplines can provide benefit when examining contexts (Lusk, 1997). Periodic spot checking of the transcripts was performed to confirm the accuracy of the transcription. Transcripts were analyzed by an interdepartmental qualitative research group. These strategies were incorporated to improve validity of the findings.

Summary

In closing, this chapter described the methodology used to conduct a qualitative descriptive study via narrative analysis and oral history to gather stories of surviving an atomic bomb and subsequent health care needs. The procedure for the study and methods for analysis of the data were discussed. The following chapter will describe the research findings.

CHAPTER 4

RESEARCH FINDINGS AND DATA ANALYSIS

In the following chapter, a description of the sample, and findings and analysis of the research will be presented. First, a description of the participants will be given. A discussion of the type and composition of ethnographic and narrative data collected will follow. Analysis of the data will be organized according to its thematic structure, presented in an illustrative model that depicts the inner-relationships that exist between initial destruction caused by the bombing that resulted in the desecration of the cities and persons, including the physical health, psychosocial health, and response effort. In this diagram, the overarching portrait of destruction is embedded within a cultural context that influenced how participants told their story. Themes of thriving and surviving along a spectrum of resilience are also presented in the thematic structure diagram, with a thorough description of each theme and concept to conclude the chapter.

A Note about Confidentiality

Although safeguards against accidental disclosure of the identities of participants are central to all research methodologies, in this research issues of confidentiality took on special significance and presented unique challenges. This is because the men and women who shared their stories about their experience of the atomic bombing were not only providing an extraordinary view to history, but in a very real sense, they are the living embodiment of history. Each person, in his or her own way, is a monument to events of the past. For example, one participant declared, “I am

a living history." Therefore, this study differed from most other published research in key ways: most important among them being the desire of most of this study's participants to have their identities known and publicly disclosed. As was discussed in Chapter Three, the protection of confidentiality was explained to each participant as part of the consenting process. In this research, however, most participants declined to have their identities protected and signed waivers specifically asking that their names be revealed.

Therefore, in this dissertation the wish of some individuals to have their name associated with their story is granted. Full names provided in Table 2 are the true given names of participants who chose to have their identities revealed, and details of their stories associated specifically with them.

Out of the total pool of participants, only two wished to mask their identities. A pseudonym has been assigned to them as a substitute for their actual names as a means of ensuring their privacy; these are indicated with an asterisk (*) in Table 2. Participants who wanted their identities protected cited various reasons for maintaining privacy, including concern for losing health insurance if identified as a survivor, or wishes to keep their stories confidential based on familial preferences. Therefore, while very few ultimately chose to use a pseudonym, all could understand why a person might do so.

Additionally, some participants brought photographs, pictures, and various documents or reports to the interview, and many presented copies of these items to me. A separate signature line for releasing use of these items in this dissertation was included in the informed consent. Signed permission was received from participants to

publish reproductions of artwork; or personal likenesses, such as photographs, which might serve to identify participants.

Sample

The sample consisted of eight participants and was limited to adults who met the following criteria: (1) born prior to April 1946; (2) fit into one of the four categories of "survivor" as previously described on page one; (3) able to read, understand, and fluently speak English; and (4) able and willing to recall and discuss their experiences of the atomic bombings. Prior to each interview, I reviewed the informed consent form, offered to answer any questions, and obtained signed consent. Table 2 below provides brief demographics of each participant, with further information to follow. With time being a central context among their stories, most participants discussed their age at the time of the bombing (ATB), which is included in the table.

Table 2. Description of Participants

Interview #	**Name/Pseudonym**	**Gender**	**Age**	**Age ATB***	**Location ATB**
1	Ms. Seiko Fujimoto	F	67	3 yrs	Hiroshima
2	Mr. Yonokura*	M	64	8 months	Nagasaki
3	Ms. Eda*	F	62	*In utero*	Hiroshima
4	Mr. Takeshi Thomas Tanemori	M	71	7 yrs	Hiroshima
5	Mr. Grant Fujita	M	68	5 yrs	Hiroshima
6	Mr. Jack Dairiki	M	78	14 yrs	Hiroshima
7	Ms. Sonoko Brown	F	71	7 yrs	Hiroshima
8	Mr. Makoto Ota	M	78	14 yrs	Hiroshima

*ATB=at time of bombing

Participant Vignettes

Ms. Seiko Fujimoto

Ms. Fujimoto was a 67 year-old female who was 3 years old at the time of the bombing. Her family moved to Hiroshima on August 3, three days prior to *Little Boy's* assault on the city. I interviewed Ms. Fujimoto at the National Japanese American Citizen's League (JACL) Headquarters in San Francisco, and our conversation lasted 34 minutes. When I met with her, she spoke of persistent extreme cautiousness, concern and anxiety about her children. Ms. Fujimoto feels that education of the general public on radiation exposure is important and also stresses the need for medical professionals to share knowledge of radiation exposure with the survivors. Ms. Fujimoto's son resembles her brother, who died at the age of five as a result of the bombing. This similarity between her son and brother often reminds Ms. Fujimoto of the losses in her family, and she vowed to keep her son alive and healthy for the sake of her brother.

From a physical health perspective, Ms. Fujimoto reported history of bone cancer, ovarian cancer, lymphoma, extreme dizziness and fatigue. She noted having fearfulness and anxiety at the time of the bombing, and still has episodes of anxiety.

*Mr. Yonokura**

He was a 64 year-old male that I interviewed at the National Japanese American Citizen's League Headquarters, with our dialogue spanning 51 minutes. Being only eight months old at the time of the bombing, Mr. Yonokura has no recollection of the bombing event itself, but he has many memories of the way in which it impacted his life.

He spoke of the tragedy of losing his mother and sister when he was six and seven years old. The only memory he has of his mother was her being ill and constantly in bed. Mr. Yonokura noted that the bombing was “hush-hush” in his family, with his surviving siblings and father never discussing it. As an adult, Mr. Yonokura became a minister, now retired, but he discussed drawing on his experience of loss when counseling parishioners and others during times of need. As with other participants, he spoke of the difficulty of living with survivor’s guilt. Additionally, he struggled with the fear of dying.

From a physical health perspective, Mr. Yonokura reported having some respiratory problems, high blood pressure, diabetes, vision impairment, and decreased hearing with age. He stated that within the past 30 years, he experienced three separate periods of depression, which were treated with counseling alone. He noted that his tendency to keep things inside was a factor in his depression, and that talking about his experience was beneficial.

*Ms. Eda**

I traveled approximately one hour to meet Ms. Eda in her California home. This participant was *in utero* at the time of the bombing, being born in April 1946. She was concerned about her identity being known due to fears about losing access to health insurance if her past history of radiation exposure was known. Throughout our 43 minute conversation, Ms. Eda discussed the concerns her mother shared with her: be aware of any skin rashes, avoid getting rained on, and do not have children. She wondered if there was information that her mother never told her about her radiation

exposure. Ms. Eda participated in the 2nd generation studies of ABCC from the time she was seven years old until age 21. She focused on the unknown and uncertainty.

As far as her physical health was concerned, Ms. Eda reported having allergies, dermatitis, and vision problems. She also noted a recurrent low white blood cell count, frequent bruising, thyroid problems and benign lumps in her breast.

Mr. Takashi Thomas Tanemori

The interview with Mr. Tanemori was conducted in his home, approximately one hour from the San Francisco area and lasted for 101 minutes. Mr. Tanemori is a 71 year-old male, with limited vision, who has a service dog named Yuko. At the time of the bombing, he was within 1 km of epicenter at Hiroshima, with 98% of the people within that range dying upon impact. He was quick to report that he was one of only 2% who survived. Mr. Tanemori was a gracious host, preparing a spot for the interview in his home, picking a flower for me, folding cranes for me, and inviting me for lunch following our interview. Immediately following the bombing, Mr. Tanemori lost six members of his family and broke down crying several times throughout the interview, especially when discussing his family. He mentioned words of wisdom from his father frequently. He was very creative in his storytelling, telling specific points he wanted to make, sharing his book writings with me, and talking of his artwork, and the Silkworm Peace Institute. A sense of pride in his family name and his ability to survive was evident. Themes of living for the benefit of others and forgiveness were strongly woven throughout his conversation.

Figure 9.*Takashi Thomas Tanemori.* 2009, photograph by Amy Knowles.

From the physical health perspective, Mr. Tanemori reported two previous heart attacks, stomach problems, dermatitis, and a history of recovery from stomach cancer. He has vision problems, particularly with his retina, and over the years has had two service animals to guide and assist him.

Mr. Grant Fujita

I drove one hour to meet with Mr. Fujita in his home, where his interview took place. We spoke for approximately 80 minutes. Mr. Fujita appeared to be a fairly independent thinker, occasionally voicing an opinion on world affairs and policies on survivor support that differed significantly from other survivors and/or *hibakusha* groups. In self-describing his independence, Mr. Fujita related himself to “a nail that sometimes sticks up, and a hammer has to come along and punch back down.” When speaking of his atomic bomb experience, Mr. Fujita stated he was in close proximity to the epicenter

(within 1 km), where 98% died immediately. His mother, grandfather, and younger brother all died within one week of the bomb. He appeared proud to be a survivor and did not focus on health issues. Mr. Fujita tended to focus on the positive, including statements like “Bombing was in the past. Move on and be positive”.

In regards to his physical health, Mr. Fujita stated that he had high blood pressure, high cholesterol, allergies, kidney disease, hearing impairment, and glaucoma. He reports no other medical conditions and does not frequently participate in the biennial medical examinations provided by RERF.

Mr. Jack Dairiki

When interviewing 78 year-old Mr. Dairiki at the JACL Headquarters, I immediately noticed the numerous items he brought to show me; including a portrait he painted (entitled “30 seconds after atomic bomb dropped”), various papers, and pictures from his past. During our 90-minute interview, he spoke in precise detail about his life prior to the bombing, giving very specific components and measurements, which may be reflective of his career as an architect. Mr. Dairiki spoke of societal obligation within the Japanese culture, and the duties of being a first-born son. As he was 14 years of age ATB, he gave descriptive elements of the bomb shelters, air raids, process of traveling to school and riding on trains.

Regarding his physical health, Mr. Dairiki reports previous prostate cancer, hearing impairment, elevated liver enzymes, thyroid problems, and Bell’s palsy. He brought his previous biennial medical examination report to illustrate the type of reporting RERF provides and documentation of his lab findings.

Figure 10. *Mr. Jack Dairiki.* 2009, photograph by Amy Knowles.

Ms. Sonoko Brown

Ms. Brown, a pleasant 71 year-old female was recovering from a respiratory illness and unable to keep her interview appointment; however she agreed to do a phone interview later in the week. She was seven years old ATB and playing on the school ground in Hiroshima. She suffered extreme burns, was unconscious for a period of time, and was ill in bed for months. Ms. Brown described in detail how her family cared for her injuries and the afflictions she experienced, often getting emotional when speaking of her mother. She spoke of her parent's support and encouragement for Ms. Sonoko to get an education (even put above her brothers) so that she could get a good job and support herself, because of concerns about her ability to marry on account of the extreme scarring and keloids she had resulting from the bomb. Ms. Brown placed a heavy emphasis on education, good hard work, and felt that in spite of her injury, she

was “pretty lucky”. Now, she gives of her time, energy, effort and money to help save abused and abandoned animals, as “they don’t have a voice”.

As far as her physical health is concerned, Ms. Brown reported having high blood pressure, borderline diabetes, uterine cancer, elevated liver enzymes, and vision problems. She was recently recovering from a respiratory illness. Although she discussed having emotional problems during her early teens and twenty’s, she reported overcoming those once she came to the United States, got a good job, and did not worry about those things that were “not important” to her once she got older.

Mr. Makoto Ota

Mr. Ota was a 78 year-old male who I interviewed at the JACL Headquarters. Being 15 years of age ATB, he spoke of working as a student doing fieldwork for the war effort. He received significant burns to arms and neck, and spoke of his mother’s use of home remedies to care for wounds. Our interview lasted 25 minutes, with Mr. Ota giving concise recollections and answers. He recalled the familiarity of planes flying overhead, the journey home after the bomb dropped, and discussed his role serving in the United States military following the war.

According to Mr. Ota, his physical health issues were limited to cataracts, hearing impairment due to increased age, and keloids resulting from his significant burns.

Participants’ Reactions to Nurses Studying the Bombing

During the course of planning for this study, sometimes questions were raised, both from within the discipline of nursing and outside of nursing, about the legitimacy or value of a nursing exploration of the experiences of atomic bomb survivors. Other

questions were also raised about whether survivors would feel comfortable talking with a young American. As this research progressed, participants themselves answered those questions with their unsolicited comments and behaviors.

> Wish we [*hibakusha*] could have more like you [Amy Knowles] here. (Ms. Fujimoto)
>
> What you are doing [studying the *hibakusha* experience] is very important. (Mr. Yonokura)

The way in which the participants shared their time and how they spoke demonstrated their support of the research. Participants appeared to have no reservations in what they shared with me, often revealing and reliving painful and difficult recollections. They invited me into their homes, volunteered to share their private medical records, sometimes presented me with copies to keep, gave me a view into their personal lives beyond just the story of the bombing, and even invited me to stay in their homes as a houseguest upon my return. I felt honored to be in the presence of the survivors and afforded the opportunity to hear their narratives.

Data Gathered

During my time in Hiroshima and San Francisco, several sources of data were accumulated. These fell into two broad categories, ethnographic data and interviews. Field experiences from Hiroshima, Japan and San Francisco, California, as well as various artifacts collected comprised the ethnographic portion. The interviews, ranging in length from 25 minutes to one hour and 20 minutes, had elements of oral histories and survivor narratives. A discussion of the cultural context, type, and analysis of the data follows.

Ethnographic Data

The Road to Hiroshima-63 Years Later, Fall 2008

In the literature review in Chapter Two, a historical perspective of Hiroshima was presented. In “real time”, however, I had the opportunity to immerse myself in the cultural context of the Hiroshima of today when I spent two weeks studying at the Radiation Effects Research Foundation (RERF) in Hiroshima in the fall of 2008. Through a partnership that the University of Tennessee College of Nursing Homeland Security Program had with RERF, I became aware of a scholarship opportunity to study in Hiroshima. I applied and received funding to attend the training. RERF, sitting atop Hiyijama Hill, has an impressive view of the city of Hiroshima. My lodging was a dormitory style apartment provided by RERF, overlooking the campus. As previously mentioned, RERF is a joint Japanese and United States of America collaboration that studies the effects of radiation exposure. Experts in radiation, including physicians, nurses, epidemiologists, statisticians, geneticists, and biochemists work at RERF to increase the knowledge base in radiation science.

During the day, I received lectures from world-renowned experts in radiation, on topics including acute and long-term radiation effects; previous research findings and current research efforts; and plans for future scientific endeavors in radiation science. Specialists in medicine, genetics, statistics, epidemiology, and physics allowed time to answer my specific questions regarding the topic at hand.

Figure 11. *Radiation Effects Research Foundation, Hiroshima.* 2008, photograph by Amy Knowles.

At RERF, I was surrounded by friendly, helpful staff who were willing to answer any questions and provide me with an extremely thorough understanding of radiation exposure and management.

During the evenings and weekends, I enjoyed free time to wander about the city and soak in the cultural aspects of my surroundings. I meandered along Peace Boulevard as it crept throughout the city taking me to various spots. I spent a great deal of time at Peace Park and the Peace Museum, paying particular attention to the various statues and monuments. The Museum included a collection of written, audio, and video materials depicting the history of the bombing. Displays of artifacts were presented, including a tricycle mangled from the heat, various melted household items, and pictures of desiccated victims walking among smoking ruins of the city streets. Various monuments across the park gave homage to victims groups. For example, the statue in Figure 12 depicts a mother holding her infant and child, trying to protect them from the destruction, while thousands of cranes have been placed around the monument. In

Japanese culture, cranes represent peace and eternal life (T. Sato, personal communication, February 24, 2009).

As I walked along the bridges and waterways, I reflected on the stories I had read about people running into the water searching for relief after the bomb, many only to drown, sinking into their watery tombs. I saw gardens, shrines, parks, the Hiroshima castle, local hangouts for the young Japanese, fans arriving for a baseball game, and neighborhood eateries.

The impressions that I had from my experience in Hiroshima were many: including tranquility, beauty, and the capacity to rebound and rebuild. The cleanliness of the city was remarkable, as I never once saw a piece of trash. It was amazing to stand near the epicenter of where the bomb was dropped and only see one reminder of the tragic event, the A-bomb dome (Figure 13).

Figure 12. *Mother and child, Peace Park, Hiroshima, Japan.* 2008, photograph by Amy Knowles.

Figure 13. *A-bomb dome, Peace Park, Hiroshima, Japan.* 2008, photograph by Amy Knowles.

The rest of the city was completely rebuilt; symbolizing rebirth, growth, and resilience. As I walked through the city, I tried to place the photos and stories I had researched into the context of where I was. For example, as I was standing on the lookout of the Hiroshima castle, I recalled a story of people fleeing to that area of the city to escape the inferno, and I imagined the scene. As I strolled through the gardens (Figure 14), I recollected the tale of people going to the garden to seek refuge and attempt to find water.

Figure 14.*Shukkeien Garden, Hiroshima, Japan.* 2008, photograph by Amy Knowles.

The images from my RERF studies were strongly embedded into the daily walks I took throughout the city, and assisted me in gaining a greater understanding of the cultural context in which I was exploring.

Dr Kazuo Neriishi: Gatekeeper to RERF and Japanese Hibakusha

In typical Japanese style, all of the personnel at RERF in Hiroshima were amenable to my presence; they strived to be accommodating, informative, and to assist me in my educational endeavors. I was amazed to meet some of the experts whose work and research I had spent so much time reading. Dr Neriishi was a key person responsible for ensuring my trip to Hiroshima and RERF was successful, and his countless hours allowed my experience to be so positive. As a physician who had spent his career at RERF and was a second generation of physicians working at RERF, he was an expert in radiation exposure and keenly aware of issues that survivors experienced. Dr Neriishi was instrumental in allowing me to have access to survivors, both in Japan and in California.

Figure 15. *Dr. Kazuo Neriishi, Hiroshima, Japan.* 2008, photograph by Amy Knowles.

A Japanese Hibakusha Story

During my visit to RERF, I notified my key contact, Dr Kazuo Neriishi, of my desire to speak with survivors. In attempting to accommodate my interest, the contacting division of RERF notified a survivor who had an existing appointment for medical examination later in the week. She agreed to meet with Dr Neriishi and I; two days later, she came to clinic, bringing a nine page handwritten story of her experience. The RERF staff translated the story for me. Similarities existed in her story and the narratives I collected from California, including tales of complete destruction; physical ailments; folk remedies; and psychological sequelae, including a suicide attempt. As with my eight participants from the United States, she was kind, cooperative, and her story was deeply moving.

California, 2009

Although atomic bomb survivors are scattered across the United States, large populations of them reside in four locations: Los Angeles and San Francisco, California; Seattle, Washington; and the state of Hawaii. For my research, interviews were conducted in San Francisco, California, between January 22-31, 2009. During this time, I was completed immersed in Japanese-American culture, with lodging in San Francisco's Japantown, at a local hotel that specialized in Japanese pop culture. For example, the interior wall mural of my hotel room provided a constant reminder of Japanese society (Figure 16). Literally, I was waking up everyday to the Japanese-American pop culture surrounding me.

Figure 16. *Wall facing my bed in the hotel room in Japantown, San Francisco, CA.* 2009, photograph by Amy Knowles.

Looking out my window unto Japantown square, I was able to see various Japanese shops, restaurants, and the square Pagoda (Figure 17). Rarely did I venture outside the Japantown area, and when I did, it was when traveling to a participant's home. When dining on Japanese cuisine, I was reminded of my previous experiences in Hiroshima during the fall of 2008. On several occasions, the local contact person and I accompanied the participant to lunch following the interview.

Figure 17. *Pagoda in Japantown Square, Japantown, San Francisco, CA.* 2009, photograph by Amy Knowles.

In addition to the Japanese-American immersion that San Francisco lodging and food provided, I had the opportunity to participate in unique cultural events throughout the community. During my visit, I went to the local Buddhist temple fundraising dinner with the local contact person and her husband, partaking in an evening of spaghetti, crab, music, bingo, and a raffle. Hundreds of people attended the event, most being Japanese. Additionally, I participated in a *shibori* class, learning the Japanese art of folding, stitching and dying fabric to make beautiful designs. In a group that regularly consisted of five female pupils, three of whom were of Japanese descent, we were lead by an elderly Japanese woman who was given the name “sensei”, meaning teacher. Our sensei had practiced the art of *shibori* for many years. The class was held in the local Japanese community center, which was located right next door to my hotel. It was an interesting experience for me to attend the class and mingle with a small group of people, both of Japanese and American descent. Traditional Japanese customs were evident, including the preparation of tea and serving snacks. Two elderly American women were visiting the class for the second time and stated they enjoyed learning the art of *shibori* as a hobby. Three Japanese participants were committed to learning *shibori* and had ventured into selling some of the crafts they had made.

Beyond these cultural experiences, I had several meetings with some key persons within the Japanese survivor community. Dr Kay Yatabe, a primary care physician, spoke to me about her work in recruiting medical volunteers to participate in the biennial medical examinations for *hibakusha* residing in the San Francisco area. The conversation with Dr Yatabe provided insight into the process for the health

checkups and confirmed some of the chronic health conditions the survivors are facing. I also met with Rosalyn Tonai, the Executive Director of the National Japanese American Historical Society. She provided information about previous exhibits done for anniversaries of the bombings, most notably the 50th and 60th anniversaries in 1995 and 2005, respectively. Ms. Tonai and my discussion confirmed the desire for peace promotion efforts among particular populations, including the survivors.

Geri Handa: Gatekeeper to Japanese American Hibakusha Community

As the medical chair of the Friends of *Hibakusha* (FOH), a support group for survivors, Ms. Handa was instrumental in this project and assisted me in gaining access to the survivor group. Immediately upon my return from Japan in 2008, I began to attempt connection with a group of *hibakusha* residing in the United States. Due to his partnership and work with RERF supported activities, Dr Neriishi was my starting point. After I contacted him, he sent emails introducing my project and interest to two individuals in San Francisco, Dr. Kay Yatabe (discussed in the previous section) and Ms. Geri Handa. By mid-October 2008, I had been in touch with Ms. Handa, who was immediately helpful and willing to work with me. We exchanged email regularly from October to January. Initially, I shared my interest in meeting and speaking with *hibakusha,* and more details about the goal of my project. We discussed specifics of the project, including the number of participants I hoped to recruit and their inclusion criteria. I sent the project information sheet and informed consent forms to her and she distributed the recruitment announcement throughout her network of *hibakusha*, She

also assisted me by suggesting lodging arrangements, and working to establish an interview schedule.

Ms. Handa's devotion for her work with the survivors was apparent and infectious, as was her positive attitude, disposition, and love of life. When asked about her experience in working with the *hibakusha*, Geri spoke of her dedication in volunteering to assist with establishing biennial medical examinations for survivors residing in San Francisco and the Bay Area, saying "It is an honor and a privilege to do this" (personal communication, January 23, 2009). After working with survivors for over 30 years, she had the credibility and rapport to assist me in my research endeavors.

Figure 18. *Ms. Geri Handa and I, San Francisco, CA.* 2009, photograph by Takashi Tanemori.

Artifacts

During my data collection, I was able to collect vast amounts of artifacts to assist in my analysis. Participants shared intimate parts of their story with me including; artwork they had created, medical records from previous exams, photos, books they had written (both in Japanese and English) and various other collectibles. In addition to items received from participants, Ms. Handa provided me with numerous newspaper articles, reports, and websites with information pertaining to the survivors. The Friends of *Hibakusha* had previously participated in an oral history project and Geri provided summaries of those interviews as well. Furthermore, when I visited certain areas in San Francisco, I picked up available materials for review. A thorough catalogue of the materials is presented below in Table 3.

Table 3. Catalogue of Artifacts Received and Reviewed

Item	**Description**
Newspaper Articles	Total of 45 articles, ranging in dates from July 1995 to August 2008. A summary of a few articles follows below. Most articles originated from the San Francisco Gate, an on-line resource for archived San Francisco Chronicle.
RERF Report on Medical Examinations of Survivors Residing in North America	A summary of the most recent published biennial examination from RERF (2006).
National Japanese American Historical Society (NJAHS) Nikkei Heritage Newsletter, *The Legacy of the Atomic Bomb. Vol. VII* (3), Fall 1995.	Newsletter that included the Legacy of the Atomic Bomb: The Nuclear Future, Atomic Legacy, a story of an American Survivor of Hiroshima, a book review (*On the Wings of Peace*), a review of NJAHS programs, and a member's corner that highlights several of the Society's members.
National Japanese American Historical Society Nikkei Heritage Newsletter, *The Decision to Drop the Atomic Bomb. Vol. VII* (2), Spring 1995	Newsletter that discussed Truman's missed opportunities to end the war, two book reviews (*Hiroshima: Why America Dropped the Atomic Bomb* by Ronald Takaki and *Barefoot Gen: A Cartoon Story of Hiroshima* by Keiji Nakazawa) and reviewed NJAHS programs.
The Asian American Experience, Curriculum and Resource Guide, 2006. Published by the JACL	Distributed by the Japanese American Citizen's League, this guide contains a chronology of important events in history that shaped the Asian American experience. A glossary of terms is included. It also profiles prominent Asian Americans, detailing their important contributions to society. A resource guide is also included, as well as lesson plans for teaching cultural diversity in multicultural education.
Summary of Oral History Interviews	A summary of individual interviews with 23 survivors from a previous oral history project. Two of the hibakusha were participants in my study. Content of their stories were similar to the conversation they had with me during their interviews. Themes from the summations discussed the destruction resulting from the bomb, family disruption and the restablishment of famiial connections.

Table 3 cont.

Item	Description
Making Peace: The Legacy of Hiroshima and Nagasaki, A Teachers Guide. July 1995. (Part of the Hiroshima and Nagasaki 50th Anniversary Commemoration Committee)	Produced by the National Japanese American Historical Society, this guide provides reflections of survivors (both of which were participants in my study), a historical background, Japanese Americans in World War II, a discussion of Fifty years following the bomb, and classroom activities for students of all ages (elementary, middle, and high school). Also includes a chronology of the development of the bomb and provides a list of resource materials. Two of my research participants were interviewed and have very brief statements about their experiences in the guide.
Hiroshima: Bridge to Forgiveness, 2008	Book written in English by research participant Mr. Tanemori. This book recounts his life prior to, during, and following the bomb, depicting his life's journey and struggles. It further discussed the ultimate goals of overcoming the trials and dwelling in forgiveness, and living for the benefit of others.
Blue Skies Over Hiroshima	Book written by participant Mr. Fujita. This book, written in Japanese, recounts his life story and includes various pictures.
Various artwork	Several participants shared various types of creative art with me: a painting, artwork from the Silkworm Peace Institute, and folded paper cranes. A more thorough description follows.

Brief Summary of Artifact Content

Newspaper Articles*:*

Subject matter of newspaper articles varied, from interviews with survivors, including some of my study participants, to an article highlighting an interview with Theodore "Dutch" Van Kirk, one of the navigators of the Enola Gay, the plane that dropped the uranium *Little Boy* on Hiroshima. Van Kirk discussed the use of the bomb as a method to stop the war, noting that he regretted the weapon had to be used (Martin, 1995). Additional articles included discussions of the 50th anniversary of the

bombings in 1995, first-hand accounts of survivors who experienced the bombings, and various peace promotion functions for activists.

Another newspaper article I found particularly interesting came from August 6, 2005, on the 60th anniversary of the bombing. When survivor Ogura Keiko was interviewed about her experience, she described the terror she experienced and the long-term consequences of her experience in the following way:

> First came the blinding flash, followed by the terrifying explosion that flattened the city. Then, there was the brutal, devastating thirst, the thirst of thousands of dying burn victims crying out for water…that was like a nightmare; that became my trauma. I felt so guilty for years. (McLaughlin, 2005)

The statements from the survivor in this article mirrored some details my participants spoke of, particularly the emphasis on sensory perceptions, the details of burn victims, the desire for water, and the long-term implications following the bomb. Comparison of findings from my interviews with the artifacts I received was another mechanism to validate my results.

Reports:

Of particular interest was the most recent published RERF report on the results of the Fifteenth Medical Examination of Atomic Bomb Survivors residing in North America. Reports are published every two years after biennial visits are made and examinations are conducted. Participants are mailed their individual results of medical examinations, and then summary findings are published. The 2006 report includes outcomes from the biennial medical examinations done in the United States in 2005. In summary, a total of 435 survivors participated in the examinations, with 68 being

second-generation survivors. The average age of participants was 73.1 years old, and the examination included an interview, clinical and physical examinations, electrocardiography, blood, urine and stool tests. Hypertension was the most frequently cited medical condition, with a prevalence of 51.8% among survivors. Previous history of malignant tumors was observed in 19.6% of survivors, typically in mammary gland, uterus, colon, and prostate (Kambe, Matsumura, Suyama, Nishi,Tujiyama, &Hyoudou, et al., 2006). This report validates the information I had previously received from RERF during my visit to Hiroshima and is also congruent with the medical exam results that were provided to me by one of my research participants (Figure 19).

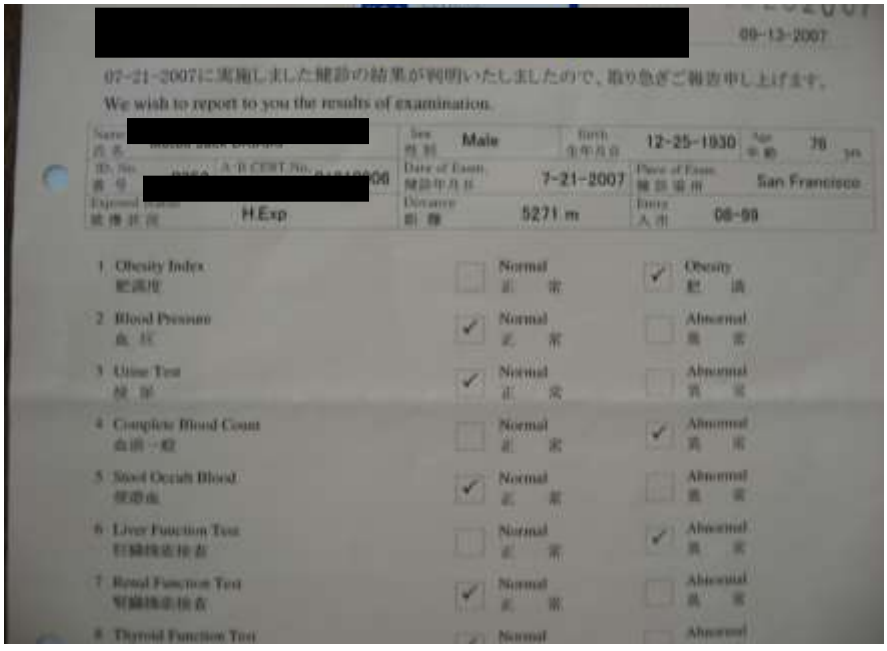


Figure 19. *Example of RERF Biennial Medical Examination Report, San Francisco, CA.* 2009, photograph by Amy Knowles.

National Japanese American Historical Society (NJAHS) Nikkei Heritage Newsletter:

In the Spring1995 newsletter, author Clifford Uyeda wrote an article entitled "Truman's Missed Opportunity." Uyeda reported that President Truman received multiple opinions on war strategy; for example, that the atomic bomb was not necessary to end the war, and that he had a choice regarding whether to use the weapon or not. Truman insisted that the bomb ended the war. He concluded that Americans are entitled to debate why America dropped the bomb.

In the Fall 1995 newsletter, Dr Francis Tomosawa offered his personal account of the atomic bomb experience. As a young boy, his mother moved him and his two brothers to Hiroshima from Hawaii, in order to gain an education in Japan. After describing his experience on August 6, 1945, Tomosawa discussed current issues with survivors in the United States. For the 1000 survivors that reside in North America, government provided medical support is only available from Japan, with no additional federal support from the United States. He expressed concern about the *hibakusha* making their own way to Japan for treatment of radiation related consequences. From interviews with my participants, of those who received medical care from RERF in Hiroshima or Nagasaki, many scheduled the examinations to coincide with times when they were traveling back to Japan to visit relatives and family members.

The Asian American Experience, Curriculum and Resource Guide:

As summarized earlier, this resource guide provides a summary of contributions of Asian Americans and a timeline of important events. Six lesson plans spanning from elementary school to high school are included in the resource. One lesson plan is based

on Gender and Racial Stereotypes and is intended for high school students. The objective is to have students evaluate their attitudes about gender and race. A teacher is to read a list of professions and have students write down whether they see males or females in the roles. For each profession, students are directed to record the results and discuss what words come to mind when they think of women and men. Next, the leader is to initiate conversation about what constitutes a stereotype. Students are then asked to write descriptions of various ethnic groups. Finally, the students have a week-long project, keeping count of gender and race of main characters in television shows, movies, news shows, and magazine covers. Results are tallied after one week and discussion follows. This curriculum is intended to aid in promoting diversity among students while highlighting aspects of Asian American history.

Making Peace: The Legacy of Hiroshima and Nagasaki, A Teacher's Guide:

As mentioned in the table, two of my research participants were interviewed and have brief stories in the guide, which served to confirm their narratives and aided in validating my findings. Although briefly printed in the guide, their stories mirrored the information they had told me during our conversation. Several lesson plans were included for students, ranging from elementary to high school. One lesson plan for younger students is the "Sadako project", referencing a young girl who became ill with leukemia following the bombing. Under the belief that folding paper cranes might help her get well, Sadako folded 644 cranes. After listening to her story, the students then participate in folding paper cranes. Cranes were a recurrent theme during my study:

from the artifacts, the narrative of Mr. Tanemori, to the visual images of cranes draped over the monuments that I observed in Peace Park in Hiroshima.

Summary of Oral History Interviews:

A summary of interviews collected during a previous oral history project was obtained. Twenty-three participant synopses, including two individuals who were a part of my research sample, Mr. Jack Dairiki and Ms. Eda were included. Mr. Dairiki's interview summary, which was completed 20 years ago, recounted similar themes as he did in our conversation; location at the time of the bombing, repercussions his family experienced, and his life following the bomb. In her interview summary from 33 years ago, Ms. Eda discussed her medical complications following her exposure to the radiation *in utero* and mentioned the physiological and psychological effects of living as a *hibakusha*.

Additional interviews from survivors included themes of destruction, loss of family members, injuries sustained and long-term medical complications resulting from the atomic bomb. Conversations of air raids, shelters, large quantities of dead bodies, and life following the disaster were recalled. Many discussed their future education, careers, and family members, and all narratives were broken down into life before and after the bombing event.

Hiroshima: Bridge to Forgiveness:

Written by Mr. Takashi Thomas Tanemori, one of my research participants, this book chronicles his journey from surviving the bombing on August 6, 1945, to becoming

an orphaned “street urchin”, his immigration to America to seek revenge, to his eventual path to forgiveness (Tanemori, 2008, p. v). The lengthy book, 507 pages in total, provides explicit details on facets of his life story, and allows an even closer look at particulars of his experience than our nearly two hour interview contained. Themes and storylines were consistent in both the interview and the book, which offered one means of checking reliability and assisted in lending validity to my findings.

Artwork:

Several participants brought or gave me various types of creative work they had done. One participant brought a portrait he had painted of the immediate aftermath of the bomb (see Figure 10). The picture validates the emphasis on sensory perceptions by displaying the colors of the bomb plume. A camouflage building covers an army barrack, symbolizing the militaristic presence of the war.

Another participant relayed his atomic bomb experiences through artwork from an organization he created, the Silkworm Project. He regularly tours and speaks to various groups. All his pictures portray his message of forgiveness and peace promotion. When meeting him for the interview, he also displayed creativity by folding cranes for me. These small tokens displayed his message of peace and forgiveness along with the symbolism of cranes, eternal life.

How Artifacts Were Used in Data Analysis

I incorporated aspects of the artifacts into data analysis by several mechanisms. First, I utilized additional books or articles from or about my own study participants to 1) add or verify information that they had provided in their interviews to confirm that I had

gathered appropriate meanings and themes and 2) used the information to add to contextual background knowledge as I analyzed their transcripts. For example, Mr. Tanemori's book provided additional detail to his story, further expanding my understanding of his experience. The supplemental data from other *hibakusha*, beyond my study participants, offered a fresh perspective on facets of the bombing. For example, one interview described an encounter with the Japanese military police, telling how four sisters from a convent were taken to a camp in the mountains for preservation of the seed. Although one of my participants mentioned the practice of sisters being taken out of the city limits during the war, no discussion of military police had arisen during the interviews.

Interviews

Data from the interviews consisted of two categorical elements, oral history and survivor narratives. The stories the survivors told about their day-to-day experiences, family life, and perceptions were embedded in their oral histories. Within the sections that follow, both aspects of their narratives, history and specific reflections, will be presented. Additional information on the interview logistics and my personal reactions to the experience will also be discussed.

Interview Logistics

The interviews for this dissertation were completed either at the National Japanese American Citizen's League (JACL) Headquarters in San Francisco, California, or in the participant's homes. The JACL was centrally located in Japantown and within walking distance of the local Japanese restaurants, shops, and my hotel.

Some participants preferred that interviews be done in their homes; in those instances, Ms. Handa drove me to their location, introduced me to the participant, and was present for the interview. When I was invited to their homes, many of the participants displayed typical Japanese customs: taking off shoes prior to entering the room, serving tea and various Japanese snacks, to having paper cranes folded and presented with a flowering bloom. Each participant was extremely kind and welcoming, providing a comfortable and courteous atmosphere. One participant was dressed in the typical Japanese attire of a casual, cotton kimono, called a *yukata*. A number of participants brought items of interest to show me, ranging from books they had written, to their artwork, collectable items, photos, medical reports. All participants spoke English and an interpreter was never used.

Field Notes/Personal Reactions/Transcription of Interviews

During data collection, I made extensive field notes while in Japantown; in addition, notes were made after each interview, noting specifics such as location, duration, setting, themes the participant emphasized, and other details that seemed particularly important. After the interview and field notes were completed, I worked to transcribe each interview, keeping consistency among the transcription and also allowing myself to be completely immersed in the data. I also wrote personal reflections every day. This process was important for my own well-being, since it was difficult to hear the many hours of tragic stories of the participants with their graphic details of burning flesh, agonizing death, and sorrow. I was physically ill after hearing some of the stories. On several occasions I had nightmares and often did not experience restful

sleep. Exercising and listening to music was helpful to me, and I continued to journal about my experiences throughout my stay in California during the data collection phase.

Oral History

During all interviews, several elements were consistently present. One commonality across all narratives was the participant's ability to recall explicit details about their experience. Their recollections clearly supported their capacity to remember the event; no participant appeared forgetful. All survivors presented clear, vivid memories with intricate descriptions. On occasion, participants with a heavy Japanese accent would say a word in Japanese and pause to search for a word in English to accurately describe their thought. However, there was never a time during any of the interviews when the individuals appeared unable to remember the bombings or be able to describe their recollections of the aftermath. One participant was less than a year of age and another was *in utero*; in these instances, they started their narrative with their earliest memories of young childhood.

Another consistency among the narratives was that each person incorporated time into their story, often telling events in chronological order, based on ages and time periods in their lives. When participants were asked about their experience of the bombings, each explained where the bombing fit into their lives. Narratives were broken into divisions: life before the bomb, during the bomb, and after the bomb. August 6 and August 9, 1945 were pivotal time periods in each of their stories. Interestingly, this pattern was evident in all narratives, even those of participants who were too young to

remember or *in utero* at the time of the bombing. For example, one participant who was only 8 months old ATB stated:

> I had personally experienced it, even though I don't remember the day of the bombing and the immediate aftermath, the bombing itself (Mr. Yonokura).

This statement reflects the long-term consequence the event left for those affected, both young and old. Even though Mr. Yonokura does not remember the bombing itself, he vividly recalls the aftermath since the after effects of the bomb impacted his life from his earliest memory. Each history included evidence of cultural influences or meaning; such as family birth order, pride in family name and tradition, marriage rituals, and establishing conformity and harmony as required by social norms. More about the cultural context will be further explained below.

Survivor Narratives in Cultural Context

Elements of culture were central to the *hibakusha's* stories, making Margaret Leininger's culture care theory an appropriate lens through which to review the narratives. According to Leininger (1978), "symbolic forms of nursing care and their referent meanings are closely linked to culture norms and beliefs and need systematic study, as they are important modes for understanding and helping people of a particular culture" (p. 36). In an effort to advance knowledge in transcultural nursing, Leininger offered the Sunrise Enabler to depict the Culture Care Diversity and Universality Theory. Within the framework, culture care worldview encompasses cultural and social structure dimensions that influence nursing care and ultimately health and well-being. Broadly speaking, the concept of social structure is defined by the theorist as:

> the interrelated and interdependent systems of a society which determines how it functions with respect to certain major elements, namely: the political (including legal), economic, social (including kinship), educational, technical, religious and cultural systems. (Leininger, 1978, p. 61).

Discussion of data from the narratives will be presented based on Leininger's framework.

Kinship and Social Factors:

In the Sunrise Enabler, kinship and social factors are facets of the cultural and social structure. These dimensions relate to recognizing relationships by blood, marriage, and other social means, which influence health care. A central component of kinship is the alignment and composition of the family structure. In an exploration of dominant culture care values in the Japanese American culture, Leinginger (1995) noted that duty and obligation to kin was a primary value; patriarchal obligation and respect was another main principle.

Kinship

The way the participants told their narratives wove the bombing into their life stories; they told how the bomb affected their family units and familial histories. This storytelling was told from the context of the family, which reflects the Japanese culture. For example, when Ms. Fujimoto was asked about her experience of the bomb, the family structure was the way in which she immediately framed the story.

> I was only three and my brother was a year and a half…so they [grandparents] thought we were safe, so we go to uncle's house. (Ms. Fujimoto describing move to Hiroshima on August 3, 1945)

The cultural significance and responsibility of birth order was also frequently identified, with the first-born son being designated as the leader of the family after the father. For example, Mr. Dairiki, who was a Japanese American citizen, highlighted the responsibilities of the first-born son. He was the eldest son to his father, who also a first-born son in his family; they were in Japan visiting an ill grandfather. Upon their entry into the country, war broke out, eliminating their ability to return home to the United States.

> My father is first born in the family and then the first born son. [Received] letter stating that my grandfather was ill…So we planned to travel to Japan in the summer of 1941…Just father and myself. (Mr. Dairiki)

Both he and his father were in Hiroshima at the time of the bombing and were exposed to the bomb. This honor and pride toward elders is another key cultural value among the Japanese people (Leininger, 1995). Echoing the emphasis on birth order, another participant continually referred to himself as "proud number one son of Tanemori" (Mr. Tanemori). This same familial orientation, so central to Japanese cultural norms was present in many of the interviews.

Social Factors

In the narratives, social factors such as shame, stigma, and mistrust were displayed among some of the participants. These individuals spoke of displays of discrimination; people treating radiation exposed survivors as contaminated, with fears of contagion from close contact. Additionally, some members of society expressed concerns about the *hibakusha's* ability to marry following exposure to radiation. Several

participants spoke of the guilt and/or shame of being a survivor; they expressed shame for living while their siblings died. This shame was evident in Mr. Yonokura's story.

> And then, my brother got sick…and he was the smart one in the family. So why did I survive?

Very poignantly, aspects of social cultural factors surrounding the marriage rituals in Japan influenced the female *hibakusha*. Specifically, during the 1940's, arranged marriages were common in Japan, with the choosing of a spouse being heavily influenced by appearance, social standing, and ability to conceive and bear a male child. One participant describes the experience of being female in the Japanese culture the following way:

> In Japan, especially in Japan, it is very old fashioned. You know, you have to look pretty, many times. (Ms. Brown)

For many female survivors, the fact that they were exposed to radiation from the bombing threatened their standing and capacity to be held as an appropriate marriage partner; this was due to scars or physical deformities that were a direct result of radiation exposure, and concern about their potential for bearing children with malformations or abnormalities.

Another participant echoed the emphasis placed on marriage and the concern of women who had been affected by the bombing:

> [If you are from Hiroshima] Nobody gonna marry you. (Ms. Fujimoto)

This highlights the social factor of stigma and discrimination among survivors.

During the post war-time period in Japan, getting married was of critical importance to a woman as a source of livelihood, allowing her to be taken care of in a

male dominated world. One participant described her mother's concern for her and her future after she experienced significant burns.

> My mom was so worried about [me being single and unable to support myself], and [said] you have to get a good education in case you don't get married. You have to survive by yourself. (Ms. Brown)

Her mother's concern for her future was validated when she heard the following comment from a potential suitor:

> Japanese guy mention my face, you know. 'I only get married once, I don't want to have anyone who has a scar'. (Ms. Brown)

Throughout the narratives, women frequently discussed physical appearance, the societal pressures of external beauty, and the need for reliance on a man in order to be supported. For some, the external scars they bore gave witness to their exposure and symbolized the stigma they carried as *hibakusha.* For one participant, the capacity to meet social status and expectations was altered as a result of her exposure; her mother warned her to never bear children due to the potential risk of malformation, and following her mother's recommendation, she never conceived a child.

> She [mother] told me not to have a baby. (Ms. Eda)

In the Japanese culture, family, marriage, and children represent blessing and favor, particularly in the War era; to never give birth to a child had a considerable influence on Ms. Eda's social status.

<u>Language and Ethnohistory:</u>

Comprised of special messages, meaning, symbolic referents, and representations of modes of action, language is the central means of communicating

and maintaining relationships (Leininger, 1978). Ethnohistory denotes past facts, events, instances, and experiences of individuals and groups that are primarily people centered and describe, explain, and interpret human lifeways within particular cultural context (Welch, 2002).

Core dimensions of Japanese culture were reflected in the language used by participants. Typically in Japanese society, conformity and harmony are important ideals. This study reflected the values placed on the virtues of peaceful coexistence and respect for the group in the words of many participants speaking collectively as *hibakusha*. For example, they referred to the entire group of survivors when discussing the need to speak out and promote peace.

One participant, Mr. Yonokura continually referred to the group as a whole;

> She [sister who was knowledgeable about psychology] helped us…if there was someone like that, ready to assist us, help us.

Absent in this passage is any reflection of the singular "I"; he is speaking collectively as a group, about "us". This exemplifies the emphasis of unity within the culture and is indicated in the language. According to Leininger's evaluation of dominant cultural values within the Japanese American society, group compliance is a key standard (Leininger, 1995). Solidarity was exhibited in the method by which the survivors told their story; their individual experience was woven within their family. Moreover, the *hibakusha* rallied as a unified group to support peace activism movements. In addition to collectively speaking as a group, the survivors wove the element of metaphors into their narratives, providing a creative and artistic representation to the story.

Metaphors

According to Leininger (1978), symbolic referents comprise language; metaphors are one such example. In this research, metaphors were strongly incorporated into several of the interviews. In particular; Mr. Tanemori presented a narrative rich in symbolic language. For example, throughout his narrative, a white crane was used to symbolize peace and eternal life:

> That night [August 5, 1945, the night prior to the bomb], I had a dream…the white crane appeared to me…at the end of the dream, the crane was [flying] above the fires, and I tried to save him…But, the energy above the fire was so powerful, it sucked the white crane out of my hand. (Mr. Tanemori)

His recollection displayed the struggle for life and peace when faced with the ferocious inferno that accompanied the bomb.

Subsequently, Mr. Tanemori continued his use of metaphor, transforming embers of fire into thousands of beautiful monarch butterflies; this narrative cycle provides a representation of his view of the destruction of life and rebirth he experienced. Later in his story, Mr. Tanemori metaphorically portrayed Mount Fuji as a majestic symbol of the Japanese spirit. Uprooted trees and scattered seeds gave a visual portrayal of the terror of displacement and disorientation that was occurring throughout the city and its people.

When describing the destruction and intensity of the heat and fires, another participant, Mr. Fujita, made this parallel:

> If the windows [had been] facing the other way, I think we would have just burned…cooked like a chicken.

This metaphor provides a reference to the intensity of the August 6heat he experienced.

In another poignant illustration, Mr. Tanemori further described the bombing using the following symbolism:

> Some say how was it after the bombing of Hiroshima? There are no words to describe the pain, the anguish, and hopeless. But I could describe it this way… if we were able to go out in a field, and gather all the dry leaves from the hillside and bring [them] back and make a wall, 32 feet round on the diameter, and walls 10 feet high with dry leaves. And bring thousands and thousands of caterpillars, and put in the center. Inside the wall that we just built. And if we had matches, setting fires in all directions. And to see how the caterpillars tried to escape-not only from the heat, but physically move out, and only two percent…I think that is the best way I can describe the feeling of hopelessness of that morning, August 6, and quickly, I lost a total of six members of my family.

His representation of people as caterpillars, trapped and burning alive, paints a very vivid picture of what it was like for many people trying to escape the inferno of the city following the bombings. Mr. Tanemori continues the focus on heat and destruction by describing the fiery process of the silkworm.

> The worm grows and becomes the pupa, spins the cocoon…the majority of cocoon is put on a metal tray…spread pupae and put in the oven, the heated oven kill it…I liken the oven concept because that is much more close to my own experience in Hiroshima.

This symbolic process of the silkworm describes in explicit detail Mr. Tanemori's view of the destruction and sacrifice of life in order to bring new generations.

From my field experience in Hiroshima and through forming relationships with key contacts of Japanese descent, I have observed an aesthetic flair. Whether in language or exchanges of daily life, such as the offering of gifts, a creative presentation of the Asian culture exists. For example, the packaging of items are intricately wrapped and arranged as beautiful pieces of art. Further, the art of origami, the intricate folding of paper into decorative shapes, displays the artistic characteristics of many of the

Japanese people. This creative tendency can also translate into their linguistic style. Instead of giving a complete chronology of facts, some participants wove metaphors into their ornate recollections. In addition to its capacity to give life to the experience of emotion and devastation, the use of metaphors in their narrative language is also reflective of the artistic flavor of the Japanese people and their social norms.

Sensory Qualities

As a part of Leininger's concept of ethnohistory, the description of past events within a particular context is also a factor in language. For the *hibakusha,* the renditions were heavily influenced by receptive observations. Throughout every interview, consistent attributes in the narratives were the intricate detail and description used to recount the bomb event and the immediate aftermath. As part of providing that richness, each participant incorporated various sensory perceptions into their discussion. Although most all senses were mentioned, sight, hearing, and smell were the most prominent. When discussing these senses, many paused and were particularly introspective.

<u>Sight:</u>

Some participants described the vision they saw when the bomb dropped over 63 years ago, visions burned permanently into their memories.

> And we were playing in the playground, then suddenly, I saw the white, actually the orange color…There was just white smoke. (Ms. Brown)
>
> It was a brilliant white flash and felt very warm around us. (Mr. Dairiki)

While some narrowed on the appearance of the bomb explosion, others focused on the horror of the sights of the aftermath of the bomb, especially those that related to death.

> [I started] seeing the corpses around and people moaning and crying for help. (Mr. Dairiki)
>
> [I was] watching the way, you know, they are dying. (Ms. Brown)
>
> [My mother] looked like a ghost, all black and hair is all standing up, blood is running and burned, so [my father] thought that [my mother] is ghost, but she is alive. (Ms. Eda)
>
> The [epicenter] was very close to our school, so we passed by every day and we look at this [bank building with a shadow where people were sitting on the steps when the blast occurred]. We couldn't even imagine when they say people melt. (Ms. Eda)

Hearing:

The sounds of the bombings and the recovery afterwards were excruciating for some to hear. And as with vision, the descriptions of the noises were as if they were happening in the present or immediate past; as I listened, any doubts of their ability to remember details from decades previous were completely eliminated. For many, it was as if they were still hearing the sounds that plagued them so many years ago; some participants stated they still heard the sounds, particularly crying, as if it happened yesterday. Other survivors paused and were introspective after describing an auditory sense, as if they were allowing that noise to permeate them, or abate, at that moment.

> And then crying and moaning and that voice; I never will take it out from my ears. (Ms. Fujimoto)
>
> The sound of people screaming or crying, you know, you don't hear that. [in the Peace Museum] (Mr. Fujita)
>
> I heard footsteps in the cloud of smoke. (Mr. Dairiki)

Smell:

One of the strongest sensory perceptions discussed in the narratives was smell, and it was fresh in their recollections as well. One participant still recalls the odor when exposed to decaying animals.

> Everything get hot and stink and rot right away. And the stinking smell all over the place. People are dying constantly. (Mr. Dairiki)

Another individual's described the intensity of the smell and the impact it had on him.

> I tried to go through [the old Peace Museum], but the smell of burning human flesh returned. Now, I was never able to go through [the old Museum], never, never [because the smell was too strong for me]. All of us have memories, Amy. It is real! (Mr. Tanemori)

For him, the sight and smell of the first Museum introduced such a powerful memory that he was unable to proceed; he was literally stopped in his tracks. The smells brought back such vivid recollections that transported him mentally back to August 1945. Interestingly, according to Mr. Tanemori, the authenticity of the experience was lost in the new, more modern technology of the Museum addition.

> I went there [to new Peace Museum], there is no smell. They lost the true spirit. The movies, the high tech, we lost it. I really truly believe we have lost the connection. It is just like sad, really sad. (Mr. Tanemori)

Another participant commented on the lack of authenticity of the memorial, saying that it could not accurately depict the happenings and surroundings during the bombings.

> You don't smell when you are in there [in the Peace Museum]. I still remember the smell. Every time I go through, or I see a dead animal, my mind go back to 60 years ago because the burning, you know, the rotten body, decaying you know, I still smell and sense. (Mr. Fujita)

Clearly, these experiences were not only things participants lived through in 1945; for many, these are recurrent visceral sensory memories that plague them from time to time. As one said, “it is real.”

Worldview:

Leininger (1978) posits that worldview embodies the way people tend to look out on their world and the universe to form a picture or a value stance of their life or sphere around them. By incorporating a general view and their individual point of reference, the concept can assist in assessing a person’s perception or knowledge of the world. The formation of an individual’s impression leads to a portrayal of their worldview; this representation is one focus of cultural studies.

In this study, the *hibakusha* presented a broad worldview in their narratives. Not only were they telling me their stories; they were representing humanity on a much larger scale. Their stories expanded beyond what happened to them as an individual; they broadened their perspective to their family unit and to humankind as a whole. For example, Ms. Fujimoto exclaimed, “I have to leap up and tell them [society] what they did to the human being.” At this juncture, she had removed herself from her individual story; she was describing what the atomic bomb had done to the human race. This ideation of collective community and unity is a component of Japanese culture and was evident throughout the participants’ accounts.

Threads of this concept of unity and society as a collective whole were evident in the transcripts; for example, Mr. Yonokura speaking in plural “us” or “we”, instead of singularly about “I”, throughout his interview. A dichotomy existed throughout the

narratives: survivors were telling me their stories, their individual experiences and what the bombing did to their families. Yet they were also speaking on behalf of humankind, speaking out as *hibakusha* about the destruction of the atomic bombs and the need for the abolition of nuclear weapons throughout the world.

From Leininger's theoretical work, two main subsets of worldview exist: emic and etic perspectives. "Emic refers to the local or insider's views and values about a phenomenon" (Leininger, 1995, p. 73). In this instance, emic represents the hibakusha's personal experience of the atomic bombing events. "Etic refers to the outsider's views and values about a phenomenon" (Leininger, 1995, p, 73) and incorporates my data analysis as the researcher. From the narratives, the emic frame of reference is broad; their translation of the bombing experience extends beyond themselves. For example, Ms. Fujimoto spoke of the collective society of survivors when she noted:

> We are the ones carrying the heavy burden [of living as a survivor and not dying immediately in the blast].

Again, the reference is to "we", not singular "I." Interestingly, the survivors broad worldview coincides with the vast perspectives nurses need to provide culturally congruent care. Leininger's goal in her theory development was to improve nurse's functioning in a growing multicultural world (Leininger, 1995); requiring nurses to go beyond their individual societal norms and provide supportive care to persons of variable backgrounds.

<u>Religious and Philosophical Factors:</u>

According to Leininger's framework, religious and philosophical values influence the cultural practices and ultimately the well-being of individuals, families, and groups

(Welch, 2002). Spiritual beliefs can be a significant force that impact care, which effects the health of people; or serves to assist them in facing disabilities, illnesses and death. Within the Japanese society, religion is an intensive activity and religious teachings and practices are crucial to helping people cope with practical daily problems and life stresses (Leininger, 1978). Shinto and Buddhism are the principal faiths.

Religion

In the narratives, religious beliefs were discussed in three of the eight interviews. Mr. Tanemori spoke about his time spent in the ministry serving as an associate pastor; he also wrote about his experience in his book. In the book, he spoke of persecution from the seminary he was attending because of being a Japanese survivor; he recalled the following comments a fellow student said to him:

> 'Hey you, Japanese immigrant…What audacity you have to criticize us, when you were raised in Buddha's faith and in a JAPanese [sic] culture that eats raw fish!' (Tanemori, 2008, p. 294)

Yet, Mr. Tanemori also talked of how his faith helped him migrate to a willingness to forgive those who harmed him and his family.

> It's a relationship I find with the Divine. [It] allows me to see the relationship with others [and forgive them]…Without that, I don't think I would have been able to survive these years.

Mr. Yonokura told of ways in which his experience with the atomic bomb in the past was helpful as a mechanism to assist parishioners and loved ones of those who have died in the present. He stated:

> So now, I am a better counselor because of what happened to me…and whenever I counsel parishioners or people in the community, I know what I am talking about personally.

Another participant described his connection with the church and his experience:

> I become very more active in Buddhism, my religion and maybe deep inside, to ease my conscience [reduce emotional distress] by chanting a Buddhist teaching to remember everything you chant. Of course, it's about remembering of the past people, the suffering they have gone through, and elevate them to become a better person. (Mr. Dairiki)

Mr. Dairiki continued his interview by providing a historical perspective of Buddhism and Shinto in Japan, noting that "Buddism was more for the soul and the spirit and funerals."

For these participants, a connection between their atomic bomb experience and their religious views exists. The extent of the relationship between the two aspects cannot be ascertained by the findings in this study; however this relationship does pose additional research questions for future work.

Philosophical Factors

Two components central to the formation of one's philosophical view are perceptions of reality and existence. This awareness and formation of presence is another component of the social structure that influences healthcare. For example, possessing a philosophical belief that all individuals have free will and the power to make decisions can shape the health of a person. Survivors I spoke with displayed several philosophical perspectives throughout their narratives. A quest for inner peace, learning to forgive those who had brought harm, and living out the concept of beneficence were woven in their stories.

Mr. Tanemori frequently repeated “to live for the benefit of others” as a life mantra. Within the first three minutes of our conversation, Mr. Tanemori stated the words of wisdom his father regularly taught before he was killed in the bombing:

> The best way to make [the world] a peaceful place, a safer place whereby all people can live, is to learn to live for the benefit of others. Then we all benefit.

From the narrative, it was apparent that Mr. Tanemori had heeded the advice of his father and incorporated the concept of beneficence into his worldview. Throughout the interview, he referred back to the patriarchal philosophy seven times.

> Honor your heart, then remember to live for the benefit of others.

Beyond the philosophy of beneficence, the *hibakusha’s* optimistic view of the circumstances was evident. The reality of the harshness of their life following the bomb and their resilience to rebound and recover from adversity speaks of their stoical perspective. One participant discussed the philosophical stance that many Japanese embodied; although they endured great tribulation, a common good was the ultimate result.

> So we suffered and you’ve killed all the people, but we were glad to see the war end, like anybody else. (Mr. Dairiki).

Apart from their adversity, the *hibakusha* displayed the strong philosophical view of standing up in opposition to another atomic bomb attack. One individual described the urgency in speaking out against nuclear warfare in the following:

> Make them understand, [nuclear war] shouldn’t happen. (Ms. Eda).

To the survivors, their existence is paramount for them. The fact that they survived one of the greatest attacks on humankind gives them a reverence for life, inspiring them to work to preserve the life of others. Each participant had a deep-seated desire to share their story and work to abolish nuclear weapons.

Cultural Values and Lifeways:

In Leininger's theory, values are universal features of cultures and subcultures; they provide an excellent predictive basis for determining an individual's behavior. Values may be able to be observed directly; other times they may need to be inferred based on observable behavior. A lifeway is a regular and recurrent life pattern that is identified with reference to an individual's natural setting (Leininger, 1978). Observation of an individual or society can provide a cultural assessment of repetitive life pattern. As with other aspects of the social structure, values and lifeways can influence health and well-being.

The Japanese society has a long history of overcoming as one of their major lifeways, or cultural patterns. Feudal systems, dynasties, and war run deep within the Japanese history. Japan is "a land that has proved resilience in the face of a long feudal period and two World Wars" (Borade, 2008, p. 1). Based on this strong historical foundation, resilience and overcoming were not surprising as key elements found in the survivor narratives. One exemplar in particular stands out: after describing the pain and anguish he endured for over 50 years following the bombing, Mr. Tanemori exclaimed:

> I am positive you can overcome any issue.

Another individual echoed this capacity to overcome.

> You know, I went through a lot. I lost my whole family. My wife passed away because of leukemia. But, like I say, they are gone and I am here. (Mr. Fujita)

A sense of pride was another cultural value that was reflected in the narratives. Ms. Fujimoto noted that the Japanese were raised to have pride, “You not ask the government for your support or anything, you do it on your own.” Furthermore, Mr. Tanemori spoke of the deeply seeded pride as he referred to himself as the “proud number one son of Tanemori.” This instilled sense of pride was also evident to me as I completed fieldwork in Hiroshima. The beauty and cleanliness of the area was beyond what a small crew could master. Creating and maintaining a sustained environment depicting such beauty required full community involvement and input from citizens who felt pride in their homeland. The attractive landscape of the region of the present masked the heavy toil the city had paid over sixty years ago.

Political and Legal Factors:

According to Leininger’s (1978) framework, the political system influences health care in cultures and is reflected in the power and influential strategies that individuals or groups have upon each other. In general, these factors can be a powerful determinant of health care policies, programs, and systems. Power and influence were clearly displayed in the peace activism realm for the survivors; their mere existence and experience was a formidable display of opposition against the use of nuclear warfare.

From a political perspective, every narrative included aspects of promoting peace. Survivors spoke with great urgency about the need to abolish nuclear weapons, the belief that war was unnecessary, and a deep desire and commitment to speak out

about their exposure to the atomic bomb to prevent another group from enduring the hardship they experienced.

Ms. Brown spoke of all wars:

> I oppose the war. For any kind of reason. I can't stand that.

Mr. Yonokura spoke specifically of nuclear weapons:

> I think the non-proliferation treaty should be taken very, very seriously. (Mr. Yonokura).

Others echoed the desire to abolish nuclear warfare or never allow another atomic bomb event to occur.

> We [survivors] need to make them understand, it [atomic bomb release] shouldn't happen…But just don't drop...We shouldn't have the bomb…nothing you can gain from that [possessing atomic weapons]. (Ms. Eda)

> I don't want any other human to have to go through what I went through. Mine [my experience with the bombing] is enough. (Mr. Fujita)

> I would not want any of these nuclear weapons to be used. I would hate to see something like that happen again. (Mr. Ota)

The urgency of speaking out on the political issue of war was present in every single interview, with all survivors working to promote peace and avoid nuclear weapon use.

No legal factors were discussed in any of the interviews. The lack of representation in the discussions suggest that legal matters did not factor into their recollections of the atomic bomb experience. This implies the direness of the life or death situation, with little regard for litigious affairs.

Economic and Technological Factors:

From Leininger's perspective, economic systems and availability of technology can be a significant determinant of quality of health within a society. Technologic and economic factors were not discussed in any of the narratives. All participants spoke on their specific experience, focusing on the necessity of simply getting thru the ordeal.

Educational Factors:

Another dimension of the cultural structure within Leininger's model is education, both formal and informal. One participant spoke of how the bombing influenced the educational process. Significant scarring resulted from radiation burns that Ms. Brown received, and as a result, there were grave concern about her marriage potential and diminished chances of being supported by a husband. Therefore, Ms. Brown's mother placed high emphasis on her daughter getting an education so she could get a good job and support herself. Going against the cultural norms of the time, Ms. Brown's need to receive an education superseded her brothers and other siblings potential for college. Ultimately, Ms. Brown received an education; yet faced resistance when she tried to get a good professional position in a male dominated job market. She traveled to the United States and France to continue her studies and ultimately got a job in the United States. The value of education in the above exemplar is congruent with the cultural framework. In an evaluation of the dominant traditional values within the Japanese American society, Leininger observed the emphasis on maintaining high educational standards within the Japanese community (Leininger, 1995).

Summary

From the survivor narratives, central aspects of worldview, kinship, language, religious and philosophical beliefs, cultural values, political and educational factors comprised the cultural context of the *hibakusha's* stories. These facets are the foundation on which they told their story.

What follows is an explicit discussion of all the key themes that recurred across transcripts and were evident to some degree in all of the stories told by the participants. Analysis of the data revealed the ways in which these core elements of survivors' experiences interfaced, and were manifested in their lives as they shared them with me.

Thematic Structure: "I am a Living History"

Once participants' stories were collected, all transcripts were analyzed and evaluated for themes that emerged from the data. All narratives included detailed descriptions of the destruction resulting from the bomb. Themes of thriving and surviving along a spectrum of resilience were also readily apparent, with "thriving" characterized by a richness of existence, with many life interests, and a sense of a future filled with hope; in contrast, "surviving" is described along the lines of continuing to exist despite significant challenges, or getting by day-to-day in society. These associated with surviving include stigma, anxiety, and mistrust. Themes associated with thriving include overcoming, peace activism, and forgiveness. These concepts are integrated to form a Thematic Structure, offering a pictorial overview of the themes and their relationships. While further explanation of the structure and components will follow,

the diagram showing the themes in relationship to each other is found in Figure 20 on page 139.

Overview of the Structure

The entire diagram is enclosed by a thick, black lined box, which represents the enclosure of the bombing initially within the city. As explained by one participant, symbolically there was a wall around the city, with people trying desperately to escape the inferno. Underlying the figure is a photograph of a bomb explosion, which represents the preparation that went into the bombing attack, and the attack itself. Centrally located in the photograph and central to the bombing event is the explosion, epitomizing the literal destruction created by the bomb. This desecration led to the annihilation of the society and its people. Time is an anchor on the diagram, with 1945 on the left and the present time situated in the right corner. Components of surviving are along the left axis and include stigma, anxiety, and mistrust. Traits of thriving, which include overcoming, peace activism, and forgiveness are on the right axis of the diagram. Resilience serves as a lever, allowing participants to move from either surviving or thriving. Next, each section of the structure will be discussed further.

Time

Phenomenology experts Thomas and Pollio (2002) note that one of the major grounds of human existence is time. Within the survivor's narratives, time is a central orientation. Two main parts of their stories include: before/during the bomb, and after the bombing. All participants exist psychologically along a continuum of time, with some being more keenly focused on the past, emphasizing experiences before or during the

bombing. These individuals appear more anxious, worry, or concentrate on the hopelessness of the bombing and its effects. Others are more present or future oriented, suggesting they are living in the moment, looking to the future, and living their lives in the timeframe of after the bombing. As demonstrated in the exemplars that follow, participants can straddle the continuum or move their position along the spectrum, dependent upon their current situation. Time serves as a key component of the thematic structure, which will be further explained.

Resilience as a Lever

It is important to note that the entire diagram is fluid, with participants moving from one area to another, or exhibiting traits of both surviving and thriving simultaneously. One event can move them from one area to another, as will be discussed in the exemplars. A vital piece of the puzzle is the relevance that resilience plays in the structure. Defined as “a phenomenon of positive adjustments in the face of adversity” (Haase, 2004, p. 342), resilience serves as a lever, allowing individuals to move from one area to another as events or situations arise. One participant, Mr. Tanemori, described being on a “teeter toter”, as a reference of a level. When resilience is high, an individual will exhibit traits of thriving. Conversely, if the level drops, the person will move down into survival mode. With the spectrum being fluid, individuals can ebb and flow from one area to another based on specific situations. As they move, their focus of time orientation can change from past to current orientation.

Surviving

Surviving is defined as the ability to continue to exist, despite adverse conditions. All participants survived the event, since they are physically present 63 years following the bombing. However, participants in this category appeared to have a stronger association to past orientation; therefore, their orientation on the thematic structure is to migrate towards the time orientation of 1945. They routinely live with older memories of the bombing, and may exhibit signs of worry, anxiety, mistrust, and focus on the stigma survivors carry. For example, participants spoke of concern for their individual and their family's health, worrying that each cold may be death, or the birth of a new grandchild may result in a malformed child.

> I really didn't want my daughter to have a baby. Till I see it, I could not…have an easy feeling. Is he okay? Is she okay? Now he looks healthy, but is he really well? (Ms. Fujimoto)

There is a continual mark the bombing has placed on their lives, and frequent or daily reminders quickly bring the individual back in time to August 6 or 9, 1945.

> Whenever I had a cold, I said to myself, this may be it [explaining his fear of death]. (Mr. Yonokura)

It is during these periods of surviving that the experiences of the bombing event are fresh and new within them, as if they are continually reliving the moment.

Thriving

On the other side of the spectrum are the individuals who are thriving. For the purposes of this study, thriving is defined as the ability to prosper or flourish, despite adverse conditions. As Thomas and Hall (2008) suggest, this prospering strength is an evolutionary process. These individuals appear to be more present or future oriented,

hopeful, and possess traits of transcendence, overcoming, and forgiveness. Their position migrates to the right of the diagram, toward the present time orientation. Not only have they survived the bombing, its immediate and long-term effects, but they have moved on, often focusing on other issues instead of dwelling on the bomb and the past. Participants spoke of looking towards other causes; for example, saving animals, serving as a counselor to those in need, and working towards peace activism instead of harboring on former adversity.

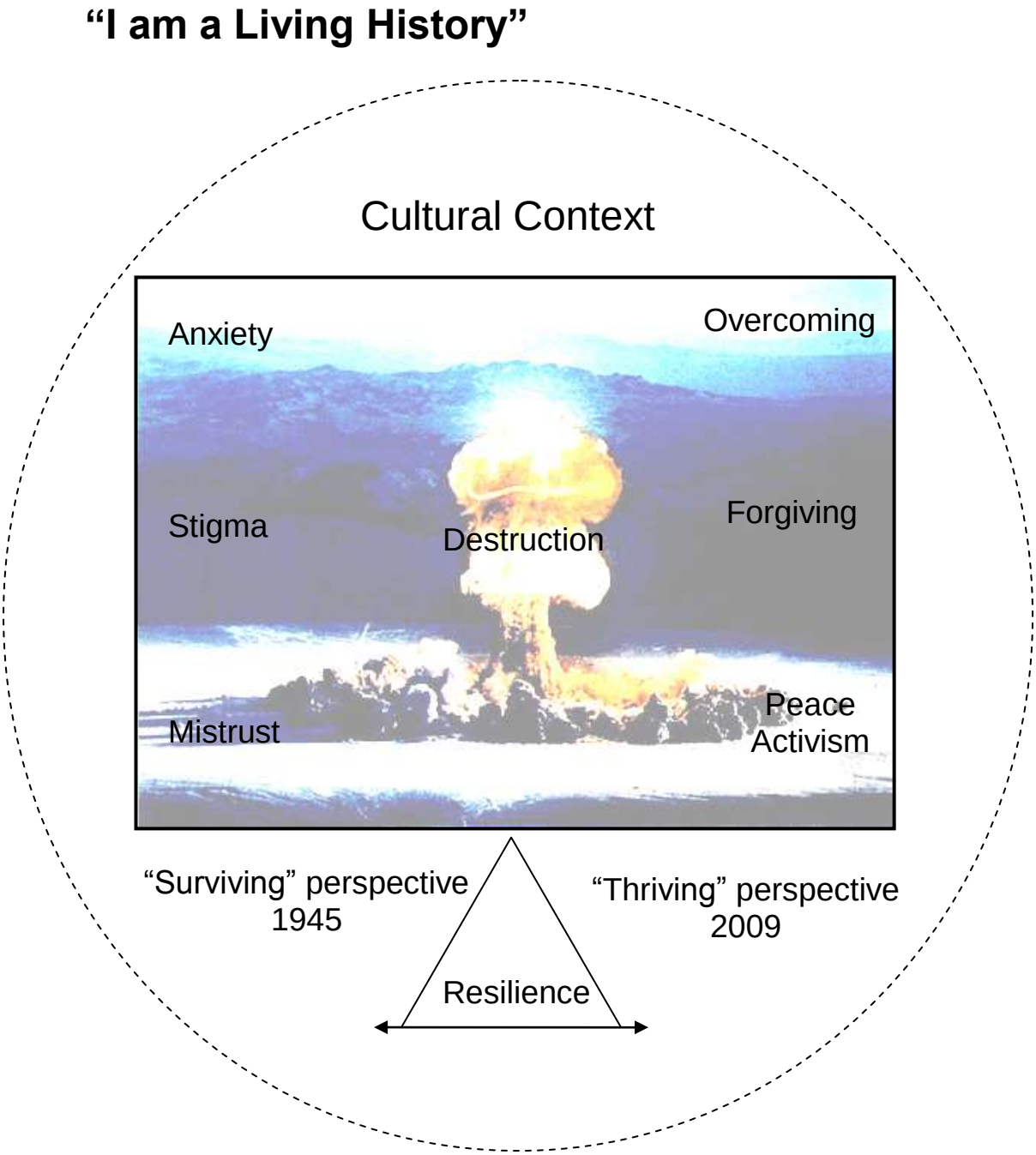
Exemplars

A key exemplar of this diagram and resilience as a lever can be illustrated in the narrative of Mr. Fujita. Throughout his interview, he continually exhibited signs of thriving, overcoming physical trauma of cuts and injuries, malnutrition, and growing up in an orphanage. He clearly states, “The past is the past. Look to the future”, which highlights the future orientation, suggesting thriving. Yet, he also stated that every time he passed “road kill” or dead animals on the side of the highway, the smell brought him immediately back to the bombing. From the diagram, it is appropriate to say that the majority of Mr. Fujita’s daily living is in the “thriving” category; yet the smell of rotting flesh lowers his resilience and puts him into the “surviving” category, and immediately relocates him back to 1945 in Japan. He may stay in this realm of “surviving” mentality momentarily, or for longer periods of time, before recovering and returning to his present or future orientation.

Another example of the diagram in living form is within the story of Mr. Yonokura. Often living in the domain of psychological thriving, Mr. Yonokura uses his previous

experience of loss with the bomb to work towards peace activism and counsels others who have been through traumatic experiences. One could easily place him in the thriving category. Yet, when he gets a common illness generally considered to be non-life-threatening, he is quickly transferred back into the surviving mode. “Whenever I even caught a cold or got sick, I thought to myself, ‘This may be it.’ You know, I may not make it through this time.” This continual, fluid movement allows for participants to move from one area to another mediated by the resilience they are exhibiting at that particular point in time. A pictorial representation of these themes is shown in the following thematic structure. The following discussion of the themes will be from two perspectives: within the cultural context of Leininger’s work and the thematic structure.

Figure 20.


"I am a Living History"
Cultural Context
Anxiety
Overcoming
Stigma
Destruction
Forgiving
Mistrust
Peace
Activism
"Surviving" perspective
1945
"Thriving" perspective
2009
Resilience

One facet of Leininger's Culture Care Theory includes the environmental context, represented in this study by the destruction of the bombing. The degree of destruction the bombing had on individuals and the society as a whole was remarkable. Several critical components impacted by destruction are the person, on a small scale, or the society from a larger perspective; including physical health, psychological health, and the response following a disaster. On an individual level, participants spoke of physical health elements that were affected by the bombing, ranging from acute injuries, burns, and trauma to long term consequences of cancer, leukemia, and vision problems, to name a few. Overall, physical health has received the majority of attention from previous atomic bombing research, including studies from RERF and is central to discussions with *hibakusha*.

Receiving less attention in previous research is the psychosocial health of individuals who experienced the bombing. Psychosocial health incorporates various aspects, including nightmares, flashbacks, anxiety, fear, and emotional upset. From the interviews, participants spoke of nightmares and anxiety they had in response to the bombing. Again, both immediate and long-term episodes were noted. In general, both in the United States and in Japan, there is less emphasis and study on psychosocial impact. In both cultures, stigma associated with psychosocial difficulties often exists, resulting in many individuals not wishing to talk or admit about their psychosocial issues.

After the bombing, each person's immediate thought was for escape and meeting survival needs. Participants spoke of their efforts to flee the city, trying to free

themselves from crumbling buildings, attempting to get food or water, or finding themselves in a shelter to receive medical treatment; although treatment options spanned from nothing, to minimal or home remedies.

On a small, localized scale, the physical health, psychosocial health, and response of individuals were influenced by the bombing. On a larger scale, the bombing affected the society as a whole. For example, the response effort of the health care community was impacted by the loss of healthcare personnel dying as victims, and the destruction of equipment and hospitals. According to one participant, the loss of medically trained persons was significant.

> One hundred eighty of the city's 200 doctors…out of the 1700 nurses, 1654 perished. (Mr. Dairiki)

The volume of those injured and dead bombarded the society and hampered the ability to effectively care for those who were ill.

Environmental Context: Complete Destruction

According to Leininger's framework, the environmental context symbolizes the "totality of an event, situation, and life experiences that give meaning and order to guide human expressions and decisions within a particular setting, situation, or geographic area" (Leininger, 1995, p. 73). For the *hibakusha*, the totality of the atomic bomb situation had significant meaning to their lives, forever altering their existence.

The day started out as a typical day in Japan during the war. There had been previous air-raid alarms during the night and early hours of August 6, 1945. Although the day ended up being one of destruction, it began with promise. As one participant describes…

> Prior to the bombing, after all-clear signal at 7:20 am from previous air raid alert, everything was alive in the city. (Mr. Dairiki)

However, that promise quickly ended as the bomb was dropped at 8:15 in the morning. One participant paints a very clear picture of consequences.

> In Nagasaki and Hiroshima, a sort of primitive atomic bombs was used. Explosion, heat, and radiation. Those three things. The explosion created winds at 800 miles per hour that flattened almost everything standing in the city. And then the heat was equivalent to as hot as the surface of the sun, so within a one mile radius, everything either burned or was vaporized. (Mr. Yonokura)

The fires following the bombing were a significant source of tribulation for those that did not immediately vaporize. Blazing fires were reported by several participants.

> The four square miles of the city of Hiroshima turned into an inferno. (Mr. Tanemori)
>
> It was virtually an ocean of fire. (Mr. Ota)

In addition to the fire, the immediate scene following the bomb had a significant impact on the participants. As they spoke to me 63 years later, many were reliving the experience as if it had just occurred. Some participants broke down, cried, or took long pauses as they described their surroundings that day. The utter desecration from the bombings was beyond imagination.

> There is a mother laying there and it looked like they are still alive but both of them…were **dead**…It's a hell. (Ms. Fujimoto)
>
> A total scene of hell, if there is a scene. (Mr. Dairiki)
>
> Everything destroyed. Nothing there. (Ms. Brown)

Every participant spoke in explicit detail about the images they saw, sensations they felt, noises they heard, or foul odors they experienced. As described earlier, these sensory perceptions left significant impressions on the survivors.

> The first thing we saw was somebody walking like a ghost with hand extended out, the hair all shriveled and burned off. And we saw she was dragging her arm and we didn't realize it wasn't [her] hand [or] a rag, it was her skin dangling! (Mr. Dairiki)

The previous quote by Mr. Dairiki and the story surrounding it provides an exemplar of the psychological effect that seeing the destruction had on some of the individuals. Mr. Dairiki described how he and his fellow classmates retreated to a bomb shelter immediately following the bomb. At approximately 10 am, they ventured out of the shelter and the ghost-like figure dragging her arm with skin dangling was the first sight they saw. Scared, they immediately retreated back into the shelter and stayed until 3 pm, when they ventured back out again.

Some participants tried to compare the scene with something of a modern reference.

> Ground Zero, that to me, is nothing [in comparison with what she experienced in Hiroshima]. (Ms. Fujimoto)

As if signifying the magnitude of destruction surrounding them, others could not find the words to describe the scene of total destruction they witnessed. What they were exposed to was unlike anything they could have ever imagined.

> There are no words to describe the pain, the anguish, and hopeless. (Mr. Tanemori)

> I cannot describe with words what I experienced. (Ms. Brown)

Immediately following the bomb, rumors and information went throughout the city, estimating the damage. As they had never witnessed such an attack, there was significant uncertainty about the future of the city. For some, there was a fear of complete loss for a significant period of time.

> We were told that for 50 years we wouldn't have anything in Hiroshima. (Ms. Eda)

The magnitude of destruction the bomb caused was considerable and had a far-reaching impact on those who experienced it; many victims had long-term consequences resulting from it. *Little Boy* and *Fat Man* not only literally exploded, they collapsed the entire society and individual lives. The community was impacted by the demolition of physical health, psychological health, and cultural norms among its members. For individuals, the bombing resulted in the tearing apart of their families, their health, both physically and psychologically, and the societal structure in which they were accustomed. Their lives would be forever altered as a result of the bombings.

Holistic Health and Well-Being: Psychosocial

Within Leininger's framework, health is identified as "a state of well-being or restorative state that is culturally constituted, defined, valued, and practiced by individuals or groups that enables them to function in their daily lives" (Leininger, 1997, p. 38). Including an individual's physical and psychological condition, holistic health offers a broad perspective of their well-being. For the *hibakusha*, all participants told of both physical and/or psychological acute and chronic conditions that resulted from the bombing. One sequella of the bomb was the assault the desecration had on the psychosocial realm. From the narratives, various concepts emerge that dealt with the

psychological aspects of health. One prominent point mentioned in the majority of conversations was the inability to talk about their experiences with others.

> It was hush-hush….so we didn't talk about it. (Mr. Yonokura)

Another participant described the censorship she experienced because she and her husband owned a restaurant and her husband feared the effect of concerns or retaliation of being a survivor would have on their family business.

> [My family and I were] not allowed to talk. (Ms. Fujimoto)

Censorship also came from various sources, including the family unit.

> Their families got sick of listening, having to listen to their stories, you know, even though there was a lot of feelings. (Mr. Yonokura)

The lack of ability to openly discuss their experiences of trauma related to the bombing could have a significant impact on the survivor's psychological health and well-being. Conversation and the ability to talk about one's experience can be therapeutic and assist in overcoming a tragic event. When discussing the ramifications of dealing with their experiences on their own, several participants suggested the benefits of therapeutic conversations to aid the survivors in coping.

> Talking about it maybe is a way of release the tension. (Mr. Dairiki)

Others echoed the benefits of sharing.

> If supporting group are there, that might help. Because if they want to cry, let them cry. If they wanted to scream, let them scream. That's important. You can't put everything inside. (Ms. Fujimoto)

In addition to the inability to share their experiences, the narratives included other psychological aspects that could influence the mental health status of individuals. As discussed in the review literature, previous research by Lifton found that many atomic

bomb survivors experienced “survivor’s guilt”. Within my sample population, several participants confirmed the guilt and shame they felt following the bomb.

> And because even ‘til this day, I cannot take the guilt of surviving. (Ms. Fujimoto)

Another participant shared similar feelings of guilt.

> I grew up with so called ‘survivor’s guilt’…why did I survive? I was the baby and the most vulnerable to radiation. (Mr. Yonokura)

He went on to talk about the effect guilt had on his life and psychological state.

> Guilt is very unhealthy. Because it’s not fact based. I didn’t kill them [his family members]. And yet, I did feel it, I did feel it…I learned to blame myself for everything. (Mr. Yonokura)

In addition to guilt, shame was felt by several of the participants.

> I feel so shamed, personally…I had to go through to defend my father. (Mr. Tanemori)

When talking to people at the national conference of radiation survivors, one participant received validation from others.

> And the same stories…stories of guilt and stories of uncertainty about the future, the constant feeling of uncertainty. (Mr. Yonokura)

Another individual went on to explain how the shame affected her.

> I [was] injured so much, so people stare at me…when I was young, really truly, I suffered. (Ms. Brown)

From the narratives, it was evident that many survivors were still affected psychologically by the bomb’s effects to this day. Stories of continual worry/anxiety and flashbacks emerge. One participant went as far as to say that those who died immediately were “the lucky ones”.

> We are the ones carrying the heavy burden…If people died, sure it's hard, but no suffering there. (Ms. Fujimoto)

Many participants discussed flashbacks they had following the bombing. One participant who was *in utero* ATB described the constant reminder of the bombing event in her school classroom.

> So we use basement where all these people die over there. So we were so afraid to have class over in that classroom. (Ms. Eda)

She also mentioned the flashbacks her mother had for those she could not immediately help following the bomb.

> She [her mother] still sometimes think about are these people still survive or are these people gone. (Ms. Eda)

It is these statements that reiterate the fact that some survivors have a continual reminder of the bombing, and that they may possess an orientation focused on the past instead of the present time.

Another person recalled moments of flashbacks during his life after his family had died during the bombing.

> When I was from teenager to when I get married, that was a time, that I will go back [in my mind], because my mother will come back again, hoping I will visit her. (Mr. Fujita)

It is interesting to note the differences between the physical trauma and the psychological trauma the bomb exerted on the victims. As one participant eluded to, the psychological impact of the bomb had more far reaching implications than the immediate physical trauma.

> Not the wound itself, but I had a very bad experience, a very unpleasant experience, and that comes back to me when I start talking. (Ms. Brown)

Although the psychological wounds were not as visible as the burns and scars, many *hibakusha* carried the internal burdens for the rest of their lives. It was these internal scars that received negligible attention.

Attempts of suicide among the participants themselves or family members were heard several times.

> I want to die, I want to die [survivor speaking of aunt who was burned severely in the bombing]. (Mr. Dairiki)
>
> I attempted suicide, and I failed [crying]. (Mr. Tanemori)

Thoughts of suicide were also echoed in the ethnographic data collection when I spoke to a survivor in Hiroshima about her experience. She talked about attempting suicide several times immediately following the bombing; most poignantly, she walked along a railroad track, waiting to be hit and meet her impending doom. Right before the train arrived, her infant daughter cried out. The resonating cry of her child alerted her and she jumped off the track. She noted that the desire to keep her daughter alive is what saved her.

Additionally, participants talked about worries and anxiety they had for their own health and/or their family members.

> But I do worry about my children and grandchildren. (Ms. Fujimoto)

Other participants discussed their health concerns and expectations.

> I was not expected to live beyond 10 years of age. (Mr. Yonokura)
>
> I didn’t really plan on living this long. (Mr. Yonokura)
>
> So really, no body expected me to survive at that time. Then, I am very fortunate I survived. (Ms. Brown)

From a psychosocial perspective, survivors endured a tragic event that left deep-seated wounds in their psyche. Many were not allowed to speak to others about their experiences, which resulted in the continual harboring of their pain. Several discussed the shame and guilt associated with surviving, and some were driven to suicidal thoughts or acts. Flashbacks were a commonly reported condition, and even now, some participants carry the burden of worrying about their own health or the health of their children and grandchildren. Although the event was over 63 years ago, the effects of the bomb are still present and several participants are still suffering.

Holistic Health and Well-Being: Physical Health

The complete destruction from the bomb had an impact on every aspect of the individuals who were in the cities, including their physical health. Physical health is one component of holistic health and well-being that Leininger addresses. One of the most frequently reported physical health effects reporting from the bombing was burns.

> I started getting some blisters from my burn. (Mr. Ota)
>
> My legs were burned, my arms, my face, my neck, my chest, burned. Everything burned! (Ms. Brown)
>
> All the face is burned so even at this time, when she wash her face, it still little bit feel sensation [*in utero* survivor speaking of her mother's long lasting effects from radiation exposure]. (Ms. Eda)

Burns the survivors received were significant and for several, limited their mobility and ability to do daily activities.

> Injury so severe, I could not walk anymore…I could not walk, I could not do anything. (Ms. Brown)
>
> And it was quite a while before I could really get up and do anything. (Mr. Ota)

> I was so skinny, and I could not even move [describing his dire condition following the bomb when he went into orphanage]. (Mr. Fujita)

One participant describes the details of being taken to one of the treatment facilities in the schools on the night following the bomb.

> But, I could not eat, I could not drink. I just lay down there about one night. (Ms. Brown)

For some, the assaults to physical health that they or their family members suffered was so significant; they have very vivid recollections of the trauma.

> I have no recollection of my mother up, because she was always in bed as far back as I remember [describing his mother who died from effects of radiation when he was 6 years old]. (Mr. Yonokura)

> I don't remember a lot of suffering…but I remember a lot of worms on my legs…yes worms, because of the flies. They would lay eggs on my legs. They would eat so many things. And at first, they eat up the pus, and I don't feel anything. But they started eating my flesh, oh boy, I screamed. I remember. (Ms. Brown)

Other participants focused on health effects they have had recently or are currently managing or treating.

> Dizziness, so many cancers, leukemia count, fatigue. (Ms. Fujimoto)

> Diabetic and vision problems. (Mr. Yonokura)

> Prostate cancer, thyroid is borderline and liver is borderline. (Mr. Dairiki)

From their stories, the survivors generally focus on two main timeframes when discussing their physical health in relation to the bombing. Immediately following the bomb, burns and injuries were considerable for many. Others focus on the long-term effects of the bomb exposure, including cancer and changes in blood cell counts. Of the

physical effects the survivors mentioned, most have been recorded and evaluated in RERF reports.

Professional Systems: Response Effort

Within Leininger's model of culture care, professional system is one mechanism of the health system; this network includes a core of nurses, physicians, social workers, dentists, pharmacists, and other professionals who have by rigorous study been prepared and render health services to a culture group (Leininger, 1978). The response effort from the medical community, Red Cross, and military support following the bomb comprise the professional system. From the survivor's narratives, we catch a glimpse of the response effort that took place immediately following the bombing. Some participants spoke of the triage system that took place.

> So I think it depend on what kind of condition, they put in one school or another school. (Ms. Brown)

> And then someone pull us from the breaking down the house and then took me to the tent. It think it's the Red Cross, but I'm not sure exactly, but anyway, there. And we waited til our relatives come pick us up. (Ms. Fujimoto)

Participants commented on the availability and workload of the medical professionals who assisted in the response effort.

> And the doctors are trying to help everybody, but its not enough people there. And so for every can do they put at the medication and then there are not many of the nurses around there either. Because it is people is only a…because all of them are hurt. (Ms. Fujimoto)

Another individual provided more quantitative picture of what was going.

> 180 of the city's 200 doctors, only 20 survived. Out of the 1700-1800 nurses, 1,654 perished. And out of the 55 hospitals, only 3 remained. (Mr. Dairiki)

Clearly, the availability of trained personnel took a significant loss, as many of the responders were wounded or victims themselves. Based on the significant loss in personnel, volunteers and family members attempted to do what they could to assist the wounded, which leads to the next system of care in Leininger's model; generic or folk systems.

Folk Systems: Extreme Measures of Care

Folk system is another mechanism of health care delivery in Leininger's culture care model. This consists of an indigenous health system comprised of traditional folk medicines, folk care agents, and home treatment practices (Leininger, 1978); often this system is the first line of care. Many of the narratives included aspects of this type of folk care. Most participants mentioned the lack of medical supplies and medications to assist in providing care. They relied on the basics for simple necessities.

> We just had the time for simple survival…we ran through Hiroshima with one thought in mind-just escape from inferno. (Mr. Tanemori)
>
> We don't have any medicine those days…No medicine, no nothing. (Ms. Eda)
>
> During the war, the Japanese did not have any medicine. The only thing they had was mercurochrome…and I think that is the only reason that I survived. (Mr. Fujita)

This lack of medication and personnel led people to go to extremes; requiring them to utilize whatever was available to assist in providing care to their loved ones. The extreme measures to which individuals went to provide care for themselves or their family members would fall under the auspices of folk systems. When discussing the injuries they endured, most participants talked about extreme measure of care their

family members did to assist in their healing. People were resourceful and used whatever they had on hand, with the hope that it would provide some benefit.

> We make up mashed potato and mash it and put it on the wound like a bandage, and the mashed potato to absorb the juice that come out of her body. (Mr. Dairiki)

> Maggot, yes, that was all over her face and body, so my grandmother was picking with the Chap-stick every time like this [scraps finger across skin] and she used to tell me only mother can do that, no anyone else, it smell so bad. (Ms. Eda)

Based on the numbers of people killed, there was a large amount of deceased individuals in the area. A typical ritual in Japanese culture is to cremate the deceased, resulting in vast numbers of cremations and ashes being produced immediately following the bombing. Many of the family caretakers used the available cremated ashes, with the hope that it would assist in the healing of wounds.

> No medicine, nothing. Just what do you call, natural healing…so my mom stole bones and crushed up like flour and put on my face…you know, the bones, the human being bones absorbed a lot of pus. And that's why my face is not so bad…But you know, my mom did it for me. (Ms. Brown)

> And my mother went and got some of those ashes and put it on my burn. Just to dry it out and heal it. And I thought it was a very strange thing to do, but you know, I had faith in my mother. I had faith in my sister and what they were trying to do. (Mr. Ota)

Information from the survivor's narratives correlates to what had been read previously about the response efforts: many healthcare providers were victims themselves and unable to assist. Of those that were able to render aid, minimal supplies were available. This often led resourceful family members to care for the ill and use nontraditional mechanisms of care to assist in healing. Some mentioned the toll that providing care for the injured took on their caregivers:

> Every day my older sister and my mom took care of me. (Ms. Brown)
>
> I think it was very hard for them [mother and sister] to look after me that way. (Mr. Ota)
>
> She died, because what do you call it, she had too much stress. You know, she was taking care of us 22 hours a day [speaking of a volunteer who worked at the orphanage after bombing]. (Mr. Fujita)

From the environmental context of destruction, impacts on holistic health and well-being and the systems to respond have been evaluated. In the face of adversity, themes of surviving emerged from the narratives and will be further explored.

Themes of Social Factors: The Surviving Perspective

Surviving: Stigma

One theme in the surviving spectrum is the stigma that many of the *hibakusha* faced; many endured discrimination or felt a prejudice against survivors. Participants discussed the uncertainty that the general public, some medical providers, and potential spouses had regaining the status of those who were exposed to the atomic bomb. For example, the “unknown” was highlighted in the following comments:

> There was a prejudice against the survivors. Instead of sympathy or compassion, I think they avoided us. Many of them. Basically because of the unknown. (Mr. Yonokura)
>
> The way the survivors were treated in Japan, you know, bad. Not exactly outcasts, but close to it. (Mr. Yonokura)
>
> If I can get by without telling them [that I am a survivor], I rather take that. (Ms. Eda)
>
> So some people who are survivors, for some reason they have to live in other prefecture [county], they get kind of prejudice because they don’t know exactly what is survivors or what is survivor’s sickness. They think its kind of contaminates through touching or through marrying. (Ms. Eda)

The rituals of marriage in Japan brought some discrimination to individuals who had been exposed to the atomic bomb. In Japan, marriages were often arranged and females were expected to be healthy, conceive children, and bear her husband a male son. The potential unknown effects of radiation on women's abilities to conceive and carry healthy children were particularly worrisome for some.

> Nobody gonna marry you. (Ms. Fujimoto)

> Sometimes when you marry, they will check all their record. And then, if you Hiroshima there ask were you there at that time or they will ask. And some people may lie or with knowing it could affect their marriage or something. (Ms. Eda)

It was interesting to note that several participants equated the experience of being an atomic-bomb survivor as someone who had Human Immunodeficiency Virus (HIV) or Acquired Immune Deficiency Syndrome (AIDS).

> But I can relate it with AIDS…Why don't you go home [describing phone call she received once her son was sick, in the time when AIDS epidemic was just coming out and people were worried about contagious]. (Ms. Fujimoto)

> So when I talk to the people with AIDS and HIV, they seem to have a similar experience…have a lot of things in common with patients with AIDS…I was in the position to listen to my parishioners and their loved ones, partners, who died of AIDS and they had similar things as I witnessed half a century ago in Japan. (Mr. Yonokura)

From the survivor's narratives, discrimination and prejudice against them was a recurrent theme, and a general lack of knowledge of radiation effects led to others placing a stigma on survivors. This discrimination only adds to the psychological burden that these individuals must carry. So many of them only want to be recognized as what they consider themselves to be:

> But I am just like other people. (Ms. Eda)

Surviving: Anxiety

Another theme among those who are surviving is the general worry or anxiety of their own health or the health of their family. This fear spanned the spectrum: from being worried about any time they had to cold; to the paralyzing fear that if she had children, they would be abnormal, so she never had children.

General concerns of their own health can be noted in the following:

> But I'm really concerned about my health, more I get older. (Ms. Eda)
>
> Whenever I even caught a cold or got sick, I thought to myself, this may be it. You know, I may not make it through this time…so I was always prepared [to die]. (Mr. Yonokura)

Anxiety about other family members was also an issue for some participants.

> But I do worry about my children and grandchildren. (Ms. Fujimoto)
>
> Even now, when my kids get sick, I think about it. (Mr. Yonokura)

Concerns of having children with abnormalities were also mentioned.

> I was really, didn't want my daughter to have a baby. Til I see it I could not…you know, easy feeling. Is he okay? Is she okay? How it's going to work. Now he looks so healthy, but is he really well? Those kinds of fears, I don't think you can take that away. (Ms. Fujimoto)
>
> She told me not to have a baby [*in utero* survivor describing her mother's concern for her health and genetic problems---survivor never had children]. (Ms. Eda)

Clearly, for some of the survivors, anxiety about their health or the health of their family was a driving force in their lives. Some were more resilient and were quickly able to move beyond the concern and worry, while others tended to regularly shift towards anxiousness. This anxiety played a significant part in some of the participants' lives: one

participant had general concern or anxiety about death every time they had a cold, another did not have children because of the concern that her mother had for her ability to reproduce a healthy child.

Surviving: Mistrust

For some of the individuals residing in the surviving mode, a general mistrust of doctors and the government was voiced. Part of this mistrust was largely restricted to the time period immediately following the bomb, yet some mention of current mistrust in the lack of information supplied was a concern.

In regards to the time period shortly following the bombing, the following statements were given.

> My mother refused to go to have a check-up [*in utero* survivor speaking of her mother's distrust of the government and the ABCC]. (Ms. Eda)
>
> There's many resentment in Hiroshima because of America is established that center [ABCC]. (Ms. Eda)

More current mistrust stems from concerns about doctors providing information on radiation effects, to the government's current worker protection standards and nuclear waste disposal.

> We don't know! Because nobody tell us what's gonna happen. (Ms. Fujimoto)
>
> [To the doctors about her worrying about her children/grandchildren] You don't tell me anything, you don't know, don't tell me. (Ms. Fujimoto)
>
> We didn't know exactly what kind of effects uh, these workers were going to have. The government really didn't tell them what to expect [referring to workers exposed to radiation from the national conference on radiation survivors]. (Mr. Yonokura)

> In spite of the assurance the US government has been giving us, they still don't know what to do [regarding nuclear waste disposal]. (Mr. Yonokura)

For these survivors, a general mistrust of the information that is provided by the doctors and the government is concerning to them and a feeling of mistrust is evident.

In summary, surviving has been defined as the ability to continue to exist, despite adverse conditions. Three main themes emerge from the narratives that fit into the surviving category: the stigma survivors carry, anxiety about their personal health and the health of their family, and a general mistrust of the doctors and government in various aspects related to atomic bombing. As previously discussed, all participants have clearly physically survived the bombing, but based on time and their current level of resilience, some participants may stay in the survival mode on the spectrum. This is generally marked by a concentrated focus on the past and living in the "before or during" bomb time frame in their lives. We shall now turn our attention to emergent themes within the thriving category.

Themes from Philosophical Factors: The Thriving Perspective

Thriving: Overcoming

As described previously, for some participants, they overcame their experience and are now thriving. As previously defined, thriving is the ability to prosper or flourish, despite adverse conditions. Some participants showed a real ability to thrive, taking their experiences from the bombing and transposing their experiences unto lessons on how to live and be strong. Examples of these life lessons include the following:

> It's past experiences that you hurt in this world make me more stronger. I have to leap up and tell them what they did to the human being. (Ms. Fujimoto)

> I learned to live a day at a time. (Mr. Yonokura)
>
> She was strong, maybe that is why she could survive [*in utero* survivor describing her mother]. (Ms. Eda)
>
> I went through a experience, but still, I can talk about it and laugh about it now. (Mr. Fujita)
>
> Know who you are and follow your heart. (Mr. Tanemori)
>
> But, I got a good life, I got a better education than the other brothers and sisters in my family, because of my unfortunate, you know, thing…You know, I am happy inside. (Ms. Brown)
>
> Live for the benefit of others. (Mr. Tanemori)
>
> I say the past is the past. The only thing you have to deal with is the future. You don't, you know, take with you everything from yesterday, or 10 years ago. So you know, I went through a lot. I lost the whole family, my wife passed away because of leukemia. But like I say, they are gone and I am here. (Mr. Fujita)
>
> I just tried to lead a normal life…I felt I had to make my own life, and I do the best I can. And that is the way I approached everything. (Mr. Ota)

Across all survivor narratives came these suggestions for overcoming the tragedy and adversity of the bombing and moving beyond it. Evidence of resilience could be pinpointed at different times during each of their stories, and the ability to overcome during times of adversity was universal for all.

From my conversations with the participants, several of the survivors displayed signs of thriving and resilience when talking about moving on from the bomb. These individuals focused their time, energy, and attention to other efforts. From serving as a pastor and counseling others during times of need to working to protect and save

animals, these individuals used their personal experiences from the bomb to benefit others in various ways.

> But I try to save animals. You know, animals can't talk. Human beings can do very mean things to animals. So, I spend my extra money to the animals. That is my treasure. (Ms. Brown)
>
> So now, I am a better counselor because of what happened to me. (Mr. Yonokura)
>
> And I thought this would be a good way to contribute to the community, society, to see and save the record [survivor explaining why he participates in biennial examinations as a "guinea pig", to add to the knowledge of radiation exposure]. (Mr. Dairiki)
>
> Live for the benefit of others. Then we all benefit. (Mr. Tanemori)

Two individuals spoke of their desire to become United States citizens following the war. "Now, I have become a proud American citizen by choice" (Mr. Tanemori). Three other participants served in the United States military, even after they experienced the war in Hiroshima, with both losing family members. Of those interviewed, two became deeply involved in religion and used their experiences to help others.

Thriving: Forgiveness

One characteristic that was exhibited during periods of high resilience included the ability to forgive. Forgiveness was a foundational aspect in those individuals who chose to become US citizens and those who joined and served in the United States Military, particularly after they and their families had endured the wrath of the military during the bombings. Additionally, forgiveness was discussed by Mr. Tanemori in the following:

> Lerning to forgive, that is the greatest gift I have found. It's a relationship I find with the Divine…we can choose to forgive, the ultimate demonstration of love is forgiveness. (Mr. Tanemori)

Others eluded to forgiveness by stating that they had overcome and actually felt lucky:

> I think, in spite of my injury, I am pretty lucky. (Ms. Brown)
>
> I became pretty good with sports…You know, I still feel lucky. (Mr. Fujita)

So, although they had experienced a tragic event, their souls had allowed forgiveness to enter, allowing them to change their disposition about their lives and work for the betterment of others. It is one thing to survive the adversity surrounding the atomic bomb, yet to thrive beyond the adversity and work towards the betterment of the society as a whole is a unique gift.

Thriving: Peace Activism

One universal theme present throughout every single narrative was the initiative to work towards the abolition of nuclear weapons and to promote peace. This was one of the ultimate displays of transcendence, as the survivors had moved beyond their experience and wanted to spare others of having to find themselves in similar situations. One aspect of the peace activism was the drive to tell their story so others would see the damage that atomic bombs cause.

> Some want to leave their story to the children or to others to, I guess, to make them understand, shouldn't happen. (Ms. Eda)
>
> I personally don't want any other human to have to go through what I went through. Mine is enough. So that's one reason, you know, that's the main reason I tell you my story. (Mr. Fujita)

> We just hope and trying to get the message out that the atomic bomb is just horrible, its just like a poison gas…and its really sad that they can realize that the harm they do. (Mr. Dairiki)
>
> I would not want anyone to go through what we went through…It was a pretty horrible experience. (Mr. Ota)
>
> Everybody is getting older and older and if we die, nobody knew. (Ms. Fujimoto)

In addition to telling their stories, many spoke out about their position on violence and war.

> No one has a right to kill, you know, so many innocent people. So, we just have to stop. (Mr. Yonokura)
>
> Respect for all living. No violence…You never rejoice for war… Promote peace through forgiveness. (Mr. Tanemori)
> Any kind of reason, I just oppose war. This one bad, that one bad. I don't care. Don't fight!...I oppose the war. For any kind of reason. I can't stand that…Anything. Anywhere all the way, lose their life. You know, so then, you have to be diplomatic, you have to talk, you know. (Ms. Brown)
>
> I would not want any of these nuclear weapons to be used. I would hate to see something like that happen again. Why should any person, whether they be the aggressor or the other end of it, why should they be faced with that? There's no reason for that. I just hope that nothing like that ever happens. (Mr. Ota)

For many, their life work and mission revolved around spreading their story and experiences to help spread the message that nuclear weapons were not the answer or solution to any disagreement between nations or groups. Many attended peace vigils, spoke to various groups, and participated in anniversary activities to promote peace among all.

Summary

In closing, Chapter Four has presented the sample, given a description of the eight participants and introduced them in vignettes. A thorough review of the ethnographic and interview data was provided. The thematic structure for “I am a Living History” was delivered and includes the literal destruction of the bombing, which resulted in the desecration of holistic health and the professional response system. The entire narratives were bound in the context of Japanese culture and were explicated based on Leininger’s Culture Care Diversity and Universality Theory. Two attitudes or orientations toward living resulted from the bombing: surviving and thriving, with resilience serving as a lever, allowing for fluid movement over time throughout the spectrums. Specific themes within the concepts of surviving and thriving were introduced. The following chapter will present a discussion based on the research findings.

CHAPTER 5

DISCUSSION

This chapter will provide a discussion of the research findings, particularly as they relate to existing published literature, and consider implications for nursing practice and research, disaster response, and policy.

Chapter Four provided the groundwork upon which these discussions will take place. In that chapter one aspect of this study's purpose was achieved: in the stories of individuals with first person knowledge of the events of August 1945, the experience of atomic bomb survivors was revealed. The three main research questions posed in Chapter One were answered: First, what was the experience of surviving an atomic bomb release? Second, for participants who were *in utero* at the time of bombing, what were the stories they have been told about the event? Third, what impact did the atomic bombing and/or stories heard have on survivors? This was accomplished by conducting a qualitative descriptive study employing elements of narrative analysis, oral history, and ethnography to gain knowledge.

Eight survivors meeting inclusion criteria were interviewed. All eight were exposed to the bombings in either Hiroshima or Nagaski; only one of the eight was *in utero* at the time of bombing. All individuals currently reside in the United States, predominantly in the San Francisco Bay and surrounding areas.

Out of those interviews and narrative analyses, a thematic structure was constructed to illustrate the concepts, themes and relationships found in the data (see Figure 20 on page 139). The schematic includes the literal destruction of the bombing,

which resulted in the desecration of holistic health and the professional response system. The entire sum of the narratives was bound in the context of Japanese culture. Chapter Four findings were organized and explicated according to a framework based on Leininger's Culture Care Diversity and Universality Theory (see Figure 2 on page 12).

Survivors interviewed presented perspectives illustrating a continuum of living in the world after the bombing, anchored by two poles; surviving and thriving. An existence at the surviving end of the spectrum was marked by focus on stigma, anxiety, and mistrust. In contrast, those who anchored in thriving lived their lives with an emphasis on overcoming, forgiveness, and peace activism. While every person tended to orient toward one pole, each moved along a fluid emotional path between the two extremes. Certain life events, such as Mr. Fujita's brief encounter with road kill, can initiate movement from one pole to another: in Mr. Fujita's case, moving from a thriving state of being toward a survival mode. In this instance and others, resilience serves as a lever, returning the individual to a state of equilibrium, or toward optimal thriving.

In Chapter Five, a final purpose will be accomplished when the words of the survivors will be transformed: evaluated in the context of current literature, and used to pose suggestions for improved practice, education, policy and research.

Comparison of Findings and Review of Literature

Culture

As this research was initiated, it was anticipated that culture would be reflected in every aspect of the survivor narratives, and the findings reflect that this is true. Culture

was embedded throughout all layers of the thematic structure. Specifically, the cultural issues of maintaining harmony, living within the cultural expectations of the time, and having a deep responsibility to family were evident. For example, Mr. Tanemori referred to his sister's obligation to "the bowing dance" as a way of submission to the conformity of the community. A deep commitment to family was evident in many transcripts, with an emphasis on birth order. Most notable, for example; Mr. Tanemori referred to himself as "proud number one son of Tanemori" throughout his entire narrative. Mr. Dairiki spoke of himself and his father going to visit an ailing grandfather in Japan despite turmoil in the world that was limiting travel for many people, because both he and his father were "first born son".

Another prominent topic of discussion was the Japanese custom of prearranged marriage. Several participants, both male and female, talked about the pressures on women who were exposed to the bombings and their diminished prospects for marriage. As societal pressures required that women be attractive and bear healthy children, particularly males, some women hid the fact that they were survivors from potential mates. Women who were disfigured from burns or had the threat of potential abnormal defects among children were represented as less than ideal spouses. One participant reflected on the societal pressures of marrying very poignantly. Ms. Brown, who suffered significant burns to her face, neck, arms, and legs, spoke of the need to "look pretty" so that women could get married and be supported by their husbands. Following her considerable injuries and scarring, her mother had such concern for her future that she committed to ensuring that Ms. Brown had a good education, so she

could get a high quality professional position and support herself, in the event she did not get married. Ms. Brown's education was given a higher priority than that of her other brothers and sisters even though males education usually took precedence.

In earlier chapters, the common Japanese custom of parental caretaking was discussed. In my research, participants did not discuss this tradition; however, the narratives included evidence of respect for elders. Mr. Dairki and his father showed reverence to his ill grandfather by returning to Japan to visit prior to the bombing of Pearl Harbor. Additionally, Mr. Tanemori even today holds his father's philosophies in high esteem, often reciting the patriarchal words of wisdom. This ideation of respect and honor for elders coincides with Leininger's (1995) theory of culture care, where kinship is an integral part of the social system; honor and pride toward elders is a dominant value.

The Asian culture gives deference to the elderly by honoring and respecting them. This was clearly evident in the interactions I had with Ms. Geri Handa. In her work and in her speech, she displays high regard for the elderly and their wisdom. This is evident in her statement, "It is an honor and privilege to serve the *hibakusha*" and in her respect for tradition. One mechanism of showing reverence and honoring the survivors is maintaining the societal norms of being properly introduced by a trustworthy liaison. Ms. Handa took the initiative to facilitate introductions between the research participants and me. Having her serve as my local contact person enabled my access to the group and I was well received by all participants following her introduction.

Cultural Studies

Cultural studies as a discipline concerns itself with the examination of various representations of a society and power structures within that society as revealed through discourse (Hall, 2007). Further, Baez (2007) discusses the discourse between popular culture and language, specifically how we talk about our experiences in the world. The ways in which the *hibakusha* used language played a central role in their construction of the meaning of their atomic bomb experience and how it was embedded in the Japanese culture. As the following sections illustrate, these *hibakusha* narratives reflect the principles of Hall and Baez.

Representation

The atomic bomb event represents a pivotal point in the lives of *hibakusha* who participated in this research. Every participant broke their narrative into three parts: (1) before the bomb, a time of innocence; (2) during the war and the bombing, a time of chaos and destruction; and (3) after the bomb, a time directed towards striving for the ideal of peace. The majority of the time spent telling their stories was devoted to parts two and three. While participants did not dwell on the innocence of their childhood, it was mentioned and many times implied. For example, Ms. Brown spoke of playing on the school playground the morning of the bombing, carefree. Mr. Ota described the typical daily duties of working as a student on the morning of the bombing, engaging in his routine of beginning another day's activities. But this time of innocence was not where people stayed. The bulk of their narratives were divided between two time periods: during the war and the bombing, and after the atomic release. Those periods

during the bombing and after were times of terror, peril, loneliness, fear, and loss. The way in which the *hibakusha* broke their narratives into time periods of before, during the war and after the bombing is consistent with previously documented survivor stories, such as the memoir of Sadako Teiko Okuda (2008). Representations of Japanese culture revealed by my participants varied according to the segment of their story.

It was the atomic bomb that was the pivotal point that distinguished the two separate representations of society: during the war and after. During the war there was a sense of national pride, a belief in victory, and a false sense of security. There was also a feeling of national unity, with everyone making equal contributions to victory. Those who were perceived as weak were ridiculed, such as Mr. Tanemori's father.

> "…the only man in seven blocks…who was not a soldier…all my classmates point their finger at me, 'Takeshi, what's wrong with your daddy?'…almost every day, I had to defend my father…finally saying 'my father is so smart. The government needed him at home.'" (Mr. Tanemori)

Wartime society was also very difficult. Food shortages resulted in rationing, school children were forced to work in agricultural fields, and students were trained for military service. Ultimately, none of the participants found benefit from the conflict and danger of life during war and none are willing to risk the potential devastating outcomes of another atomic release.

Representation exists on a societal level as well. In many ways, the city of Hiroshima is still holding on to the bombing event. Peace Boulevard is the central street that winds through the city. The largest hotels are located here, the Boulevard is lushly landscaped, and it is the major artery that links the train station and the Museum. As people travel through the city everyday, they have a continual reminder of peace; not

only the message of peace, but the repercussions of war, as evident by the A-bomb dome. Every year ceremonies mark the anniversary of August 6. Speeches are given by prominent dignitaries, music is provided by various bands, and the annual Mayor's address is given as part of the anniversary ceremony. RERF sits atop a mountain peak overlooking the city, serving as a perpetual reminder of the untoward effects of the bomb.

The atomic bomb representation extends beyond the city and infuses the psyche of the society's members. This idea can be illustrated in the following hypothetical situation. If a person living in the United States develops cataracts, most people will associate the medical condition with aging. However, if an elderly person develops cataracts in Japan, many individuals will contemplate whether the atomic bomb event is the primary factor in the development of the condition. With advancing age, the development of medical problems is typical and expected; yet for survivors, the notion that medical conditions are associated radiation exposure continually pushes their focus back to 1945. The constant reminders and mental linkages between illness and the bomb have the potential to redirect their emotional state from thriving to surviving. This is illustrated in the thematic structure diagram (Figure 20 on page 139).

Even though people know that they can never return to the innocence of young childhood, what they are seeking now through activism is a vision of a society that is peaceful. In modern day Japan, there has been movement towards peace, reflected in their absence of an organized military; but that willingness to relinquish military force is

not shared by the rest of the world. The vision of tranquility held by the *hibakusha* is their representation of a world that they want to share with other people and nations.

Power

Another facet of cultural studies is an investigation of power being negotiated in representations. Power can be explored from various angles; including gender, race, and social position, to name a few. In this study and within the cultural context, power can be evaluated most poignantly in two of Leininger's dimensions: kinship and social factors, and political factors.

Diminished Power

Within kinship and social factors, the stigma of being a survivor serves as an exemplar. Misconception and fear of contagion about radiation exposure and its long-term consequences diminish power of the survivors. Once identified as *hibakusha*, individuals were marked with disgrace within certain communities; most obviously, the marriage potential of the women was diminished. Once a woman was identified as a survivor, her position in society was lessened because of the perceived risk of delivering a malformed child.

Another instance of diminished power among survivors related to the fear of contagion, which could result in self-imposed or society driven isolation. When in isolation, a survivor has no voice, no opportunity to speak out about their experience, and their individual perspective on an event is lost. This could potentially lead to an individual being fixed in survival mode. Ms. Fujimoto frequently spoke about stigma,

anxiety, and mistrust in her narrative. She lives today very much in the shadow of 1945; she continually worries about the health of her children because she links medical ailments to radiation. In the immediate post-war period, she was required to hide her status as a survivor for a period of time. “First husband didn’t know [I was exposed to atomic bomb]. And then, when he found out, he told me, because we had a restaurant, ‘not allowed to talk’.” Isolation and the inability to speak out about one’s experience diminishes power.

Through isolation and silence about their atomic bomb experience, survivors also diminish the power of research capabilities. When one does not confess to being a survivor, participation in medical evaluations is lost, which weakens the power and completeness of findings for medical research.

A reduction in power is also evident when evaluating the esteem among genders in the narratives. In traditional Japanese culture, men have more power than women. This was apparent in Mr. Tanemori’s narrative when he described the displacement of his sisters to the countryside. “My two sisters were taken out from the city, moved to the countryside…because they were standing in the way. They were excess baggage.” In the Japanese society, being male had its privileges, with power being largely based on gender roles. From the narratives, diminished power was observed on both an individual and societal levels.

Enhanced Power

One area in which the *hibakusha* negotiated power was political. Survivors utilized their unique experience of being atomic bomb survivors as a platform to

advocate for the abolition of nuclear weapons. Throughout all the narratives, participants spoke about promoting peace activism. Many discussed being willing to share their story so that others would never have to experience nuclear warfare. As individuals who endured over 63 years of sequellae resulting from the bomb, the *hibakushas'* platform is an impressive representation of global, universal nuclear disarmament. To be in the presence of survivors and hear their stories is a powerful experience; their advocacy is credible because it comes from first-person perspective.

A strong representation of power exists as the *hibakusha*, RERF, and the cities of Hiroshima and Nagasaki join together to advocate for peace and the abolition of nuclear weapons. The city of Hiroshima and Nagasaki are deeply committed to the cause of peace; offering peace study classes, holding a peace memorial ceremony every year on the anniversary of the bombing, and sending a peace declaration to every country in the world annually on August 6. The most recent 2008 Peace Declaration from the Mayor of Hiroshima is located in Appendix F (City of Hiroshima, 2008). The mission of RERF as explicitly stated on their website and all publications is to study the effects of radiation exposure for peaceful purposes (RERF, 2007). As evident from these activities and public statements, there is power in the *hibakusha* who speak out about their atomic bomb experience: their voices are heard around the world.

Increased power on an individual level is noted in many of the narratives. Ms. Brown, after suffering extreme scarring, had external support from her husband who told her, “Sonoko, [your appearance and scarring] is not your fault. And you do not need to [feel] shame.” This support enabled Ms. Brown to develop a healthy psychological

disposition about being a survivor and allowed her to move towards thriving and get involved in peace activism. Additionally, Ms. Brown's encouragement from her mother for education and the ability to support herself was empowering for Ms. Brown.

Representation of the power that one society can have over another is observed in the narratives. Despite its horrible effects, the bomb represented a means to end the war; this was discussed by many participants. Mr. Dairiki described this philosophical belief in the following: "For people in Japan…it [the bomb] ended the war very quickly. So we suffered and you've killed all the people, but we were glad to see the war end, just like anybody else." Beyond a vehicle for ceasing the war, representation of one society "winning" against another was found in the fact that several participants either 1) became United States citizens, representing the country that won or 2) fighting in the United States military, the service that introduced the annihilation to their homeland. While I did not specifically explore that aspect of the narratives with the participants, that phenomenon of joining with the enemy; becoming a citizen, fighting in their military, these questions merit further investigation.

Time

The factor of time was identified as a considerable issue in this research project from its inception. Comments by various persons expressed concern over the ability to accurately collect data about an event that occurred over 63 years ago. Previous literature about flashbulb memory by Schreuder and colleagues (Schreuder, Egmong, Kleijn, & Visser, 1998) suggested that replication of a vivid, memory of a traumatic event can occur many years after an event. Findings from my study strongly support their

previous conclusions. Participants gave precise descriptions of bombing-related events and their emotional reactions, including emphasis on sensory perceptions. For example, Ms. Fujimoto, when referring to agonizing sounds, crying and moaning of those who were suffering reported, “[those voices], I will never take it out from my ears.” Other participants described in great detail the smells, visions, feelings, and sounds they experienced; including Mr. Dairiki, who recounted seeing a ghostly and terrifying vision of a woman walking past his shelter with skin dangling from her arm. As I sat and watched survivors cry, tear up, shake, and become visibly disturbed when talking to me, I was confident in their recollections. Many participants were reliving the experience as they told me their stories. Therefore, this research supports Schreuder and colleagues contention about the existence of flashbulb memories.

Beyond their memories, many were still dealing in the present with complications associated with the 1945 bombing. When describing the chronic effects of significant burns on her mother’s life, Ms. Eda said “even at this time, when she wash her face, it still little bit feel sensation.” Other participants have dealt with cancer, leukemia, vision problems, and various other issues in recent past, altogether keeping the memory of their bombing experience very much alive within them.

Time and the bombing intersected in a personal way that gives the *hibakushas’* stories urgency. All participants talked about their ages at the time of the bombing. Many told their story in chronological order; some starting in 1941, four years prior to the bombing, in order to provide context. Time was a crucial part of their cataloguing the event. There was also urgency involved in telling the story while it could be told. Several

hibakusha spoke of the need to share their experience, before all of the first generation of survivors died. “Most of the survivors are dying out,” claimed Mr. Yonokura, while Mrs. Fujimoto observed, “Everybody is getting older and older and if we die, nobody [will know].” Clearly, the survivors recognize the limits of time on their capacity to ensure that another atomic bombing does not happen again. Many feared that once they died, their stories would be lost.

Impact of the Bomb, 63 Years Later

Much literature has discussed the history of the war and its immediate effects. These include public records as well as works that have been cited in this dissertation (Kort, 2007; Selden, 1989; Trumbull, 1957). This also includes artifacts that were collected in Japan and California as a part of ethnographic data (Making Peace, 1995; NJAHS Newsletter, 1995; Tanemori, 2008). A primary way of measuring the accuracy of my participant’s recollections is to look at the consistency of what they told me with what has been previously recorded by historians. Based on the literature reviewed, the *hibakushas’* accounts from this study are consistent with existing historical accounts of the atomic bombing event.

Not surprising, all participants spoke of the horrible conditions surrounding the bombing itself. Fire, death, burns, and the lack of food and water were all included in the discussions, with one participant summing it as “It was *really hell!*” (Ms. Fujimoto). Several referred to the fires: “Just escape from inferno” (Mr. Tanemori), and confirmed by Mr. Ota, “It was virtually an ocean of fire.” Complete destruction was frequently reported, as evident by Ms. Fujimoto describing that her and her brother had to be

pulled out from their house that had imploded with the bomb. Several participants discussed the lack of ability to move for days to months as a result of the injuries the sustained. Loss of life was frequently reported, especially among family members. “Destroyed my family…Lost 6 members of family” (Mr. Tanemori) and Mr. Yonokura described losing his mother and sister when he was six years old. The recollections of these participants were consistent with the historical accounts; further, in the accounts from all other participants, there was no inconsistency with what has been previously documented in the historical records of known events.

The long-term impact the bombing had on survivors was also consistent with published research on health effects of radiation exposure, which was presented in Table 1 (Ichimaru et al., 1991; Kambe et al., 2006; Kodama et al., 1996; Neriishi et al., 2007; Preston et al., 2007; Shimizu et al., 1991). Some literally are facing the consequences of the bombing as they manage long-term effects such as cancer, leukemia, and vision disturbances. Beyond the physical aspects, the psychological impact can be long-standing. Ms. Eda’s mother having sensation in her face every day when she washes it is a continual reminder of the burns she received. “Even now, when my kids get sick, I think about it,” reported Mr. Yonokura. He further describes how he is always prepared to die; whenever he got a cold, he said, “this may be it [I might die]”. Ms. Fujimoto noted that the a-bomb “lasts so many generations, I think”. And when referring to the bomb, Mr. Tanemori notes that “it is real”, not in past tense. The impact from the bomb had far-reaching implications for many of the survivors, as they currently

deal with the after-effects, both physically and psychologically for centuries following the event.

Disaster Response

As discussed in Chapter Two, historical accounts have recorded that the Japanese disaster response was thwarted based on the attacks on Hiroshima and Nagasaki. Mr. Dairiki, who was 15 years old at the time of the bombing, was very aware of accounts of the numbers of hospitals, nurses and physicians lost in the bombing; his narrative is consistent with the published historical record. Other participants confirmed the lack of availability of medical personnel. Ms. Fujimoto noted that “there was not enough people to help”, with many of the healthcare staff being victims themselves. With the lack of professional care staff, family members had to resort to caring for the injured the best they could. Ms. Brown noted that her mother and sister cared for her.

In addition to lack of personnel to assist in providing care for the injured, treatment options were also limited. Many participants spoke of the lack of medications or supplies. In particularly moving accounts, Mr. Ota, Ms. Brown and Mr. Dairiki described home or folk remedies that were used, including mashed potatoes and cremated ashes applied directly to wounds to absorb pus and fluid. I was unable to cover any previously published documentation of folk remedies being used; therefore, this study contributes to the knowledge of the medical response following the bomb Although no previous works were found, these participant’s narratives are consistent with Leininger’s theory of culture care regarding the folk system of health care. Home treatment practices are generally not acquired by formal educational program, but are

obtained by apprenticeship or knowledge passed down from generation to generation through the social structure. The utilization of mashed potatoes and cremated ashes are consistent from a theoretical perceptive and serve as exemplars of folk system care.

The loss of healthcare providers and lack of adequate resources during a disaster are not uncommon. Previous disaster events have resulted in casualties among healthcare personnel, including most recently the September 11, 2001 terrorism attacks, and inadequate resources were perhaps the hallmark of the response to Hurricane Katrina. As emergency response plans are established and updated, plans for staged personnel activation should be critical components of readiness practices. Regardless of whether the disaster was human-made or naturally acquired, a staged response with expanded personnel to cover those who may be victims is necessary. For example, preparedness plans for pandemic influenza estimate a 40% loss of personnel, due to illness, taking care of ill family members, or fears/concerns of becoming ill (PandemicFlu.gov, 2009). It can be anticipated that another nuclear attack would produce similar results, with mass numbers of personnel becoming victims and the need for additional reinforcements substantial. Similar plans for reinforcements in supplies would be required.

One observation that the survivor narratives reinforced was that locating strategic resources in one or two central locations that are major cities is not necessarily prudent. Although in many ways, major cities provide easier access and greater abundance of resources, they are also likely to be the first targets. So, in the case of Hiroshima, that was a major military base, one bomb dropped essentially crippled response capability.

From the participant narratives and collected accounts, one major lesson can be learned about public health messages: concise, clear health related messages are remembered and followed. And people don't necessarily need a rationale. The primary example of this was that in written accounts, historical records, and participant narratives, one message that was repeated over and over again was that they were told, "Don't drink the water." When people were asked, they could not say why they should avoid it. But they all remembered with great clarity the message. The implication for our modern age is to prepare well in advance concise and clear public health messages and deliver them often.

Survivorship

In Chapter Two, Peck (2008) offered six experiences in the process of survivorship. From my research, all participants fit into the first five experiences: (1) confronts mortality; (2) experience alienation and isolation; (3) has need for support; (4) searches for meaning through lived experience; and (5) experiences a need to reprioritize their lives. The final phenomenon noted by Peck is continued vulnerability; in my research this experience was only acknowledged by participants part of the time. I would propose that all survivors had continued vulnerability to a certain point, but some no longer experienced it as a primary concern. Based on my research, I suggest that a portion of survivors still continue to experience acute vulnerability (i.e., physical ailments such as cancer or leukemia, and/or psychological vulnerability), while others have largely overcome their challenges and are thriving.

In another qualitative study looking at meanings of surviving Hiroshima and Nagasaki, Sawada and colleagues (Sawada, Chaitin, & Bar-On, 2004) identified nine themes that could be divided into two main categories: those connected to the experience itself and others pertaining to life afterward. My research only partially agrees with Sawada. In my research, only eight of Sawada's themes were ever mentioned; further, not all themes were mentioned by all of my participants. The most commonly discussed of Sawada's themes among my participants were memories of the attack, post war social action, physical and health concerns, and discussing family members killed. In my study, no one discussed good luck being associated with surviving the bomb. Indeed, the only mention of good luck among my participants was in reference to those who died. Ms. Fujimoto noted "I really do feel sorry for the people who died there [in Hiroshima on August 6, 1945]. But, they are luckiest one really. We are the one carrying the heavy burden [those who survived]."

Surviving versus Thriving

As evident from the survivorship literature of Peck, Little, and Sawada, partial evaluation of the approach to surviving has been explored. Although vastly different circumstances can surround a traumatic event, similar experiences can be noted in the process of surviving. Findings from this study further explicate survivorship and support the previous work. From the narratives, surviving and thriving poles of the continuum of being in the world emerged. As discussed and illustrated in Figure 20 on page 144, participants modes of existence ranged across a spectrum, with resilience serving as a mediator between thriving and surviving. Similarities and differences between the poles

emerged from my process of examination of the narratives. However, it is important to note that not all people existed purely at any one pole or the other all the time; instead their state of being was fluid, allowing for movement across the spectrum depending on what problems of daily living they were encountering. Ms. Fujimoto is very strong in peace activism and thriving takes precedence in her life. However, much of her psychosocial base is founded more in surviving: she expresses anxiety and concern for general health, her children and general mistrust.

Similarities exist among the narratives. For example, in the arena of peace activism, there was no noticeable difference between those who were surviving versus those thriving. All participants worked to promote peace and avoid nuclear weapon use. Age at time of bombing or location had no impact on resolution to participate in peace activism. Upon closer evaluation of those participants who resided predominantly in the thriving category, most of these participants shifted their focus, energy, money, and effort to other activities: saving animals, excelling at sports, studying religion, artwork, and serving in the United States military. It is possible that these efforts provide a constructive outlet for the survivors to release the negativity of their bombing experience and focus their efforts on worthwhile causes.

Qualitative Research

Robert Lifton (1967) provided the seminal work of “Death in Life”, which provided a qualitative exploration of survivors from Hiroshima. This present research supports Lifton’s work, particularly in regards to the concept of survivor guilt. As illustrated by participant Mr. Yonokura, this phenomenon was a significant problem for some

individuals. “I grew up with so-called survivor’s guilt…So why did I survive? I was the baby and the most vulnerable to radiation.” This belief was echoed by Ms. Fujimoto, “Even til this day, I cannot take the guilt of surviving.” Those who expressed concern about guilt were generally living in the world with a focus on the past and voiced more concern about anxiety, health issues, or mistrust

Hersey (1985) provided a glance of the atomic bombing from an individual perspective. In his book, the story was told within the context of family, an emphasis on sensory perceptions was evident, and the concept of prejudice was introduced. Hersey noted that non-*hibakusha* employers developed prejudice against survivors based on the belief that they were unreliable workers and prone to ailments. My findings are consistent with this previous work; every participant told their story within the familial grounding and highlighted sensory awareness in their recollections.

Lacking from the previous published qualitative work was an evaluation of the bombing experience from a health perspective. This dissertation research substantially expands the body of knowledge in the healthcare arena. Participants gave direct examples of the use of folk remedies, feelings of lingering psychosocial distress, public health messages that they remembered, and the value of creative endeavors in healing. All of these things will be addressed in the section on nursing practice to follow.

Theoretical Applications

Findings from this study confirmed that resilience theory holds merit in the evaluation of catastrophic disaster events and further illustrated concepts of Leininger’s Culture Care Diversity and Universality Theory.

Resilience

As discussed previously and highlighted in the thematic structure, findings of this research showed resilience acting a lever, facilitating fluid movement from surviving to thriving states of being among participants in the study. During periods of high resilience, a person might be in the thriving category; however an illness or another minor traumatic event could lower their resilience and bring them down into the surviving mode, as in the case of Mr. Yonokura. Every time he becomes ill, he thinks, “This could be it. I might not make it”. The encumbrance of carrying a concern of death with every illness brings with it a significant psychological burden, with the potential to lower an individual’s resilience, ultimately diminishing the person’s capacity to thrive.

Previous discussion of resilience introduces two of its essential attributes: good outcomes and adverse conditions (Deeg, Huizink, Comija, & Smid, 2008; Williams, Alexander, Bolsover, & Bakke, 2008). Every participant’s narrative had displays of adverse conditions. Many were significantly injured, lost family members (some lost all their family), and they told of lack of the basic necessities needed to sustain life: food, water, shelter, and medicine. Not only were the immediate adversities discussed, but long-term consequences were also mentioned in the narratives. For example, Ms. Eda described the anguish of having to walk by the trauma everyday “That [the building that had people melted on it, casting a shadow on the steps] was very close to our school, so we passed by every day… We couldn’t even imagine when they said people melt.” Mr. Tanemori talked about the adversity of being orphaned after losing six family members in the bombing, and the difficulties he and his siblings had trying to survive.

During our interview, he recalled a story when he was thrown an empty fishbone and called a beggar; while in his book, he discussed his attempts at planting sweet potatoes, only to have them stolen. The difficulties he and his siblings endured as they tried to survive speak to some of the long-lasting adverse conditions that many were exposed to following the bombings. Yet, in the same dialogue, Mr. Tanemori discusses his transcendence to forgiveness and exhibits signs of thriving, serving as an exemplar of the impact of resilience.

In the literature, Dyer and McGuinness (1996) discussed the various competencies, skills and abilities that individuals who display resilience can possess. Findings from this research demonstrate varied competencies among the survivors. For example, although most survivors exhibit desires to promote peace, other abilities varied greatly. Some participants displayed strong capacity for forgiveness; perhaps the greatest of these were demonstrated by Mr. Ota, Mr. Fujita, and Mr. Dariki, who moved to the United States and joined the military service. Ms. Brown chose to channel her time, energy, effort, and money to help save animals. Clearly, the spectrum of skills and abilities was vast and varied from person to person.

In a previous study by Felten and Hall (2001), environmental factors that influenced resilience were identified, including frailty, determination, previous experience with hardship, access to care, culturally based health beliefs, family support, self care activities and caring for others. Some of these factors were identified from the survivor narratives including; determination, access to care (or lack of), culturally based beliefs, family support, and caring for others. For example, several survivors spoke of

themselves or other family members caring for those who were injured or searching for lost family members. Determination can be illustrated by the following comment from Ms. Fujimoto, “[experiencing the atomic bomb]…make me more stronger. I have to leap up and tell the world what they did to the human being.” Previous experience with hardship prior to the bombing was not discussed in any of the narratives. Therefore, this research partially supported earlier work by Felten and Hall.

Ungar (2008) and Rajkumar, Premkumar, and Tharyan (2008) noted connections between resilience and culture, which were also found in my study. Traditional Japanese culture with its strong familial ties clearly provided stability that fostered resilience in a number of the survivors. For example, upon leaving his mother behind in the United States when traveling to Japan to visit his ill grandfather, Mr. Dairiki’s aunts and grandmother stepped in to serve as a surrogate mother. Greene (2002) also noted that resilience required looking forward, which was prominent in various transcripts. Mr. Tanemori illustrated this when he referred to looking to the future by incorporating the seven codes of the Samurai and “living for the benefit of others”. Future orientation was also clearly articulated when Mr. Fujita stated, “the past is the past.

Upon careful examination of all transcripts, it was interesting to note that those individuals who demonstrated lower levels of resilience and spent more time in the surviving category were those participants who were younger in age at the time of bombing, ranging from *in utero* to 5 years of age. Previous knowledge has ascertained that individuals exposed to radiation at younger ages are more vulnerable to medical complications, such as cancer and leukemia (Shimizu, Mabuchi, Preston, &

Shigematsu, 1996). Findings from my research could suggest that age may be a factor with resilience among the *hibakusha* as well; the younger the age at the time of adversity, the lower resilience may be. This concept warrants future research.

Culture Care Diversity and Universality Theory

A number of elements from Leininger's Culture Care Theory have already been discussed in this chapter: kinship and social, cultural, language and political factors. Environmental context was previous discussed in Chapter Four. Economic and technological factors were not discussed by participants, so they can not be addressed in this work. Education was addressed in detail by Ms. Brown, specifically the importance of her receiving an education as a counter-balance to her scarring. But beyond Ms. Brown, education was not discussed as a factor in recovery or resilience. Religious factors and health systems, both folk and professional, will be discussed in sections to follow.

Beyond this, two previously published works Finn and Lee (1996), with a Chinese population and Lundberg (2000) with a Thai group explored applications of Culture Care theory with Asian groups. In Finn and Lee's (1996) work, they identified specific factors of the cultural context that were particularly relevant to the Chinese population they studied. Findings from my study partially support their work. In accordance with their results, three main constructs: religious and philosophical, political, along with kinship and social factors were strongly evident among my participants. However, economic and legal factors were not addressed by any of my participants. Several themes in my research study coincided with Lundberg's (2000) work with Thai immigrants. A respect

for elders, family support, maintaining family relationships, gender roles and religious beliefs were all interwoven throughout my participant's narratives. For example, the stigma of being a survivor impeded women's potential for marriage, highlighting problems associated with gender. Interesting to note, none of the male participants in my study expressed personal experience with stigma as applied to themselves.

Religion and philosophical factors are central parts of Leininger's theory which have not received mention elsewhere in this chapter. With Shinto and Buddhism being the primary religions in the Asian community, religious rituals are fundamental dimension of Japanese culture. Central components of the religious beliefs were evident in the narratives. Some participants spoke of traditional Japanese spiritual beliefs, while others did not. Mr. Dairiki spoke of the Buddhist history in the country, his faith and practices, and funeral rituals. Mr. Tanemori talked about his time in an American seminary and referenced guardian angels, a concept distinctively Christian.

Many of the religious rituals are associated with death of a family member. Japanese funerals are typically performed by a Buddhist priest and rites are common on the anniversary of the death. The Obon festival marks the end of the ancestor's annual visit to their earthy home. An orientation to peace, harmony, and ancestor worship are facets of many Japanese's religious views. From the narratives, several participants highlighted situations that would hinder the traditional death rituals. A number of people completely evaporated and were denied proper death ceremonies. Others vanished, never identified, or family members were simply unable to locate their deceased. This could potentially cause distress to family members. Cultural sensitivity, including

religious beliefs, should be incorporated into response efforts, both for those living and for the deceased.

Philosophical factors are also an integral subset of the social structure. As mentioned previously, the *hibakusha* displayed a very broad worldview. Their narratives were not just about themselves or their family, but humanity as a whole. This expansive perspective focuses not on what is best for them, their family, or even their nation, but for the world. *Hibakusha* participate in peace activism as citizens of the world. This can be best illustrated by noting a comment from my Hiroshima field notes. When visiting the Peace Museum, I was struck by the presence of a clock; not just any ordinary clock with the date and time (Figure 21). This Peace Watch also included a countdown of the number of days since the first dropping of the A-bomb (23,042 days on the day I was there) and a tally of the number of days since the latest nuclear test (698 days). This message of peace is what the *hibakusha* want to share with the world and comprises a large portion of their philosophical beliefs.

Figure 21. *Peace Watch, Hiroshima, Japan. 2008.*
photograph by Amy Knowles.

Prior to embarking on this study, I met individuals who expressed concerns that Japanese citizens might not want to talk to me as a young American. I personally questioned if my hometown affiliation near Oak Ridge, where the bomb was built, would influence someone's decision to speak to me. However, these questions were unfounded; not only did the participants speak to me, but they warmly received me, welcoming me into their homes, inviting me to lunch, and shared intimate details of a devastating experience in their lives. Their approach to me was not as a Japanese person to a Caucasian American; they were coming to me as one citizen of the world talking to another, both interested in peace.

Implications for Nursing

Implications for nursing practice, education, research and public policy are evident from the research findings and will be discussed.

Nursing Practice and Education

The art and science of nursing practice has a critical role to play in all phases of disaster readiness and response. That includes knowledge and awareness of the environment, provision of direct care, and attention to psychosocial needs. The importance of all of these facets of nursing care was highlighted in the transcripts of my participants. There is no story that better highlights the need of comprehensive care than that presented by Mr. Tanemori. After resolving to leave Japan and come to America to avenge the loss of his family following the bomb, he arrived in Delano, California and was put into a migrant labor camp. After an episode of food poisoning, he ended up in a mental institution and spent time in isolation. It was during his time in the

psychiatric facility that he met Mary, an American nurse who changed his life. By his own account, it was the care and support that Mary provided that saved him, “melted my frozen heart”; allowing him to begin the process of healing that moved him towards thriving, forgiveness and living for others. Nursing care was an integral part in the recovery of Mr. Tanemori, and can be instrumental in assisting future disaster victims. The holistic approach engrained in nursing can address both the immediate needs and address long-term sequellae.

A key aspect of nursing practice and education is to develop a keen awareness of the environment; never is this more important that in disaster responses and radiological emergencies. Awareness only comes after education; training on radiation and contamination should be provided at all levels of nursing education. Intensive training offered to health care providers through the Radiation Emergency Assistance Center/Training Site (REAC/TS) provides an excellent foundational knowledge on the emergency management of radiation accident victims. As nurses are a key component to healthcare provider’s response to emergencies, it is anticipated that they may need to enter a contaminated area, handed contaminated victims, have an awareness of decontamination practices, and educate the general public on radiological emergencies. Beyond responding to a disaster event, nurses may receive patients who have been involved in a radiological emergency, requiring provision of direct care. Understanding the principles of contamination and decontamination, rendering care according to protocol, and providing additional psychosocial supportive care is essential. Nurses

must be knowledgeable about the basis of radiation science and contamination, in order to protect themselves, their patients, and other potential victims.

Based on the findings of this research, nursing practice can be improved in several areas. One significant consideration is the need for long-term psychological support following disasters and traumatic events. As previously discussed, some survivors still have psychological consequences stemming from the bombing that occurred 63 years ago. Nurses need to recognize the long-term psychological impact from tragedies and incorporate additional psychological support into practice. Participants spoke of suicidal thoughts or attempts, depression, shame, guilt, anxiety, stigma, and isolation. For some individuals, these sequellae were short lasting in duration and occurred immediately following the bombing event; yet for other individuals, they were still dealing with emotional distress 63 years later. Another consideration is that psychosocial problems can occur across the age spectrum. In this study, some participants who were the youngest in age at the time of the bombing had the most difficulties. The critical need for long-term follow-up and support cannot be emphasized enough. It is imperative for nurses to be prepared to anticipate psychosocial needs, equipped to render care, and capable of assessing when additional support is indicated.

Findings from this research highlight the need for culturally competent nursing practice when providing care to culturally diverse patients and populations. Health beliefs and concepts will vary among groups, which will ultimately influence the optimal health outcomes. For example, various cultures believe that women should have a more

passive role in society; a female patient of that particular culture may not ask questions or speak openly about their health issue. It is imperative that nurses are aware of specific aspects of a particular ethnic group when interacting with the patient. Many dimensions can impact the health beliefs of the population; such as the patient's kinship, political, educational, technological, or social factors. Utilizing Leininger's Sunrise Enabler to assess these factors can assist in gaining a greater understanding of the cultural foundation that influence the patient's health.

One public health issue arising from radiological emergencies is the ability to effective provide communication messages; both prior to event, as a part of readiness training, and following a disaster, as a way to communicate vital information. This is illustrated in the narratives by the *hibakusha's* focus on water.

In written accounts, historical records, and participant narratives, one message that was repeated over and over again was that they were told, "Don't drink the water." This exemplifies the notion that clear and concise health related messages are remembered and followed. This finding supports previous research and fundamental concepts of crisis communication. According to one communication expert, brevity is key: a communicator has 27 words to get their message out (R. Edmond, personal communication, May 11, 2007). Typical messages following a disaster event should focus on the crisis message response triangle, or the realm in which most questions are asked: what happened, what is the impact, and what is being done (R. Edmond, personal communication, May 11, 2007).

Nurses with their comprehensive knowledge of health, can be an ideal communicator, to craft the messages, show empathy, and respond to people's concerns. Yet, nurses are often not seen as public information officers. The public face in disaster is often a bureaucrat who may have statistics, but no empathy and no understanding of human psychology. A fourth perspective to consider adding would be what should the public do to assist/stay safe. The narratives from the *hibakusha* reinforce the need for planning concise health messages to deliver prior to and following a disaster event.

Beyond environmental assessment, psychological support, and communication practices, greater awareness of disaster nursing and its tenets needs to be recognized across the nursing spectrum. As previously discussed, "disaster" encompasses a wide range of events; from acts of terrorism, to natural disasters, or widespread disease pandemics. When disasters strike, healthcare providers are relied upon as critical infrastructure to respond and care for victims. It is imperative all that nurses be equipped with skills to effectively respond and render aid during times of peril.

Implications for nursing education are evident from the findings, and have similarities with nursing practice. Tenets of disaster nursing should be incorporated into all levels of nursing education curriculums to give nurses a basic understanding of preparedness, responding, mitigation and care practices during disaster events. From my personal work experiences in previous disaster planning positions, a greater emphasis was placed on biological or chemical terrorism, with less emphasis being put on nuclear attacks and radiation exposure. An improved awareness of radiation

exposure, management and safety will assist in a coordinated disaster response effort. Having a well-rounded curriculum that encompasses core principles of all disaster events is essential.

In addition to education for health professionals, the general public, particularly those residing around nuclear power plants and in terrorism target areas, need general education on radiation exposure. The basic knowledge of radiation exposure and safety measures could assist in calming fears, improved response in the event of an exposure, and could impact the treatment of radiation exposed victims. For example, several participants in this study discussed the discrimination and prejudice against survivors. Two participants spoke of public outrage once they or a family member was exposed as a victim of radiation, voicing concern that radiation exposure could be contagious or cause harm to others with common casual contact to the victim. By increasing the knowledge base of the public and dispel myths regarding contagion, the prejudice against survivors could be diminished.

Nursing Research

Findings from this work suggest additional research opportunities in various arenas. First, nursing knowledge needs to advance in regards to the long-term psychological effects of disaster events. A greater understanding of psychological insult from trauma can assist in providing care to those in need and offers opportunities for prevention strategies in the future. Additionally, further knowledge in resilience and the ability to overcome adversity is critical to assist with disaster responses in the future, specifically, the process by which people become resilient.

Unfortunately, with passage of time and the bombing occurring over 63 years ago, some individuals believe that no additional knowledge can be gleaned from atomic bomb survivors; and there is movement among some to reduce or altogether remove funding given to support research efforts in this area. However, I propose that continued and ongoing research with first generation *hibakusha* is critical for various reasons. One, this population of individuals has a distinct niche unlike any other: not only have they experienced exceptionally high levels of radiation exposure, they have also endured lifelong sequellae. These effects have included an assortment of physical ailments as well as psychological consequences. Obtaining as much information from them as possible prior to their death is critical to gain understanding of radiation and expand radiation science. Secondly, knowledge gained regarding the impact of radiation based on the radiation dosage survivors received translates into health regulations that impact the well-being of all individuals. For example, health and safety standards currently in place to monitor the dose of radiation that healthcare workers are exposed to are a direct result of knowledge obtained from the *hibakusha*.

Additionally, the need for x-ray shielding for dental and medical procedures is based on the knowledge acquired by evaluating the survivors. Thirdly, new information is continuing to emerge from survivor studies being conducted at RERF, offering the promise of additional knowledge and expansion of science. Therefore, I believe it is critical to continue the examinations until all of the first generation *hibakusha* are deceased, and that as many *hibakusha* as possible can participate in those studies. Based on existing medical science outside the realm of radiation, we know that health

consequences from exposure or genetic mutations are often manifested in multiple generations. Therefore, it is also important the radiation studies through RERF continue through the second generation.

To those who would question the capacity of aging survivors to recall events far removed from the present, I would respond that findings from this study strongly support the notion of flashbulb memory as reported by Brown & Kulik (1977) and Davidson & Glisky (2002). Participants in this dissertation research repeatedly demonstrated startlingly clear recollections, and offered them to me without hesitation and in richly descriptive language.

Public Policy

This research has implications in several areas of policy. Primarily, initiatives to support the survivors who are American citizens need to be strengthened. As discussed in Sodei's (1998) book highlighting the journey of American citizens exposed to the bomb, the Japanese government provides biennial medical examinations to the American citizens, only after years of fighting for the right. The Japanese government provides supplemental health insurance to its citizens known to be atomic bomb survivors. In contrast, the United States government does not contribute in the same way; it does not provide supplemental medical insurance to American citizens who received radiation exposure to the bomb. Furthermore, the United States supports RERF in its medical evaluation of Japanese citizens; but equal or supplemental support and benefits are unavailable to American citizens who were exposed to war acts initiated by their own government.

Additionally, as healthcare providers who have knowledge and understanding of the effects of nuclear war, nurses should actively participate in the prevention of nuclear weapon use. The nuclear non-proliferation treaty offers a worldwide measure to prevent the spread of nuclear weapons. Originally conceived in 1970, the treaty lays a foundation for the elimination of nuclear weapons. The treaty consisted of three parts: avoid acquisition of weapons for those countries that did not currently have them, the nations that did have nuclear weapons would make commitments to disarmament, and those countries wishing to use nuclear energy for peaceful purposes would receive technical assistance (Wilson, Loretz, & Johnstone, 2005). However, in May 2005, the Nuclear Non-Proliferation Treaty Review Conference was unsuccessful in obtaining unified support.

Policy work on an international level to reduce the threat of nuclear weapon use needs continued effort to reach consensus. According to the 2008 Peace Declaration from the Mayor of Hiroshima, the United States is one of three countries that did not sign Japan's United Nations resolution calling for the abolition of nuclear weapons (Appendix F). The current United States President is working to reinstitute a nuclear non-proliferation treaty; hopefully diplomatic work across the world can assist to ensure the elimination of nuclear weapons a reality. Nurses can be individual advocates expressing their viewpoints to their elected representatives. They can also join with organizations that advocate on a larger scale for nonproliferation.

Even on a national level, policy to reduce the threat of nuclear weapons is lacking. The previous Congress introduced legislation HR 885 International Nuclear

Fuel for Peace and Nonproliferation Act of 2007. This bill supported the establishment of international supply of nuclear fuel, allowing contributions by the International Atomic Energy Agency. The goal would be to remove the pretexts for countries to build their own uranium enrichment facilities (GovTrack.US, 2007). The bill passed the House in June 2007; unfortunately it was never voted on by the Senate nor signed by the President. The continued effort to establish leadership in the abolition of nuclear weapons should remain a priority for the United States. Clearly, findings from this research have implications in nursing practice, education, research, and policy.

Strengths

This research effort had several strengths. Primarily, it expanded the knowledge base of disaster nursing. By exploring the *hibakusha's* personal experiences during one of the world's greatest disasters, we gained an understanding of health care needs of survivors of catastrophe and identified long-term implications for nursing practice. This is especially important because radiation exposure was not just a danger from decades ago; it is a legitimate threat for the future. The holistic health perspective is also distinctive from other disaster research. Most poignantly, the need for long-term psychosocial support resonated from this research. Additional knowledge on the assistance needed long-term following a tragedy can be useful in various avenues, not only nuclear disasters. Findings from this study add to the body of knowledge of survivors who later came to the United States following the bombing. Little documentation of research on this particular group of individuals was found previously, yet they are in American hospitals, cared for by American nurses who need to

understand their past and their unique needs. Further, this work advocates for those who suffered insurmountable obstacles and offers mechanisms to enhance the support of a vulnerable population.

This type of critical evaluation from an American university within a College of Nursing is unique. Homeland Security Nursing emphasizes a role for nursing that has not been previously discussed: disaster leadership. Therefore, this research comes from the perspective that nursing has a place in defining disaster care and a role in the scholarship of disaster research. It is imperative that nursing as a profession advocates for a role in the management of catastrophe events.

Limitations

Limitations exist in all studies, including this one. The sample population was a small homogenous group of atomic bomb survivors residing in the United States. The findings are not generalizable to all survivors, including those living in Japan. It is possible that only those who were vocal or out-spoken about their experience agreed to participate in my study. This work does not reflect other survivors who were less inclined to speak about their experience or all survivors in general. Furthermore, seven of my eight participants were from Hiroshima; it is possible that those who experienced the bombing in Nagasaki had different experiences, although that was not evident in my data. From historical and literature review, there is a stronger emphasis, research, and reports from Hiroshima bombing, more so than the Nagasaki event, which is congruent with my work. Finally, this study is limited by the lack of inclusion of survivors from other areas of the United States (Los Angeles, Seattle, and Hawaii) and from Japan. Native

Japanese citizens who still reside in Japan could bring different perspectives about their experience.

Future Research

Good studies often leave the audience with more questions than answers. Additional questions arise from this work, and future research endeavors should be implemented to follow-up on these findings. For example, repeating this study with survivors residing in other parts of the US might glean additional information. Likewise, repeating the study with survivors in Japan and comparing results would be of value to determine the influence environment and culture has on their experience. Furthermore, the continuation to evaluate the psychological impact of disasters is invaluable, particularly long-term longitudinal work. This information could provide powerful data that would assist with future preparedness efforts.

Another interesting finding included the connection between religion and the atomic bomb experience among some of the survivors. It would be beneficial to further explore the relationship between overcoming tragic events and the connection to religious beliefs. Also, it is necessary to evaluate resilience, particularly in vulnerable populations, as those types of studies would be beneficial and expand the knowledge base as it relates to providing care for susceptible persons. More specifically, the process of resilience, how the *hibakusha* moved from surviving to thriving, needs additional evaluation. Further, the relationship between age at time of trauma and resilience merits more investigation. Finally, the element of forgiveness, particularly in individuals who experience the impact of war, combat, or international violence; are

attacked; yet later join the military of the opposing country, would provide valuable information regarding the capacity for people to forgive those who have harmed them.

Summary

In closing, this study has explored the experience of atomic bomb survivors from Hiroshima and Nagasaki, Japan who are currently residing in the United States. From ethnographic data and survivor interviews, a thematic structure was developed that depicts the essential elements of the atomic bomb experience. This includes the literal destruction of the bombing, which resulted in complete desecration of the environment (including the physical health, psychological health and response effort). Individual's perspectives of the atomic bomb experience were circumscribed within the Japanese cultural context. Two ways of being in the world followed the bombing: surviving and thriving, with resilience serving as a lever, allowing for fluid movement over time across the continuum. Individuals experiencing surviving exhibited anxiety about their personal and family member's health, expressed mistrust, and felt a stigma associated with being a survivor. For those who were thriving, peace activism, overcoming and forgiveness were typically displayed. Keen sensory perceptions were universal across all participants and extreme measures of care were frequently discussed.

Findings support the predominant literature with regard to culture and resilience. Yet additional research needs to occur, including the long-term psychological effects associated with disasters and resilience, particularly among vulnerable populations. This study is a small step towards expanding the knowledge base about vulnerabilities and resilience among disaster victims, but additional work is required.

Time played a significant part in the survivors' narratives within several contexts. Stories were heavily based on time sequence; beginning with participant's ages at time of bomb, time intervals in stories, and the emphasis on time details. Yet, the burden of the passage of time and the urgency to have their stories heard were an integral part of their stories. The survivors were a part of history, a living history, and the need to have their voices heard while they are alive was valuable to them. It is time we as a nation and world listen to them.

Personal Reflections

As I reflect upon the journey of this research, I am amazed at the truly spectacular individuals that I encountered along the path. The opportunity of studying at RERF in Hiroshima, Japan was an experience that I will forever treasure. The people I met, specifically Dr. Kazuo Neriishi and Ms. Junko Houta, a special friend, were supportive, encouraging, and accommodating beyond all measure. Wandering through the city, taking in the gardens, spending time in Peace Park, and experiencing the delicacies of the Japanese tradition will be enduring memories. Beyond Hiroshima, the experiences I had in California were equally monumental, mainly because of the people I met. Ms. Geri Handa was truly a remarkable lady; supportive, compassionate, and with such zeal to help others. She truly was an inspiration. Even more remarkable were the eight participants who shared their hearts and souls with me. Each one of them invited me into their life, reliving painful and tragic memories in intricate details. The intimacy they allowed me was beyond anything I have previously experienced in research.

Participants had a true desire to make the world a better place, leaving me inspired to be a better individual after having met them.

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APPENDICES

APPENDIX A

Information for anyone interested in participating in a research study

"Exploring stories from atomic bomb survivors"

WHAT: A research study seeking to understand the experience you had with the atomic bomb in Japan.

WHO: A nurse who is an American doctoral student studying disaster nursing.

WHY: Survivors of the atomic bomb experienced one of the world's greatest disaster events. Information based on the event can be obtained by hearing the stories of the survivors. There is significant value and wisdom in the survivors' stories, and this needs to be shared internationally. This knowledge can help future natural disaster planning and response efforts. In order to help save lives and prevent injury, illness, and death, nurses need to know how to best provide nursing care to victims during disaster events. This research will help by gathering information about health and healthcare during the atomic bombing.

WHO CAN PARTICIPATE:

- adults at least 65 years of age or older
- fit into one of the following categories of "survivor";
  1) those who at the time of the bomb were within the city limits of Hiroshima
  2) those who came into the city limits within 14 days and entered a designated area extending to about two thousand meters from the hypocenter
  3) those who came into physical contact with bomb victims, that aided or disposed of bodies
  4) those who were *in utero* at the time and whose mothers fit into any of the first three groups
- be able and willing to recall and discuss their experience or the stories they were told in English.

WHERE: Interviews lasting approximately 60-90 minutes in a setting of the participants' choice-their own home or another convenient place. Interviews will be confidential and will include only the researcher and participant.

WHEN: January 23-30, 2009

HOW: Call Ms. Geri Handa at (415) 309-7789 and leave a confidential message with your name and phone number for a return call. Ms. Handa will contact you to schedule an appointment. Amy Knowles RN, the Principal Investigator, can be contacted at (865)

389-1045 or by email at aknowles@utk.edu to answer your questions and discuss the study in more detail. Calling for information does not obligate you in any way to participate in the study.

APPENDIX B

Consent Form

Exploring Stories from Atomic Bomb Survivors

In signing this consent form, I am saying that I have talked with the principal investigator, Amy Knowles, who is studying stories of the World War II atomic bombs in Japan. I understand that Mrs. Knowles wants to speak to adults who experienced the bombings in Japan and those *in utero* who later heard stories from family members and friends. I understand that Mrs. Knowles is an American nurse who is studying for her doctorate in nursing and interested in helping people in times of disaster.

I will be asked to tell Mrs. Knowles about my experience of surviving the bomb. Mrs. Knowles may ask several questions during the interview relating to the bomb, my health, or information I received about health care following the bomb. The whole interview will last approximately 1 hour, depending on how much I have to say. The interview will be over when I have nothing else to say about the experience. If I get tired, I understand that we can schedule a second or third interview to complete the conversation.

It is not likely that there will be any physical risk to me. There is some possibility that discussing the event or my life since the bombing could be upsetting or bring back unpleasant memories. However, if the memory or talking about the experience upsets me, we can stop the interview or change the subject to something more comfortable to me. If I become tired during the interview, we can choose to end the remainder of the interview or postpone to another time. I am not being paid or given any other incentive for my participation.

While some people may feel distressed about talking about the subject of the atomic bomb, some may find it therapeutic to talk to a person who is genuinely concerned about their experience. I understand that I may benefit by having the opportunity to speak to an American nurse about my experience. Another benefit of this research is the having the ability to benefit science by adding knowledge of radiological emergencies, which could assist response efforts if a radiological event happened in the future.

The interview will be recorded digitally by audio. The typist who transcribes the recording will ordinarily put in fake names at the time of typing. This is to protect my privacy. Due to the historical significance of the atomic bomb, if I wish to have my named used in the interview, I will indicate my desire to Mrs. Knowles at the time of the interview. Mrs. Knowles will use my name with my story only if I indicate that desire to her. The transcriptionist is experienced with this type of research and signs a confidentiality agreement. They will not discuss my information to anyone. The transcripts will be discussed within a research group that meets at the University of

Tennessee's College of Nursing. Members of this group will also sign a confidentiality agreement. When Mrs. Knowles presents or publishes findings from this research, no names or other identifying information that can be linked to me will be used. The recordings and transcripts will be kept in a locked cabinet in Mrs. Knowles' office indefinitely because of the historical nature of this work.

I have decided where and when I want this interview to take place. I am free to ask questions at any time, or to change my mind about participating. I can choose to stop the interview at any time. If I have questions about this research, I can contact Amy Knowles RN at the University of Tennessee, 2431 Joe Johnson Drive, 336 Ellington, Knoxville, TN 37996-4564; or by phone (865) 389-1045; or by email: aknowles@utk.edu.

The purpose of this research and what I am being asked to do have been explained to me and my questions have been answered.
Name:
_____

Signature:
_____

Date: _____

Please check and initial one:

- Yes, I would like to have my name replaced with a pseudonym, a fake name to protect my privacy. _____ (initial)

- No, I would like for you to use my real name with my story. _____ (initial)

- Yes, I have given artifacts to Mrs. Knowles to review and return, and I agree that any information in the artifacts may be published with the findings of this study. _____(initial)

- Yes, I have given artifacts to Mrs. Knowles for her to keep, and I agree that any information in the artifacts may be published with the findings of this study. _____(initial)
  Artifact given: photos, diary, written story, other:_____

APPENDIX C

Qualitative Interdisciplinary Group Confidentiality Agreement

As a member of the qualitative group, I understand I will be reading transcripts of confidential interviews for this research project, “Exploring stories from atomic bomb survivors.” The information on these transcripts has been revealed by participants who have volunteered in good faith, assured that their interviews would remain strictly confidential. I understand that I have a responsibility to honor this confidentiality agreement. I hereby agree not to share any information from the transcripts with anyone other than the Principal Investigator, Amy Knowles RN. Any violation of this agreement would constitute a serious breach of ethical standards, and I pledge not to do so.

Signature Date

APPENDIX D

Semi-Structured Questionnaire

Examples of questions that will be asked include the following. To some extent, the interview will be dictated by the participant's conversation. Questions offered here may be used as probes, or to keep a conversation flowing.

For those in the first three survivor categories:

Introduction

There are a couple of things that I would like for us to talk about while we are together today. One thing I want to know about is your experience with the atomic bomb. Can you please talk to me about your experience?

1. How did the atomic bomb affect your health?
2. What were your health care needs?
3. What do nurses need to know when taking care of atomic bomb/disaster victims?

For those *in utero* at time of bombing:

Introduction

There are a couple of things that I would like for us to talk about while we are together today. One thing I want to know about is experiencing an atomic bomb. Can you please talk to me about the stories your family members or friends told you about the bombing?

4. How did the atomic bomb affect your health?
5. What were your health care needs?
6. What do nurses need to know when taking care of atomic bomb/disaster victims?

APPENDIX E

Demographics

Name/Pseudonym: _____

Age: _____ **Date of birth:** _____ **Gender:** Male Female (circle one)

Your permanent residence: Japan _____ United States _____

Your proximity to the bomb epicenter (in meters) _____

Exposed to bombing in: Hiroshima Nagasaki (circle one)

Survivor category: (please circle one)
(1) At the time of the bombing, you were within the city limits of Hiroshima or Nagasaki
(2) You came into the city limits within 14 days and entered a designated area extending to about two thousand meters from the hypocenter
(3) You came into physical contact with bomb victims, or you aided or disposed of bodies
(4) You were *in utero* at the time and your mother fit into any of the first three groups

Healthcare:
Do you currently have access to healthcare, beyond what the government provides to survivors? (circle one) Yes No

Medical History:
Does anyone in your immediate family have any of the following medical conditions? (If yes, please circle)

High blood pressure	Allergies	Chronic lung disease
Congestive heart failure	Asthma	Dermatitis
Heart attack	Arthritis	Hearing impairment
Diabetes	Back pain	Limitations with arms/legs
Rheumatic disease	Stomach problems	Liver disease
Ulcers	Kidney disease	Anemia
Ear/nose/throat problems	Cancer	Vision problems
Cataracts	Uterine cysts	

Do you have any of the following conditions?

High blood pressure	Allergies	Chronic lung disease
Congestive heart failure	Asthma	Dermatitis
Heart attack	Arthritis	Hearing impairment

Diabetes	Back pain	Limitations with arms/legs
Rheumatic disease	Stomach problems	Liver disease
Ulcers	Kidney disease	Anemia
Ear/nose/throat problems	Cancer	Vision problems
Cataracts	Uterine cysts	

If yes, please describe:

Psycho-social Aspects:

After a traumatic event, people often have emotional upset. After the bombing, did you have emotional upset? (If yes, please describe)

Do you have any of these reactions, or emotional upset now? (If yes, please describe).

APPENDIX F

HIROSHIMA MAYOR'S 2008 PEACE DECLARATION

Another August 6, and the horrors of 63 years ago arise undiminished in the minds of our hibakusha, whose average age now exceeds 75. "Water, please!" "Help me!" "Mommy!" On this day, we, too, etch in our hearts the voices, faces and forms that vanished in the hell no hibakusha can ever forget, renewing our determination that "No one else should ever suffer as we did."

Because the effects of that atomic bomb, still eating away at the minds and bodies of the hibakusha, have for decades been so underestimated, a complete picture of the damage has yet to emerge. Most severely neglected have been the emotional injuries. Therefore, the city of Hiroshima is initiating a two-year scientific exploration of the psychological impact of the A-bomb experience.

This study should teach us the grave import of the truth, born of tragedy and suffering, that "the only role for nuclear weapons is to be abolished."

This truth received strong support from a report compiled last November by the city of Hiroshima. Scientists and other nuclear-related experts exploring the damage from a postulated nuclear attack found once again that only way to protect citizens from such an attack is the total abolition of nuclear weapons. This is precisely why the Nuclear Non-Proliferation Treaty and the International Court of Justice advisory opinion state clearly that all nations are obligated to engage in good-faith negotiations leading to complete nuclear disarmament. Furthermore, even leaders previously central to creating and implementing US nuclear policy are now repeatedly demanding a world without nuclear weapons.

We who seek the abolition of nuclear weapons are the majority. United Cities and Local Governments, which represents the majority of the Earth's population, has endorsed the Mayors for Peace campaign. One hundred ninety states have ratified the Nuclear Non-Proliferation Treaty. One hundred thirteen countries and regions have signed nuclear-weapon-free zone treaties. Last year, 170 countries voted in favor of Japan's UN resolution calling for the abolition of nuclear weapons. Only three countries, the US among them, opposed this resolution. We can only hope that the president of the United States elected this November will listen conscientiously to the majority, for whom the top priority is human survival.

To achieve the will of the majority by 2020, Mayors for Peace, now with 2,368 city members worldwide, proposed in April of this year a Hiroshima-Nagasaki Protocol to supplement the Nuclear Non-Proliferation Treaty. This Protocol calls for an immediate halt to all efforts, including by nuclear-weapon states, to obtain or deploy nuclear weapons, with a legal ban on all acquisition or use to follow by 2015. Thus, it draws a

concrete road map to a nuclear-weapon-free world. Now, with our destination and the map to that destination clear, all we need is the strong will and capacity to act to guard the future for our children.

World citizens and like-minded nations have achieved treaties banning anti-personnel landmines and cluster munitions. Meanwhile, the most effective measures against global warming are coming from cities. Citizens cooperating at the city level can solve the problems of the human family because cities are home to the majority of the world's population, cities do not have militaries, and cities have built genuine partnerships around the world based on mutual understanding and trust.

The Japanese Constitution is an appropriate point of departure for a "paradigm shift" toward modeling the world on intercity relationships. I hereby call on the Japanese government to fiercely defend our Constitution, press all governments to adopt the Hiroshima-Nagasaki Protocol, and play a leading role in the effort to abolish nuclear weapons. I further request greater generosity in designating A-bomb illnesses and in relief measures appropriate to the current situations of our aging hibakusha, including those exposed in "black rain areas" and those living overseas.

Next month the G8 Speakers' Meeting will, for the first time, take place in Japan. I fervently hope that Hiroshima's hosting of this meeting will help our "hibakusha philosophy" spread throughout the world.

Now, on the occasion of this 63rd anniversary Peace Memorial Ceremony, we offer our heartfelt lamentations for the souls of the atomic bomb victims and, in concert with the city of Nagasaki and with citizens around the world, pledge to do everything in our power to accomplish the total eradication of nuclear weapons.

August 6, 2008

Tadatoshi Akiba
Mayor
The City of Hiroshima

VITA

Amy Knowles was born in Knoxville, Tennessee. She received her Bachelors of Science in Nursing degree from Carson Newman College in Jefferson City, Tennessee in 1995. Throughout nursing school, she worked at Fort Sanders Regional Medical Center, predominantly on the postpartum unit. In 1995, Amy began her nursing career in public health at the Knox County Health Department, where she remained for nine years. Here, she worked in immunization clinics, education and training, occupational health, epidemiology, and bioterrorism preparedness. In 1996, Amy began working on her masters degree, and received a Masters in Public Health from the University of Tennessee in 1998. Also during this time, she received Certification in Infection Control. From 2000 to 2004, Amy also worked in occupational health for emergency medical service and fire service providers.

In 2004, Amy left public health and came to work at the University of Tennessee Veterinary Teaching Hospital as an occupational health nurse, providing risk assessments and education/prevention of zoonotic disease transmission. She also became a Certified Occupational Health Nurse Specialist. In 2006, her interest in the interactions of human and animal health, public health, and emergency response/preparedness led her to the University of Tennessee College of Nursing Homeland Security Program, where she began her PhD work.

Amy has given presentations at local and national levels and for varying audiences. She has served as a Board member of the Association of Professionals in Infection Control and the Tennessee Smoky Mountain Association of Occupational

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This dissertation completes the final degree requirement for the Doctor of Philosophy in Nursing with a concentration in Homeland Security. The degree is to be awarded August 2009.