

RADIATION STIGMA, MENTAL HEALTH AND MARRIAGE DISCRIMINATION:
THE SOCIAL SIDE-EFFECTS OF THE FUKUSHIMA DAIICHI NUCLEAR
DISASTER

by

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THESIS ABSTRACT

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The Fukushima Daiichi Nuclear Disaster that occurred in March of 2011 has not only strongly affected the environment and economy in Japan; it has also impacted the social and psychological well-being of the people of Fukushima Prefecture. Radiation stigma was a problem for the survivors of the A-bombs dropped on Hiroshima and Nagasaki, and those with mental health issues have occasionally been subject to discrimination and inadequate treatment. These appear to be similar issues facing those affected in Fukushima, according to news articles covering the nuclear disaster. In interviews conducted with Japanese citizens, it appears that although mental health problems do exist among those affected, mental health discrimination was not reported to be a problem. Some reported specific examples of radiation stigma, and many interviewees revealed that marriage discrimination could certainly become a problem in the future, particularly for women exposed to radiation.

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CHAPTER I

INTRODUCTION

At 2:46 p.m. on March 11th, 2011, an 8.9 magnitude earthquake occurred just off the east coast of the main island of Japan, near Miyagi prefecture. The Tohoku Earthquake, along with the resulting 30-foot tsunami that engulfed the coast and the meltdown of three of Fukushima's nuclear reactors, is currently being referred to as the "Triple Disaster" by most news organizations. Figure 1 shows Fukushima Prefecture and the area affected by the nuclear disaster.

Figure 1: Map of the Area Affected by the Daiichi Nuclear Disaster



One can easily find press coverage about the immediate effects of this disaster; the casualties, the evacuations, the huge impact on the economy and even the effect it has had on politics, with the current ruling party being heavily criticized for their handling of

the crisis by other politicians vying for power. However, fewer articles cover either the short-term or especially the long-term social and psychological side-effects of this disaster, especially in regards to the fear of radiation exposure. How are survivors coping with the trauma? What might be the long-term effects of this disaster? After their lives have become somewhat stabilized, will there be social ramifications for their status as survivors?

Not only is there a strong stigma against welfare in Japan (if the Japanese pride themselves on anything, it would be their self-reliance), there are also a number of instances where Japanese society has stigmatized those who had become victims in their communities. For example, those affected by mercury poisoning in the town of Minamata in 1956 were often ostracized because their condition was rumored to be contagious. There was also a severe stigma against radiation and radiation-induced illnesses after World War II, exhibited in the treatment of survivors of the atomic bombs dropped on Hiroshima and Nagasaki, also known as *hibakusha*. Many *hibakusha* were shunned because of their exposure to radiation, and the stigma greatly affected their marriage prospects and employment opportunities.

In addition, on top of the hardships of losing their homes and their livelihoods, there's also the possibility that the survivors of the Fukushima disaster could be ostracized for any mental health issues (such as Post-Traumatic Stress Disorder and depression) that might develop from their situation. In this thesis, I analyze whether or not the people of Fukushima, particularly the evacuees, might be vulnerable to long-term social stigmatization, on top of the mental and physical hardships they've already been subjected to, because of their exposure to radiation from the damaged nuclear power

plants as well as their need for financial and psychological support. I would like to explicitly state that the purpose of this thesis is not to claim that this type of discrimination is unique only to Japan, or that they are less tolerant than other countries. Many societies and many cultures, both first-world and third-world, have stigmatized those who have been exposed to radiation or have mental health problems. I am merely analyzing the cultural factors that could influence this stigma in Japan specifically. In this thesis, I first analyze two sources of stigma in Japanese culture which affect the people of Fukushima: specifically, the stigma against radiation exposure and the stigma against mental health problems, both of which can lead to employment troubles, marriage difficulties, and further psychological problems.

For the past 67 years, long before the March 11th Tohoku Earthquake, the survivors of Hiroshima and Nagasaki have faced many social hardships for their status as *hibakusha*, or “bomb-affected people.” These survivors, their children, and even their grandchildren have often been marginalized because of the cultural perception of radiation as a transferrable “sickness,” either genetically or even sometimes as a contagious substance. They have also been marginalized because of their eligibility for government compensation regarding medical expenses. It has affected their employment opportunities, their marriage prospects, and their relationships with those in their community, who see them as not only contaminated, but also as “free-loaders” who get financial support from the government and (by extension) their fellow taxpayers.

There is also the possibility of being stigmatized for needing psychological support if they have symptoms of mental health disorders. Japanese cultural perceptions of disorders such as PTSD and depression (which are some of the side effects of trauma

caused by natural disasters) could also pose a problem for the Fukushima refugees, since the Japanese, like many societies, tend to have a harsh opinion of those who have mental health issues.

After discussing the factors that could contribute to the stigmatization of the people of Fukushima, I will discuss the stigmas that are being experienced today by those living in or associated with Fukushima, in the form of economic difficulties, bullying at schools, and exclusion from the rest of Japanese society. This section of my research was primarily done through analyzing news articles that centered on the social effects of the Daiichi nuclear disaster and by conducting interviews with Japanese citizens.

This research will benefit the Fukushima evacuees, because my findings reveal that social stigmatization due to cultural perceptions of radiation or mental health really is an issue for these survivors, and this thesis can call attention to this issue in order to prevent any unnecessary trauma or psychological damage. These results could be brought to the attention of aid agencies working in Japan to help them recognize that in addition to their economic and physical health needs, their mental and “social” health (the need to have a permanent “hometown” that they can identify with, which is especially important for older generations, as well as the need to feel accepted in their community) also need attention. Media outlets such as news organizations could use the results to raise awareness of this stigmatization, in the hopes that people become more educated and won’t subject those affected by this disaster to more hardships. It could also influence future media coverage of disasters to focus less on sensational stories and stigmatization, and focus more on awareness-raising and proactive responses to the situation.

This information would be useful in the event of another disaster in Japan, especially if it involves one of the few nuclear power plants still operating in the country. Instead of focusing mainly on the physical needs of those affected, a more equal effort would also be spent on bringing their lives back to normal as much as possible; for example, giving them the opportunity to work and support themselves, and helping them reintegrate back into society so they don't feel as if they are now a burden or have no purpose. This research could also benefit those outside of Japan, in any country whose residents might be victim to a nuclear disaster. Regardless of one's country or culture, most people want to feel like they are a part of a community, and most take pride in at least being able to take care of themselves. After a disaster, when people can't support themselves because they've lost their homes, jobs or businesses, and feel disconnected from their community, this research could help point out the importance of addressing these problems as well as the more immediate, material ones.

There have been some challenges to my research; for one, this is a sensitive subject for many Japanese people, particularly those most affected by it, and this should be kept in mind when analyzing the data from the participants. Also, there is little published literature on this topic at this time, since the Tohoku Earthquake occurred in March 2011. However, because there is currently a lack of academic material on this topic, it makes my research all the more necessary.

It might be too early to make accurate predictions about the possible long-term psychological and social effects of this crisis only a year after the earthquake. The evacuees are still struggling to stabilize their daily lives at this point, in which case they might be less concerned with social stigma than with other more immediate concerns.

However, from the data I've collected so far, I have found concrete examples of these people being marginalized in society due to their exposure to radiation and their status as evacuees. It's very important that we draw attention to these signs early so as to prevent it from causing more serious issues later on. If aid services and the Japanese government don't know how serious an issue this is, then little will be done to ameliorate it.

Therefore, conducting this research early on could help lessen the impact of long-term stigmatization for the people of Fukushima.

CHAPTER II

METHODOLOGY

This research is based on two methodologies: content analysis of newspaper articles and one book, and interviews with Japanese citizens. The first step, content analysis, was used in order to gain insight into the problems Fukushima residents are facing. I have researched news articles published from March 11th, 2011 to October 2012 that focus on the people affected by the Fukushima nuclear disaster. Some articles are from international news organizations, but most are English-translated articles from major Japanese news organizations, particularly from the *Yomiuri Shimbun* (*Daily Yomiuri*) and the *Japan Times*. I've also incorporated content from Birmingham and McNeill's *Strong in the Rain: Surviving Japan's Earthquake, Tsunami, and Fukushima's Nuclear Disaster*, a book recently published that discusses the events of March 12th and the impact it has had on the people of Fukushima. I used my findings from the book and the news articles to determine what I should ask participants during the interviews.

In order to better determine the extent of this possible stigma towards the people of Fukushima, I have interviewed 45 Japanese citizens (who were ethnically and nationally Japanese) from early May to early September 2012. There were 20 men and 25 women total. Their names have been changed to preserve their anonymity, and any similarities to actual names are purely coincidental. I interviewed participants from Fukushima and from several other prefectures, in order to compare their opinions and observe how distance from the disaster area affects those opinions. The questions asked

during the interview were about the Daiichi nuclear disaster, radiation, and the types of discrimination that the people of Fukushima have experienced as a result.

Four of the interviews (the first four, specifically) were from Japanese students at the University of Oregon. Two of these students were from Fukushima prefecture (one male, 25, and one female, 23), and two were from Yamanashi and Nagoya prefectures, in central Japan (one male, 21, and one female, 22, respectively). Perhaps because these students have been living in the U.S. since the Tohoku earthquake and thus are somewhat removed from the situation, they seemed much more comfortable discussing this subject as students studying abroad than those participants I interviewed in their home country. This is probably also because they are less concerned about permanent social repercussions. Thus, the data they provided was very useful for this research.

The other 41 interviews were conducted in Japan (18 male, 23 female): 14 in Fukushima Prefecture, 7 in Tokyo, 11 in Kanagawa Prefecture (Yokohama), 2 in Nagano Prefecture, 3 in Hiroshima Prefecture, and 4 in Tottori Prefecture. Of these interviews, only one was done without an audio recorder, because the participant didn't want her voice recorded. Their ages ranged from 19 to 75, with a higher percentage of participants being in their late twenties to early thirties and a lack of people in their early forties to early fifties. Table 1 lists all the participants by their pseudonym, their gender, age, and the prefecture they were from. The map in Figure 2 shows the participants' gender and what prefecture they were from. For example, not everyone I interviewed in an area was actually from that area; some were visiting or had recently moved. The two graphs in Figure 3 shows the age of the participants, and differentiates them based on gender and whether they were from Fukushima or from other prefectures, respectively.

Table 1: Participants' Data (Name, Gender, Age, and Location by Prefecture)

	NAME	GENDER	AGE	LOCATION
1	Riku	Male	21	Yamanashi
2	Ryoko	Female	22	Aichi
3	Sana	Female	23	Fukushima
4	Ren	Male	25	Fukushima
5	Suzuko	Female	39	Fukushima
6	Akane	Female	34	Fukushima
7	Masami	Female	36	Fukushima
8	Kaoru	Male	20	Fukushima
9	Akito	Male	38	Fukushima
10	Ai	Female	31	Fukushima
11	Naoya	Male	39	Fukushima
12	Eimi	Female	27	Tokyo
13	Daisuke	Male	28	Osaka
14	Sanosuke	Male	28	Tokyo
15	Rumiko	Female	26	Tokyo
16	Yuusuke	Male	26	Saitama
17	Hidei	Male	27	Tokyo
18	Makoto	Male	27	Tokyo
19	Junko	Female	65	Hiroshima
20	Shutaro	Male	68	Tokyo
21	Kenta	Male	35	Tokyo
22	Kaede	Female	75	Tokyo
23	Jiro	Male	74	Tokyo
24	Keisuke	Male	19	Tokyo
25	Shouta	Male	27	Ibaraki
26	Tatsuya	Male	25	Fukuoka
27	Takahiro	Male	55	Kanagawa
28	Haruka	Female	56	Kanagawa
29	Manami	Female	75	Tokyo
30	Ryu	Male	37	Fukushima
31	Mika	Female	33	Fukushima
32	Jun	Male	42	Tochigi
33	Ayaka	Female	31	Fukushima
34	Yoko	Female	36	Fukushima
35	Nao	Female	37	Fukushima
36	Satoshi	Male	41	Tokushima
37	Yuna	Female	29	Nagano
38	Yui	Female	30	Nagano
39	Kiyomi	Female	40	Hiroshima
40	Sakura	Female	62	Hiroshima
41	Chiharu	Female	29	Tottori
42	Kumi	Female	56	Osaka
43	Natsumi	Female	62	Tottori
44	Ritsuko	Female	58	Tottori
45	Mariko	Female	57	Tottori

Figure 2: The Home Locations of the 45 Interviewed Participants by Prefecture (and their Gender)

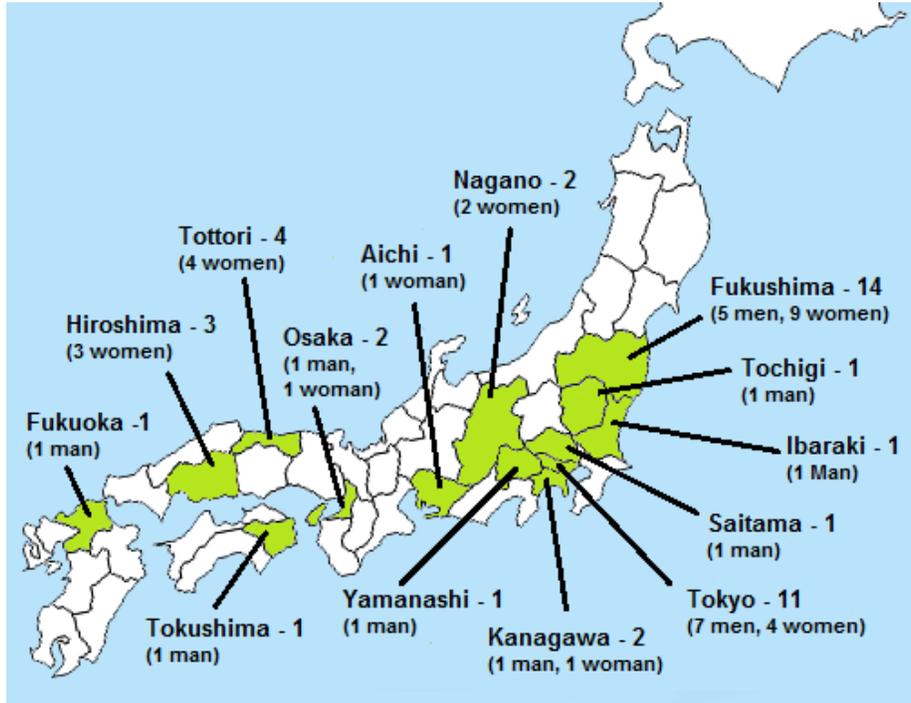
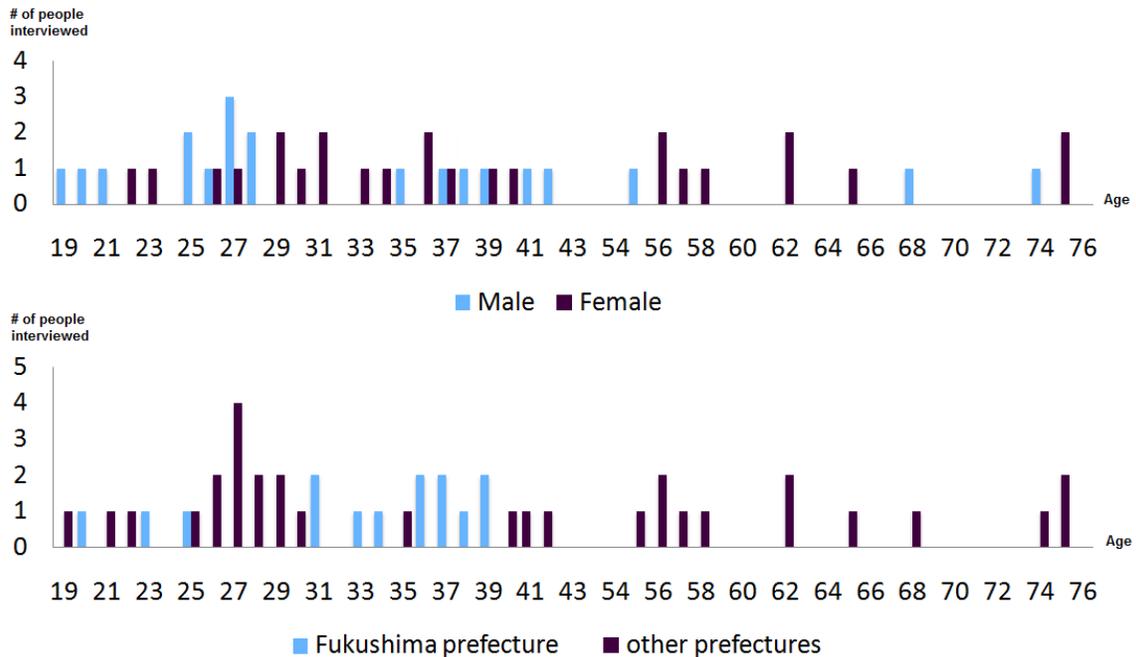


Figure 3: Graphic Visualization of the Participants' Ages (Compared According to Gender and Location)



I conducted 31 of the interviews myself, without a translator, and 14 with the assistance of a translator who was a friend of the participants. After the interviews, I asked the translator how she thought her presence might have affected the participants' answers. She said that her friends seemed to be very talkative and sincere, and that her presence probably made them feel more comfortable about talking with me (since most of them had met me for the first time through her). As for the interviews I conducted on my own; some were done in Japanese, some in English, and some were even a mixture of both. The reason for this is that I tried to adjust to whatever the participant felt comfortable with. Although my Japanese language skills are sufficient to give an interview, I have very little experience translating. Therefore, I am having the Japanese interviews translated by a professional translator, so I can get the most accurate data from my interviews.

Most of the interviews were ten to fifteen minutes long, but some lasted as long as thirty minutes. Every interview I conducted was either with a friend or with someone who was introduced to me through a friend, and I spent some time with each participant before conducting the interview; for example, by sharing a drink with them at their home, at a coffee shop, or spending some of the day with them (hiking, a picnic, visiting a temple, etc.). In each interview, the only personal information I noted was the participant's age and where they were from. For consistency, I tried to stick to roughly the same questions for all the interviews with people from Fukushima Prefecture, with occasional small changes depending on the direction the discussion takes and the background of the interviewee. The same was done for the interviews with people from other prefectures, although some of the questions asked of those living outside

Fukushima were different from those asked to people in Fukushima. Having 8 to 10 specific questions that I asked all the participants seemed to make them feel more comfortable, since I could tell them roughly how many questions I was going to ask and what the questions would be about. To many of them, this seemed a lot less intimidating than having a completely free discussion. This consistent format also makes it easy to compare the data from different interviews.

The questions I asked the UO Japanese students included the following: (Note: In this thesis, *hisaisha* refers to Fukushima evacuees, either living in or outside Fukushima Prefecture, who have been displaced due to the Triple Disaster, which includes evacuees from the Daiichi nuclear disaster. Whenever I refer to "the people of Fukushima," I'm discussing everyone who is from that prefecture, including *hisaisha* and those who have moved out of the prefecture since the disaster.)

- Do you know anyone from Fukushima?
- (If yes to above) Has their life changed since the nuclear disaster? If so, how?
- Has your life changed since the nuclear disaster? If so, how?
- Do you know of any troubles that people from Fukushima are having when they move or travel outside their prefecture?
- Of course, some *hisaisha* might be suffering from mental issues, like PTSD or depression, because of their situation. Do you think some *hisaisha* might face discrimination for having these kinds of mental issues?
- Do you think communities have been supportive of the *hisaisha* that live in their area?
- Might there be problems for people in Fukushima in the future (five or ten years from now), such as employment or marriage difficulties?
- Do you think other Japanese people feel the same way you do?
- Do you have any other comments or thoughts you'd like to give, regarding radiation or possible discrimination?

The questions asked in Fukushima Prefecture included the following:

- How long have you lived in Fukushima?
- Has your life changed since the nuclear disaster? If so, how?
- Do you think the community and government been supportive of the *hisaisha*?

- Are you worried about discrimination from people in other prefectures?
- In the news, I sometimes hear about troubles that people in Fukushima are facing (like discrimination or bullying among children) when they move or travel outside the prefecture. Do you know of any examples, from friends or family?
- Some *hisaisha* are likely suffering from mental issues, like PTSD or depression, because of their situation. Do you think these *hisaisha* might face discrimination for having these kinds of mental issues?
- I heard that there are plans to build four new towns in the safety zone* for the *hisaisha* who are still in temporary houses. Do you think this is a good idea?
- Might people from other prefectures be nervous or scared of people from Fukushima, because of their exposure to radiation?
- Might there be problems for people in Fukushima in the future (five or ten years from now), such as employment or marriage difficulties?
- Do you think other Japanese people feel the same way you do, or do you think your opinions are unique?
- Do you have any other comments or thoughts you'd like to give, regarding radiation or possible discrimination?

* the area in Fukushima that was barely affected by the nuclear disaster

The questions asked in other prefectures included the following:

- Do you know anyone from Fukushima who moved from there because of the nuclear accident?
- If someone moved to your community because of the earthquake, do you think the people in the area would feel more nervous or worried if that person was from Fukushima?
- Do you know of any troubles that people from Fukushima are having when they move or travel outside their prefecture (especially from friends or family)?
- Do you think people from Fukushima might experience discrimination because of their exposure to radiation?
- Of course, some *hisaisha* might be suffering from mental issues, like PTSD or depression, because of their situation. Do you think some *hisaisha* might face discrimination for having these kinds of mental issues?
- I heard that there are plans to build four new towns in the safety zone* for the *hisaisha* who are still in temporary houses. Do you think this is a good idea?
- Might there be problems for people in Fukushima in the future (five or ten years from now), such as employment or marriage difficulties?
- Do you think other Japanese people feel the same way you do, or do you think your opinions are unique?
- Do you have any other comments or thoughts you'd like to give, regarding radiation or possible discrimination?

* the area in Fukushima that was barely affected by the nuclear disaster

Conducting research in the affected area was challenging. While I was in Fukushima Prefecture, I was unfortunately not able to speak with any *hisaisha*; in order

to visit the temporary housing complexes where they were located, I had to make a reservation and first gain permission from the community leaders, and my translator told me he was too sick to come right before he was supposed to meet me in Fukushima City. Although I do believe he was sick at the time, he had mentioned earlier that if he came to Fukushima Prefecture he'd have to keep it a secret from his wife, because she wouldn't be happy about him being exposed to radiation. Despite this shortcoming, I feel I performed well with the elements of my research that were within my control.

CHAPTER III

**THE JAPANESE CULTURAL STIGMA AGAINST RADIATION, AS SEEN IN
THEIR TREATMENT OF A-BOMB SURVIVORS FROM HIROSHIMA
AND NAGASAKI**

The plight of the people of Fukushima, exposed to a large amount of radiation due to a nuclear disaster, can be compared (culturally) to the experiences of the A-bomb victims of Hiroshima and Nagasaki, called *hibakusha* by the Japanese. Even though it happened 67 years ago - at a time when no one in the world knew what the effects of radiation were - it is still the only other time in history when a large number of Japanese citizens have been exposed to high doses of radiation. For these reasons, the reactions to the bombings of Hiroshima and Nagasaki, and to the victims of these bombings, provide important background to better understand the cultural factors that could affect those exposed to the Daiichi nuclear disaster.

In this chapter I will discuss the Japanese cultural conception of radiation and radiation sickness, how those conceptions compare to what Japanese scientists have determined are the effects of radiation on the human body, and the different ways in which the survivors of Hiroshima and Nagasaki were discriminated against and stigmatized. Again, I would like to emphasize that I am not trying to single Japan out and claim that only they discriminate against those exposed to radiation. I am also not claiming that every Japanese person, either in the 1940s or today, is influenced by these traditional and cultural beliefs about radiation.

The Japanese Conception of Radiation and Radiation Sickness

Japan is the first (and so far, the only) country in the world that has experienced the devastating effects of a nuclear weapon. When the bombs were dropped, radiation sickness was completely unknown to the Japanese, or to anyone else in the world. In their attempts to conceptualize and understand this strange new sickness that seemed to last long after the initial event, the Japanese had to turn to their traditional and cultural understandings of illness.

The native religion of Japan is Shintoism, a very ancient set of practices some of which are still performed to this day. Japanese people visit Shinto shrines at the beginning of every January to pray for a good year, and many wedding ceremonies are performed at these shrines using Shinto rituals. Similar to Buddhist temples, one can also purchase talismans at these shrines containing prayers for good health, financial success, and good performance on exams, among many others. Buddhism has also influenced the cultural identity of Japan; Buddhist temples are as ubiquitous as Shinto shrines, and funerals are often performed according to Buddhist customs. In general, Japanese people tend to participate in these practices not for spiritual reasons, but more for reinforcing their social bonds and their sense of community. So although many people in Japan wouldn't define themselves as being purely Shinto or Buddhist, either today or during the 1940s, some of these practices are still an integral part of their Japanese identity.

Two common themes in Shintoism are purity and pollution, and in her article "Illegitimate Sufferers: A-Bomb Victims, Medical Science, and the Government," Todeschini explains how this contrast was used to make sense of the incomprehensible effects of radiation: "'Radiation' came to be perceived as a polluting, defiling substance,

and thus became integrated in a larger system of beliefs about purity and pollution, which are highly developed and systematized in Japanese society and rooted in Shinto and Buddhist conceptions." (Todeschini, 1999, p. 68)

Thinking of radiation sickness as a "polluting substance" led to the belief that not only can it be cleansed from the body in the same way other illnesses can, it also led to the fear that radiation, like some illnesses, could be contagious and could spread to others. Radiation was often thought of as "a 'poison,' a 'substance' that could be transmitted but also potentially expelled from the body." (Todeschini, 1999, p. 74) Those who survived the bombings of Hiroshima and Nagasaki were "suspected of 'transmitting' the impurity of death through genetic transmission or through 'contagion' via bodily contact." (Todeschini, 1999, p. 68)

This perception of radiation as a contagious substance was harrowing enough, but it was especially stressful for Japanese women when they became victims of radiation sickness. Most of the populations of Hiroshima and Nagasaki were women (as most of the men were fighting the war in the Pacific), and according to their traditional Shinto beliefs, their bodies were already considered "impure" because of their reproductive cycles: "Women's bodies, and especially their reproductive capacities and blood, are considered to be ritually polluted in Japan (as is the case in many other societies), and female hibakusha, who 'combined' the impurity of death (radiation) and that of blood (reproduction), were perceived as 'doubly dangerous,' and thus evoked contamination anxieties that were particularly intense." (Todeschini, 1999, p. 72-73)

Not only were women subjected to the psychological stress of seeing themselves as extremely "polluted," there was also the fear that this "pollution" would affect their

progeny. There is also a Japanese traditional belief that mothers and their children have a strong physiological connection, so that the personal health of one can strongly influence the health of the other. Todeschini tells of a woman who has such anxieties about her child's health because of her exposure to the A-bomb: "Her fears of 'transmitting' an illness to her son must also be related to the strong cultural emphasis on the 'unbreakable' mother-child tie [...]; it is common to see the child literally as a 'split part' (*bunshin*) of the mother's body. This makes it difficult for women to conceive that their own children might be in perfect health if they themselves are not (and vice versa)." (Todeschini, 1999, p. 81) Because of these kinds of cultural beliefs, there was a lot of concern among the Japanese about radiation somehow being transferred from one generation to the next, and many women survivors feared having children as a result.

In the absence of any scientific knowledge about radiation and its effects on the human body, these traditional cultural perceptions of radiation and radiation sickness were the only explanations the Japanese had for this strange new illness. And unfortunately, these beliefs were strongly reinforced when many women who were pregnant at the time of the bombings later gave birth to children with mental and physical defects, despite appearing in relatively good health themselves. Because there was a dearth of scientific knowledge on the subject and all they had was speculation, Japanese scientists have taken it upon themselves to observe and study the effects of radiation since the bombings of Hiroshima and Nagasaki. In the next section, I will reveal whether any of these anxieties about radiation might coincide with what Japanese scientists have concluded from their research in this area.

The Scientifically Observed Effects of Radiation on the Human Body

Now that we know some of the Japanese cultural perceptions of radiation, it's important to analyze what the Japanese scientific community has determined are the actual effects of radiation on the human body. Radiation and its medical effects have been extensively studied by Japanese scientists and institutions, including the Radiation Effects Research Foundation (RERF), a bi-national Japanese-U.S. organization established in April 1975 in order to study the effects of radiation on human health, particularly in the survivors of Hiroshima and Nagasaki. Their findings, and the findings of other scientists, have greatly contributed to our current knowledge of radiation and its effects. I should point out that many English articles on this subject were either compiled by native English-speaking scientists from data collected by Japanese scientists, or they were co-authored with Japanese scientists. This made it easier to publish these reports in English and to submit these findings to whatever institution they were working under.

Humans are exposed to low levels of radiation every day, from naturally-occurring radioactive elements on earth as well as from the sun and other cosmic rays. While scientists have found that extremely high doses of radiation will cause radiation sickness, cataracts, serious injury and/or death, below these levels the health risks are unclear. In fact, in *Nuclear Reactor Engineering*, Glasstone and Sesonke note that "[...] it appears that frequent or chronic exposure of adults to radiation at average rates more than a hundred times as great as [radiation exposure] due to cosmic rays and radioactive materials in nature may be incurred for many years without observable subsequent effects on health." (Glasstone & Sesonske, 1963, p. 519) It has been determined that the chances of certain health problems, such as cancer, are higher after receiving a large dose of

radiation, but there is no guarantee that you will get cancer; nor is there a guarantee that you won't get cancer. Lamarsh discusses this ambiguity in *Introduction to Nuclear*

Engineering (2nd Edition):

Stochastic effects are those whose *probability* of occurrence as opposed to *severity*, is determined by dose. Cancer and genetic mutations are examples of stochastic effects. [...] there is a definite probability that cancer will result from a given radiation dose, but it is by no means certain that cancer will result from that dose. [...] With stochastic processes, there is no reason to suppose that there is some level of radiation below which no effect is possible. Presumably, any dose, however small, is capable, in principle, of initiating a stochastic effect. (Lamarsh, 1983, p. 409)

Radiation also affects different cells in the body to different extents. Cell tissue that is more "static" and goes through very little mitosis is more resistant, whereas cell tissue that is constantly regenerating and going through mitosis is affected the most, as Lamarsh points out in the following:

[...] certain tissues, namely those whose cells reproduce most frequently, are normally the most sensitive to radiation. These cells often die when they attempt mitosis; if they survive mitosis, they may be sensitized for the later induction of cancer. Such radiosensitive tissues include the red blood marrow, which continually produce new blood cells, and the tissue beneath the lining of the gastrointestinal tract that contains the stem cells which continually replace the lining of the tract. By contrast, the more static tissues - muscle and bone, for example - are far more immune to the effects of radiation. (Lamarsh, 1983, p. 411)

Glasstone and Sesonke also support this observation: "Although there are undoubtedly variations of degree among individuals, the lymphoid tissue, spleen, bone marrow, organs of reproduction, and the gastrointestinal tract are among the most radiosensitive tissues." (Glasstone & Sesonske, 1963, p. 516-517)

This, however, doesn't apply to unborn fetuses, since they don't have "static" cell tissue. All of their cells are developing very rapidly over a short period of time, so

radiation is particularly dangerous during this stage: "Prior to birth, or *in utero*, all of the fetal tissues are undergoing rapid development, and for this reason they are particularly sensitive to radiation. This is especially the case during the embryonic period, from fertilization through about the eighth week." (Lamarsh, 1983, p. 411-412) The results of this early exposure can be seen in the high rate of abnormal births that occurred when the mother was exposed to the A-bomb during pregnancy, as Todeschini notes: "[...] Many were stillborn, born with major congenital abnormalities (especially microcephaly), or suffered from growth disorders. There were also frequent cases of miscarriage and premature birth among exposed pregnant women." (Todeschini, 1999, p. 72)

Radiation has a strong effect on unborn fetuses, but will genetic mutations be seen in children who are conceived long after the initial exposure to radiation? In other words, will the health problems that are present in those who have been exposed to high doses of radiation carry on to future generations? This is a serious concern for the *hibakusha*, as well as the Japanese population in general. According to Lamarsh, the effects of radiation could be transmitted to the next generation if germ cells (for example, sperm) that were altered by radiation manage to become fertilized: "If radiation succeeds in disrupting a DNA molecule in a chromosome, the result may be a mutation. [...] If the mutation occurs in a *germ* cell, the affected cell is usually incapable of being fertilized. However, if the mutant gamete *is* successfully fertilized and the zygote develops into a live offspring, then the mutation is carried into the progeny." (Lamarsh, 1983, p. 413-414) Not only is this a rare occurrence since mutant germ cells usually are not able to be fertilized, it may also be easily preventable. Genetic side-effects in human beings "have not yet been demonstrated at the present time" (Lamarsh, 1983, p. 419-420) but tests have

been done on laboratory mice, which have observed that waiting until new sperm cells are produced seems to prevent the transmission of genetic mutation:

First, the male mouse is considerably more sensitive to the genetic effects of radiation than the female. [...] the most radiogenetically sensitive portions of the male mouse are the spermatozoa and their precursor spermatids, which survive as individual entities only over a small fraction of the reproductive cycle. Because the same is true in man, this implies that the transmission of genetic damage from acute doses of radiation can be reduced by delaying conception until new sperm cells have matured from cells in a less sensitive stage at the time of exposure. (Lamarsh, 1983, p. 419-420)

It has also been observed that female mice that are exposed to radiation may initially produce offspring that have genetic defects, but offspring produced later on exhibited no significant effects from the radiation exposure. James V. Neel discusses this in his article "Genetic Studies at the Atomic Bomb Casualty Commission-Radiation Effects Research Foundation: 1946-1997": "[...] although in the first few litters posttreatment the offspring of radiated female mice exhibited about the same amount of genetic damage as the offspring of radiated male, there was no apparent damage in the later litters of these females." (Neel, 1998, p. 5434) Although one could argue that we can't expect these test results in laboratory mice to be replicated in humans, Neel notes that similar outcomes have been observed in the A-bomb survivors: "[...] the estimates of the doubling dose of radiation for humans and mice appear to be converging. There is no theoretical reason for this agreement between two animals as disparate as humans and mice, but some nevertheless may find this agreement somewhat reassuring with respect to the validity of the conclusions from the epidemiological studies in Japan." (Neel, 1998, p. 5435)

James V. Neel, along with a group of Japanese scientists, performed a study on the effects of radiation on future generations in 1980, and published their findings in an article titled "Search for Mutations Affecting Protein Structure in Children of Atomic Bomb Survivors: Preliminary Report." After researching the effects of radiation on children who had at least one parent that was exposed to the A-bomb, and comparing this data with a "control group," or children whose parents not exposed to the A-bomb. They found that "no statistically significant difference between the children of exposed and control parents can be demonstrated at this time." (Neel et al., 1980, p. 4221) He came to a similar conclusion eighteen years later in "Genetic Studies at the Atomic Bomb Casualty Commission-Radiation Effects Research Foundation: 1946-1997":

There was no statistically significant effect of parental exposure on any of the indicators of possible genetic damage mentioned above [those being "occurrence of major congenital defect/sentinel phenotype, stillbirth, survival of liveborn children through the neonatal period, sex of child, and birth weight." (Neel, 1998, p. 5432)], but, pooling the results of the analysis of all the indicators, where pooling was feasible, the net regression of the pooled indicators on parental exposure was slightly positive. (Neel, 1998, p. 5433)

In other words, there was a slight increase in those factors listed (which could indicate a genetic mutation), but in a study that included 31,150 children of affected parents, the increase wasn't deemed statistically significant.

To summarize so far, other than being exposed to radiation in utero, it appears that there is no significant danger of genetic mutation from radiation being transferred to future generations. Todeschini came to a similar conclusion in her article: "Scientists concluded that fertility, whether male or female, was not lastingly affected by radiation (except among those who were exposed to extremely high doses, many of whom died in the weeks or months after the bombing) and that the high incidence of abnormal births

was limited to fetuses exposed in utero." (Todeschini, 1999, p. 74) In their book *Living With The Bomb: American and Japanese Cultural Conflicts in the Nuclear Age*, Hein and Selden also discuss how research has shown no increase in genetic defects in children of *hibakusha*: "After decades of research on 72,216 children born more than nine months after the atomic bombings, a 1990 report from a Japanese scientist with the RERF found no 'significant genetic effects,' including birth defects, chromosomal abnormalities, and cancers." (Hein & Selden, 1997, p. 161)

Also, in her article "Hiroshima & Nagasaki: Thirty Six Years Later, The Struggle Continues," Silberner supports these conclusions by referencing similar studies:

Genetically - at least for now - there appear to be few or no effects passed on to descendants. Of 70,000 pregnancies conceived in the late 1940s, no increase in stillbirths, birth defects, or infant mortality was seen. [...] There are still very definite effects in the survivors - chromosome breaks, rings, and extra constrictions - and these aberrations were found in proportion to the radiation dose. But no aberrant chromosomes have been found in their children. (Silberner, 1981, p. 287)

Despite these findings, many scientists are still hesitant to completely rule out the possibility that genetic mutations from radiation exposure could be transferred to one's children. As Neel noted above, although it was insignificant, there was still a slight increase in factors indicating genetic damage which might or might not be attributed to the parents' radiation exposure. Also, it's possible that a genetic mutation from radiation could have become a recessive trait that might not show up for many years. But as of now, according to the studies that have been done, there is no significant evidence that children of *hibakusha* will inherit genetic mutations from their parents, or the health problems associated with them.

However, these findings do little to ease the culturally-reinforced fears of radiation and its "polluting" effects: "[...] despite scientific assertions that deny the existence of genetic effects [...], such fears extend to their children and to future generations." (Todeschini, 1999, p. 67) These cultural ideas have even influenced many *hibakusha's* decision to not have children for fear of giving them their "sickness," despite evidence to the contrary, as Silberner points out: "Many *hibakusha* say they have not married because they or their parents fear their children would be deformed; some say they were rejected by potential suitors who found out they were *hibakusha*." (Silberner, 1981, p. 287) As one might expect, these cultural perceptions of radiation set the stage for the discrimination and stigmatization of the *hibakusha*.

The Stigmatization of *Hibakusha*

In his article "On Being a Doctor: Hibakusha," Hall reports learning that "'survivor' is not a very accurate translation of *hibakusha*, which literally means 'bomb-affected person.'" (Hall, 2008, p. 241) Quinn also notes this in his article "My Son Meets the Hibakusha," where he explains that *hibakusha* basically means "one who has been exposed to the nuclear blast." (Quinn, 1982, p. 182) This term doesn't imply at all that these people are survivors or victims, and merely defines them in a very objective manner. Because of the Japanese cultural perception of radiation, and the fact that there was a significant increase in children born with mental and physical problems very soon after the bombings, the *hibakusha* are more often treated with fear and caution instead of sympathy: "Historically, *hibakusha* have endured social stigmatization and reduced employment opportunities." (Hall, 2008, p. 241)

In *A Call from Hibakusha of Hiroshima and Nagasaki*, a collection of papers and speeches from the International Symposium on the Damage and After-Effects of the Atomic Bombing of Hiroshima and Nagasaki, it is noted that *hibakusha* often found it difficult to find employment: "[...] their susceptibility to disease and tendency to fatigue made it difficult for them to get and hold jobs." (International Symposium, 1978, p. 70) They were especially susceptible to discrimination whenever the economy would suffer. There were "many cases of repeated changes of employment during the postwar economic fluctuations, and discriminatory treatment in employment was meted out to *hibakusha*, making life more unstable." (International Symposium, 1978, p. 115) Hein and Selden confirm this by analyzing data collected from surveys given in 1985 and 1986 by the Japan Confederation of A- and H-Bomb Sufferers' Organization, also known as Hidankyo. These surveys reveal that, in regards to employment difficulties and discrimination, "24 percent [of responders] indicated that they had been worried about finding jobs. Of these, 24 percent hid their *hibakusha* identity in order to avoid discrimination, and 10 percent said they experienced discrimination after being employed." (Hein & Selden, 1997, p. 161)

Another aspect of their lives that was greatly affected by this radiation stigma was their marriage opportunities, due especially to their cultural beliefs about the close physiological bond between mother and children, and the observed results of being exposed to radiation while in utero: "[...] when it began to be rumoured that after-effects of radiation might result in genetic damage, *hibakusha* found themselves subject to discrimination in marriage." (International Symposium, 1978, p. 70) While *hibakusha* could usually succeed in concealing their radiation exposure from employers, it was very

difficult to do this when looking for a prospective spouse, as Hein and Selden point out in the following excerpt:

In Japan, family background is critical in arranging a marriage. Prior to engagement, extensive research into a prospective spouse's personal and family background, including possible hereditary diseases, is common. Damaging findings may halt a union regardless of the personal feelings of the partners. Hibakusha and their descendants have lived in fear of being shunned as prospective marriage partners. They are thought to fall ill frequently, to die young, and above all, to bear the risk of conceiving malformed babies. (Hein & Selden, 1997, p. 160)

Despite studies revealing that there appears to be no risk of transferring genetic mutations to their children, *hibakusha* were still stigmatized. In fear of never being able to find a marriage partner, some were even compelled to conceal this part of their identity from their potential spouse, his/her family, and even their own children for many years:

However much radiation research denies the statistical risk of genetic effects among children of hibakusha, concern among potential marriage partners and employers remains widespread. [...] The ramifications for their personal lives are enormous, not only for having hidden the truth from children who would then bear the burden of anxiety but also in some cases for having misled or lied to husbands, wives, and in-laws for decades. (Hein & Selden, 1997, p. 164)

It was even difficult for *hibakusha* to receive medical benefits for their health problems. In *A Call from Hibakusha of Hiroshima and Nagasaki*, it's revealed that all documented *hibakusha* were given the Health Notebook for A-Bomb Sufferers, and programs were established to offer monetary assistance for their medical expenses. However, "[...] the number of recognized A-bomb patients receiving help as of March 31, 1964, was only 1.2% of the number of the people provided with the Health Notebook for A-Bomb Sufferers." (International Symposium, 1978, p. 104) The complex and time-consuming bureaucratic procedures prevented many people from receiving assistance. But this incredibly low number shouldn't be attributed solely to the legal obstacles of

receiving medical assistance; for *hibakusha*, there was also the fear of being stigmatized even further. Todeschini points out that many Japanese "tend to feel that hibakusha get 'special treatment' and are singled out for all kinds of benefits. In reality, these allowances are surrounded by so much bureaucratic red tape that many victims are prevented from receiving or even applying for them." (Todeschini, 1999, p. 91) Even if they do receive the benefits, they might be compared to those who rely on welfare: "[...] most of these allowances are subjected to an income limit, and thus amount to social-welfare provisions. Hibakusha are thus treated like welfare recipients, who are despised in Japanese society." (Todeschini, 1999, p. 91)

This stigma towards those exposed to the A-bombs of Hiroshima and Nagasaki wasn't limited to the *hibakusha* themselves; even children of *hibakusha* were often subjected to discrimination. Quinn gives one account of a Japanese woman whose family was eligible for the *hibakusha* medical card, which pays for 30% of medical expenses: "Her two daughters, however, have never registered for the hibakusha medical card. She explains that being an hibakusha, or the offspring of one, may 'make a problem finding a mate when it is time for marriage.'" (Quinn, 1982, p. 183) In "A-bomb babies: Mental blows, social woes," Stolzenburg discusses the "Pika" children, which translates to "Children of the Flash." (Stolzenburg, 1990, p. 70) This term was given to people who were exposed to radiation from the A-bombs while they were in utero. He reveals that "[...] the pika label carries a severe stigma there [Japan]. As adults, these individuals have difficulty finding employment, and some have been institutionalized. [...] Some parents don't want to talk about it because they fear discrimination against family members." (Stolzenburg, 1990, p. 70)

Conclusion

Due to the lack of data from any scientific source on the subject, the Japanese scientific community has made invaluable contributions to our current knowledge of how radiation affects the human body. Therefore, it's obvious these cultural beliefs about radiation and radiation sickness are not held by the majority of Japanese, and many might not be influenced by them at all. However, there are some who have a very extreme attitude towards radiation and the survivors of the A-bombs of Hiroshima and Nagasaki. To illustrate how influential these Japanese cultural perceptions of radiation are, despite scientific evidence to the contrary, Todeschini highlights some comments made by a municipal assemblyman during a diet meeting in 1978, regarding medical support for the children of *hibakusha*:

I wonder whether there is not a way to wipe out hibakusha (*zetsumetsu no hoho*). In view of the hereditary risks of "A-bomb disease," we should think about applying the Eugenics law, and the city should initiate policies to prevent hibakusha from bearing children. This would also be better from the point of view of government finances. (Todeschini, 1999, p. 94)

Despite the criticism this politician received for his comment, these cultural beliefs about radiation are obviously ingrained in the minds of some of those in influential government positions; the assemblyman wouldn't have proposed this option if he didn't believe others also supported this position. It remains unclear whether or not these cultural beliefs are still as influential today as they were a few decades ago, especially since information is available today where none was available back in 1945. That is why this research is important, as I will reveal to what extent these beliefs affect the way radiation and its effects are perceived in Japan today. The experiences of the *hibakusha* from Hiroshima and Nagasaki call attention to the social problems that people

in Fukushima could potentially experience due to their radiation exposure from the Daiichi nuclear disaster.

CHAPTER IV

THE CULTURAL INTERPRETATION OF MENTAL ILLNESS IN JAPAN

In Japan, the evacuees from Fukushima's nuclear meltdown have been subjected to relocation, temporary housing, material loss, employment difficulties, and an uncertain future in regards to when or if they will ever return to their homes. In addition to the immediate needs of these people, there are also social side-effects from this disaster, including psychological symptoms within the survivors, and their treatment from society in general. However, in order to effectively examine how their experiences affect them, it's necessary to look into the Japanese cultural perspective of mental illness, trauma, and any stigmas or other social side-effects that are associated with them. By failing to do so, we run the risk of misunderstanding their experiences and symptoms by interpreting them from our own cultural biases, assumptions, and stigmas against mental illness (in this case, those from a Western perspective). This chapter will examine the Japanese cultural perspective on two mental disorders that are likely to affect those affected by the Fukushima nuclear disaster (depression and Post-Traumatic Stress Disorder), and how the perspective on these and other mental illnesses is beginning to change.

The Cultural Perception of Depression

One significant aspect of Japanese culture is the "group-oriented" mindset, where individualism is not as highly valued as conformity and being a cooperative, contributing member of society. Thus, it could be the case that people who have psychological issues that make them "stand out" in society could experience some strong societal reactions. In

their cross-cultural comparison study about mental illness stigmas between Japanese and Australian participants, Griffiths et al. concluded that the Japanese participants had higher levels of stigma towards those with mental illnesses, specifically depression and schizophrenia, than participants from Australia. They remarked that the cultural expectation to be 'normal' could greatly affect how people react to mental illnesses: "Since people who are mentally ill deviate from the norm it might be expected that this would impact more negatively in Japan where conformity is said to be more highly valued." (Griffiths et al., 2006, p. 7 of 12)

They also noted that the tendency in Japan towards long-term hospitalization, as opposed to short visits or rehabilitation, contributed to the stigmatization of these psychological issues. They referred to a cross-cultural study between Japan and Bali, where it was debated that the unavailability of bed space in psychiatric wards in Bali led to more contact between the general public and the mentally ill, which "may have produced an improvement in attitudes, since contact with a person with a mental disorder is known to decrease stigma." (Griffiths et al., 2006, p. 8 of 12)

However, in regards to depression, the Japanese in general have a very different perception of the disorder than we do in the U.S. Whereas 'melancholy' personality types are typically looked down upon in many Western cultures, the Japanese sometimes consider this personality type to be admirable, specifically when it arises from feeling sympathy towards others or from being single-minded in your work and setting incredibly high standards that are rarely met. If this was the case, it revealed that the person was considered "serious, diligent, and thoughtful and expressed great concern for the welfare of other individuals and the society as a whole." (Watters, 2010, p. 208) Kato

et al. came to a similar conclusion that some of these traits could be seen in a positive light, but could lead to disorders when taken to the extreme: "[the] Japanese are regarded to be a diligent, scrupulous and hard-working people, and such personality traits have been positively accepted and moreover encouraged in Japanese society over a long period of history [...] However, these personality traits are not always considered to be positive [by the Japanese] but as a cause of illness such as obsessional personality." (Kato et al., 2011, p. 74)

It's also been determined that depression differs in the way it is conceived and experienced by Japanese and Westerners. Watters references a word association study, where Japanese and American students had to write words they associated with depression. The Americans mostly wrote words associated with internal states and feelings, whereas the Japanese wrote words associated with outside factors, such as weather: "The Japanese, in short, were looking outward to describe *yuutsu* [grief, general gloominess of the body and spirit], and the Americans were looking inward to describe depression." (Watters, 2010, p. 210)

Up until around the last decade, the only term in Japanese that came close to describing the Western conception of depression was *utsubyo*, which described a rare and very severe psychological disorder that was debilitating to the point of ruining one's professional and personal life. While being hard-working and overly sensitive to the tribulations of others could be a positive trait, *utsubyo* actually hindered social interaction and work productivity. This in turn prevented one from contributing to the community, which is generally considered an important requirement for acceptance in Japanese society. When Western drug companies first tried to market anti-depressants to Japanese

companies, they were unsuccessful because the executives believed that Japanese consumers "wouldn't want to accept the disease. The people's attitude towards depression was very negative [...] the Japanese have a fundamentally different conception of depression than in the West, one that made it unlikely that a significant number of people in Japan would want to take a drug associated with the disease." (Watters, 2010, p. 191)

While having the type of melancholy personality that might be considered undesirable in the U.S. would sometimes be considered a positive trait in Japan, Japanese perceptions of “*utsubyo* depression” and other mental disorders have until recently remained harsh due to cultural values on conformity and lack of exposure to those with psychological disorders by the public.

The Cultural Perception of Post-Traumatic Stress Disorder

There are many people in Japanese society, particularly those affected by the Fukushima nuclear disaster, who could potentially be suffering from PTSD. In a country that is prone to natural disasters like earthquakes, volcanic eruptions and tsunamis, knowledge of PTSD and other mental health issues that arise from these natural disasters could potentially help these survivors cope with the trauma.

Whereas these psychological issues weren't addressed immediately after the 1995 Hanshin Earthquake, intervention from foreign aid donors brought the potential issue to their attention: "'Now whenever we have a disaster, people naturally assume there will be some mental health-care provision', said Yoshiharu Kim of the National Institute of Mental Health in Tokyo." (McCurry, 2004) However, this doesn't mean that the topic of

mental health is easy to discuss openly. In a study about PTSD and depression symptoms in the 2000 Miyake Island Volcano Disaster, Goto et al. remarked that "traditional cultural values in Japanese society discourage the 'inappropriate public self-discourse of emotion' and especially in reaction to mass disaster due to feelings of shame and normative expectations of adequate coping and stress management." (Goto et al., 2006, p. 2002) It could be that the best way for Japanese to cope with trauma is not through open discussion or public expression of emotions, but it might also be the case that displaying these symptoms of mental illness could cause one to be stigmatized in Japanese society.

One could easily argue that foreign influence could have convinced the Japanese that there was a problem where one previously didn't exist, as a result from their own foreign cultural perception of trauma. However, unlike depression, which is conceived of and experienced differently between Japanese and most Westerners, PTSD symptoms and the factors that cause them in Japanese people appear to be similar to those exhibited in U.S. sufferers: "Psychological and physical symptoms observed after natural disasters in Japan have generally been found to be similar to those in the U.S. and elsewhere [which include] primarily anxiety and depressive symptoms [...] the tendency toward neuroticism [...] and physical symptoms such as gout, diarrhea, headache, and difficulty in sleeping." (Goto et al., 2006, p. 2002)

In a study about PTSD and depression symptoms in the 2000 Miyake Island Volcano Disaster, Goto et al. focused on how the Miyake Island evacuation affected the mental health of the evacuees. They noted that there were not only stressors that qualified for a PTSD diagnosis under the DSM-IV A-criteria, (such as immediate threat of death or harm to oneself and others), there were also "secondary stressors," such as

"economic loss, occupational and job uncertainty; family and education disruption; future concerns, and loss of community organizations, neighborhood, and activities." (Goto et al., 2006, p. 2004)

These secondary losses can be especially difficult for a group-oriented culture like Japan's, since one's sense of purpose and/or place in a community is such a significant part of one's identity. This is reflected in the increased severity of PTSD symptoms in those who have lived longer on Miyake Island: "[...] while cars and boats can be replaced, the home and property may be different in terms of the degree of 'placement attachment,' the subsequent influence on their sense of 'rootedness' and belonging to a community." (Goto et al., 2006, p. 2019) Because natural disasters such as earthquakes are a constant concern in Japan, mental disorders such as PTSD could potentially become a significant problem, as "[the] psychological impact of losses resulting from disasters has been one of the most common findings and is an important factor to investigate in disasters." (Goto et al., 2006, p. 2019)

However, despite the similarities in PTSD symptoms and stressors, it doesn't mean that Japanese people experience trauma in the same way as other societies, or that they have similar reactions and coping mechanisms for recovery. Watters discusses how despite the similar factors that could lead to psychological damage, "[...] the process by which that damage becomes an outward symptom is a reflection of the cultural beliefs in a particular time and place." (Watters, 2010, p. 101) To illustrate this point, Watters mentioned that after the 2004 tsunami in Sri Lanka, it was observed that the local population mentally processed the traumatic event by determining "what it means," by

trying to find meaning in it, and perceived trauma itself not as internal damage to psyche, but external damage to their social connections. (Watters, 2010)

It could be that the reluctance to openly express emotions and discuss personal problems in Japanese society is not an indicator of potential stigma, as we might see it in the U.S, but an actual coping mechanism that helps in the recovery process. For example, Watters discusses how Sri Lankans had developed a set of rules and code words in order to safely talk about the horrors of the civil war, because vivid reminders of the traumatic events could lead to out-of-control emotions and the desire for revenge: "These people weren't avoiding talking about what happened to them because they were psychologically blocked or traumatized; rather, they were attempting, as best they could, to keep the violence under control." (Watters, 2010, p. 111) Although PTSD symptoms have been observed in survivors of natural disasters in Japan, the next task is to determine what coping and recovery methods would be most beneficial, in accordance with what is appropriate within Japanese culture.

As we can see, Post-Traumatic Stress Disorder in Japan is not only a reality; it is fairly common, or at the very least has the potential to be. Natural disasters will continue to plague the country, and so it is beneficial that the general population in Japan recognizes PTSD as a normal response to traumatic events. However, the methods for treating psychological issues like PTSD in Japan need to be sensitive to cultural factors, such as the importance placed on community and their general reluctance to discuss personal problems and emotions openly. It could be that this unwillingness to discuss personal health issues is a coping mechanism, or it could be an indicator that those who suffer from mental disorders in Japanese society might face discrimination. Fortunately,

the perception of these issues seems to be shifting more towards curiosity and acceptance and away from stigmatization, due to increasing knowledge of these issues and changing social dynamics.

How the Japanese Perspective on Mental Illness Is Starting to Change

"Cultures are more susceptible to outside ideas about the nature of the human mind at times of social change and upheaval," (Watters, 2010, p. 200) which proved to be especially true in the aftermath of the 1995 Hanshin Earthquake in Kobe, when the Japanese were heavily criticized by foreign aid workers for their lack of attention to the survivors' mental health. Although the Japanese could have been influenced by uninformed Western interpretations of what the survivors should be experiencing, it has at least brought the subject of mental health needs to their attention, and could have lessened the potential for stigmatization. Since the Hanshin Earthquake, more attention has been focused on post-disaster psychological issues and ways to help people cope and recover from traumatic events, like the more recent Fukushima nuclear disaster.

These changes aren't only a result of natural disasters; modernization, urbanization and other social/economic changes have also greatly affected the lives of Japanese citizens, and thus their mental health: "Japan's rapid socioeconomic changes have affected the lifestyle, behavior and mentality of people in Japan, and new types of psychiatric disorders or behavioral disorders have recently appeared in Japan." (Kato et al., 2011, p. 67) In his article about the change in Japanese perceptions of post-traumatic stress, Justin McCurry describes how mental illness, a subject that was once taboo in Japan, has become more openly discussed by those in the field of psychology. As an

example, "[...] one of the Japanese citizens held hostage in Iraq last month still refuses to talk publicly about her ordeal because, her lawyers say, she has post-traumatic stress disorder (PTSD). Such an admission would have been unthinkable had she been taken hostage during the first Gulf war." (McCurry, 2004)

The change in perception of depression (*utsubyo*) has also been a very recent development, and is mostly due to the manner in which anti-depressant drugs were marketed in Japan in the late 1990s by American pharmaceutical companies. (Watters, 2010) The symptoms of depression were likened to those attributes found in the "melancholy" personality type mentioned earlier, which carried less of a stigma than the *utsubyo* diagnosis: "The label of depression then took on some laudable characteristics, such as being highly sensitive to the welfare of others and to discord within the family or group. Being depressed in this way became a testament to one's deeply empathic nature." (Watters, 2010, p. 226)

This completely changed the conception and experience of *utsubyo* depression in Japan. Because of these positive connotations with the symptoms, more people were willing to admit that they might have this disorder: "Previously, depressed persons had tended to hesitate to visit psychiatrists, and Japanese psychiatrists had tended to equate depression only with the melancholic type. Perhaps with the introduction of public awareness campaigns for depression and antidepressants, people who considered themselves depressed began to feel less self-conscious about visiting psychiatrists." (Kato et al., 2011, p. 75) Of course, the case with depression is a special exception, as most mental disorders still had negative perceptions of their symptoms, but there is still some

evidence that public perceptions of mental illness might be less harsh than they once were.

In the study by Griffiths et al. on stigmas towards mental illness mentioned earlier, they revealed that the personal levels of stigma from the Japanese participants, although they were higher than those from the Australian participants, were still lower than their levels of perceived stigma (how they thought others in their society felt about these disorders). This could mean that in Japan, there might be more "imagined" stigma than "actual" stigma, assuming the participants were being honest in their responses:

[...] it would imply that there would be value in conducting public awareness programs that promote knowledge of the true rates of stigma in the community. [It] may encourage help seeking among people with a mental illness. However, it is also possible that the difference between personal and perceived stigma rates reflects, at least in part, a social desirability bias in which respondents are reluctant to report their true attitudes. (Griffiths et al., 2006, p. 8 of 12)

Although the study shows that the Japanese tend to be more stigmatizing towards those with psychological issues than Australia, it also shows that they are trying to be somewhat sympathetic, as evidenced by the participants' beliefs that they were more forgiving than the rest of society. Even if they said this to avoid stating their true sentiments, it implies that they aren't confident enough in the validity of their opinions; otherwise they wouldn't worry about their opinions being judged as too harsh.

The small improvements in the negative perceptions of mental illness is a good step, and it is a necessary one, for although the Japanese might be hesitant to openly discuss personal issues like mental health, the reality is that mental disorders and the factors that contribute to their formation *do* exist in Japanese society.

Conclusion

In regards to the evacuees from the Fukushima nuclear disaster, it's clear that there are psychological effects of their experiences, need to be addressed carefully. While it appears that the general population in Japan is becoming more aware about the effects trauma can have on a person's mental well-being, it is still very difficult for many Japanese to talk openly about personal issues like mental health. It's also clear that their group-oriented culture has an effect on their psychological health, particularly when they have to leave their community as the evacuees of the Miyake Volcano Disaster had to do eleven years earlier: "Across cultures, relocation has been found to be one of the major stressors associated with more severe psychological symptoms for disaster victims [...]. The lack of secure re-settlement may create anxiety towards the future and an inability to feel connected to important community resources." (Goto et al., 2006, p. 2020)

Although Japanese people who experience trauma might have the same symptoms and are affected by the same stress factors as those from other Western societies, we shouldn't prescribe solutions according to how we experience and recover from trauma in the U.S. In Japanese society, community identity has more impact on one's mental well-being, and public displays of emotions and personal problems are discouraged. It's possible that these public displays are discouraged because of perceived stigma, or it might simply not be necessary for the recovery process. Regardless, methods for recovery will be more likely to succeed if they adhere to these cultural norms. All these factors need to be kept in mind when trying to analyze the social impact of this disaster on the residents of Fukushima.

CHAPTER V

FUKUSHIMA IN THE NEWS; WHAT NEWS ARTICLES ARE REVEALING ABOUT THE EFFECTS OF THE NUCLEAR DISASTER

In the first few months following the Daiichi nuclear disaster, the news coverage of the situation in Fukushima (both national and international) focused primarily on the environmental, economic, and political impacts of the accident. Little attention was given to the social impact of the disaster on the people affected. More recently however, news articles that focus on the social and psychological effects of the disaster, which usually take more time to manifest, are becoming more frequent. For this thesis, I analyzed news articles published between March 2011 and September 2012, thus my findings in regards to these news articles would not be comparable to articles published outside this time period.

In this chapter, I will discuss some common themes I found in my analysis of these news articles and Birmingham and McNeill's book *Strong in the Rain: Surviving Japan's Earthquake, Tsunami, and Fukushima's Nuclear Disaster*. All of these sources were written in English or were translated into English, so the intended audience for these sources is not Japanese people, but people from outside Japan who speak English. I will highlight the most significant themes, including examples of an extreme fear of radiation and of radiation stigma, such as fears of contaminating others, connections between this situation and the A-bombs in Hiroshima and Nagasaki, and attempts by those affected to hide their identity. I will then give examples of how this fear of radiation is manifesting itself, including avoidance of Fukushima produce and debris from the earthquake and

tsunami, school bullying, and harassment from other Japanese people. I will also discuss the economic hardships these people are facing, in the form of compensation, employment and housing. I will examine the effects this disaster has had on the mental health of those affected, such as increases in mental disorder diagnoses, adverse effects observed in children, and even mental fatigue as a contributor to premature death in evacuees. Finally, I will highlight patterns I found in my analysis and any topics that I was expecting to be reported but were not discussed in these articles. The most significant patterns I found were the recent reporting of mental health problems, the lack of coverage of radiation stigma from Japanese sources, and the lack of coverage on possible marriage discrimination.

Radiation Fear and Stigma

Being exposed to the high amount of radiation caused by the Daiichi nuclear disaster would already cause a great deal of concern over one's health, but because of Japanese cultural conceptions about radiation, the people of Fukushima also have to deal with the stigma of being "contagious." In Philip Cunningham's article "Reflections on Japan: growing stigma against victims of Fukushima," he describes how evacuees from the Daiichi nuclear disaster have been "[...] shunned from clinics and even refugee camps for fear of 'polluting' others." (Cunningham, 2011) This idea that radiation can somehow be transferred to other people has caused these evacuees to feel even more disconnected with their communities. Cunningham continues further: "Already Fukushima-jin are reeling from prejudice, and refugees who hail from areas close to the battered nuclear plants are being discriminated against even in shelters. Worse yet are the heartbreaking

reports of Fukushima kids turned away from medical clinics for fear they might be radioactive." (Cunningham, 2011)

This reaction to those who have been exposed to radiation is reminiscent of how the survivors of Hiroshima and Nagasaki have been treated by Japanese society. Birmingham and McNeill point this out in their book *Strong in the Rain*: "Since March 11, 2011, many observers have begun referencing to another generation of Fukushima *hibakusha*, who must also endure a lifetime of worry, state support, and even discrimination." (Birmingham & McNeill, 2012, p. 180) Cunningham also makes this comparison: "This instant stigmatization touches a raw nerve in Japanese culture, reminiscent of the sad fate of 'Hiroshima maidens' and other radiated *hibakusha*, whose victimhood attracted social pity from a distance but avoidance up close." (Cunningham, 2011) In Mark MacKinnon's article "For Japanese, Fukushima spells fear," one of the interviewees, Mr. Takemoto, explains that he is "particularly sensitive to radiation worries since his 84-year-old mother is a Hiroshima survivor." (MacKinnon, 2011) As someone with a *hibakusha* parent, he is most likely familiar with the stigma associated with radiation.

Birmingham and McNeill have observed that there is also a strong possibility of marriage discrimination and fear of transmitting genetic defects to the next generation. When a woman wanted to come to Fukushima to help her parents, "[...] Ichida's wife and family persuaded her not to risk coming to Soma if she was planning to have children." (Birmingham & McNeill, 2012, p. 83) Then, a man expressed his anxiety about returning to his hometown, which is where the nuclear disaster occurred: "Let's say I tell a woman about my past, that I've absorbed all this radiation and may get sick or father children that

are deformed so we shouldn't have children. Is there a woman out there who would accept me?" (Birmingham & McNeill, 2012, p. 87)

For some evacuees from the nuclear disaster, this fear of stigma associated with radiation was apparent in their initial reaction to obscure their identities when talking to reporters. In an article published a week after the earthquake by Natsuko Fukue, titled "Prefectures open shelters for tsunami survivors," the people interviewed from Iwaki, Fukushima did not give their full names: "Mieko, a mother of a 10-year-old boy from Iwaki who withheld her family name, said she came to Saitama because she was worried about radiation. [...] Another family, who only revealed their last name, Masahiko, said they also headed south to get away from the troubled Fukushima No. 1 power plant. [...] Not all of the families were able to come to Saitama together, according to one woman from Iwaki." (Fukue, 2011)

The fact that names were withheld by survivors wouldn't be surprising if other interviewees, who were not affected by the disaster, did the same. However, in the same article, all of the other interviewees had released their full names, as shown in the following examples: "Many are streaming in from Iwaki, Fukushima Prefecture, which is close to the nuclear plant, Saitama official Kenzo Yukihiro said Friday. [...] People living near the venue showed up to help, but they were asked to come back later because the prefectural government wasn't ready to accept volunteers. One of them, architect Hiroshi Matsuda, said he wanted to provide a place to stay. [...] Reiko Suzuki, who runs a nonprofit organization for mothers, also tried to volunteer." (Fukue, 2011) While I have seen examples in other articles where people from Fukushima gave their full names, I noticed that when names were withheld from an article, they were only withheld when

the interviewee was from Fukushima Prefecture or was directly affected by the nuclear disaster.

This fear of radiation, and its supposed contagious characteristics, has even led to cities refusing help with decontamination in fear of being associated with radiation. In an article by Tomoko Numajiri and Keigo Sakai titled "Towns avoid govt help on decontamination," they reveal how towns will refuse monetary assistance to help clean up their region, in fear that their image will be affected: "Municipalities contaminated with radiation as a result of the crisis at the Fukushima No. 1 nuclear power plant are concerned that the central government's plan to designate municipalities for which it will shoulder the cost of decontamination will stigmatize those communities, according to a Yomiuri Shimbun survey." (Numajiri & Sakai, 2011)

In order to receive any money from the central government to assist in cleanup, the towns and cities need to first be designated as contaminated zones. However, many areas, including most of Gunma and Ibaraki prefectures, don't want that designation: "Almost all the municipalities in Gunma and Ibaraki prefectures had areas where radiation in excess of the government standard was detected. However, only 10 municipalities in Gunma Prefecture and 19 in Ibaraki Prefecture said they would seek the designation." (Numajiri & Sakai, 2011) This is 30 and 40 percent of the municipalities in Gunma and Ibaraki, respectively. An official in Daigomachi, Ibaraki prefecture explains: "If our town receives the designation, it may deliver a further blow to our image, already damaged by radiation fears,' an official of the town's general affairs department said." (Numajiri & Sakai, 2011)

It seems that the Japanese people are not only afraid of the effects of radiation; they are also afraid of radiation stigma. Next I will discuss the ways in which this stigma is affecting those who have been associated with the nuclear disaster.

How This Stigma Is Manifesting Itself

Immediately after the nuclear disaster, much of the food produced in Fukushima was pulled from the market for safety reasons. An article in *The Japan Times* titled "Tepco compensation irks evacuees," notes how strongly this affected the region: "Radiation leaks from the crisis have contaminated crops and left fishermen in the region unable to sell their catches, a huge blow to an area heavily dependent on fishing and farming." ("Tepco compensation irks evacuees," 2011) Since then, produce grown in the region goes through many thorough tests and recalls. Even produce that pass these safety tests are under suspicion if a higher-than-normal level of radiation is detected, as Mark MacKinnon mentions in his article "For Japanese, Fukushima spells fear":

Seemingly every week there's another headline in the local press about radioactive substances being discovered on another product from the region: beef, milk, spinach and tea from Fukushima have all seen recalls or bans. Last month, elevated levels of radioactive cesium (though not high enough to be considered unsafe by Japanese government standards) were discovered on the region's rice, leading to concerns about even that staple of the country's diet. (MacKinnon, 2011)

Not all the produce from Fukushima was affected by the nuclear disaster, however. Many regions in the prefecture had produced perfectly safe food that passed all rigorous testing, but because of the prefecture's association with radiation, all produce in supermarkets marketed as coming from Fukushima was neglected: "Though the Japanese government has evacuated only a 20-kilometre radius around the plant, many inside and

outside Japan treat the entire region as though it's contaminated, unsure of what to make of shifting official assessments of the situation." (MacKinnon, 2011) This aversion to radiation has strongly affected the prefecture's fishing industry, according to Birmingham and McNeill: "Thousands of fisherman along the Tohoku coast have confined themselves to harbor because of radiation fears. [...] Fewer than 2 percent of Fukushima's fisherman have returned to sea, and, even if they have the boats and equipment to do so, they are unable to sell their catches." (Birmingham & McNeill, 2012, p. 170) MacKinnon points out that, ironically, Fukushima fisherman can't sell their catches even though fisherman in different prefectures fish in the same areas they do: "Fish from Chiba and Ibaraki [two neighboring prefectures] are all caught from the same area of the sea, yet only ours aren't selling well because they are labelled 'Fukushima.' It's absurd," a fish market official was quoted as saying." (MacKinnon, 2011)

This aversion to Fukushima produce isn't limited to shoppers outside the prefecture; even those from Fukushima or living in Fukushima are afraid to eat the food from the region. In Mizuho Aoki's article "Nuclear refugees struggle to cope with uncertain future," an evacuee in Tokyo describes how he misses his hometown in Fukushima, yet everything he enjoyed there has been contaminated: "'Iwaki is still a beautiful place,' he said. 'The air tastes much better than in Tokyo. If you don't know (about the contamination), even the food tasted better than here. But for me, they no longer taste better. I have lost my appetite.'" (Aoki, 2011) The avoidance of produce grown in the region due to radiation fears has greatly affected Fukushima's economy, and unfortunately this radiation stigma isn't limited to their produce.

The Daiichi nuclear accident has made it difficult for Fukushima and surrounding prefectures to dispose of debris from the March 11th earthquake and tsunami, because other prefectures are afraid to accept it. In an article from *The Daily Yomiuri* titled "Groundless rumors add to burdens of Fukushima evacuees," the author discusses how the Kawasaki municipal government was willing to take earthquake and tsunami debris from Fukushima, but this decision was overturned because "it received nearly 5,000 complaints from local residents fearing the waste would be contaminated with radioactive substances." ("Groundless rumors add to burdens of Fukushima evacuees," 2011)

In an article from *The Japan Times* titled "86% of municipalities leery of taking debris," a survey was given out to all of Japan's 1,742 municipalities. Of the 1,422 that responded, eighty-six percent didn't want to take the debris from Iwate and Miyagi prefectures because "it may be tainted with fallout from the Fukushima nuclear crisis." ("86% of municipalities leery of taking debris," 2012) As for specific reasons why they wouldn't accept it, "53 percent of responding governments said they have no disposal facilities, 41 percent cited fears of radioactive contamination, 24 percent pointed to distance and transportation difficulties, and 20 percent sited local opposition related to radiation." ("86% of municipalities leery of taking debris," 2012) This stigma against radiation already impacts the lives of the residents of Fukushima through their agricultural industry and their attempts to repair the damage from the earthquake and tsunami, but it also directly affects their interactions with other people in their community. This stigma is especially apparent in the interactions between children.

Although adults tend to show their biases and prejudices in more indirect ways, children have far fewer inhibitions when it comes to expressing their own fears or the

fears of their parents. Birmingham and McNeill reveal that when children evacuate from the areas affected by the Daiichi nuclear disaster, they are often singled out and ridiculed by other children: "Being different is not easy. Incidents of children being teased by classmates or even chastised by teachers have been reported in Fukushima."

(Birmingham & McNeill, 2012, p. 192) Specific examples of this development are given in *The Daily Yomiuri* article "Groundless rumors add to burdens of Fukushima evacuees":

In one case, a primary school boy from Minami-Soma, Fukushima Prefecture, who had transferred to a school in Chiba Prefecture was asked by a teacher at the new school, 'Are you going to keep it a secret that you come from Fukushima Prefecture?' The boy's mother, who had accompanied her son to the school, did not understand what the teacher meant, and said there was no need to do so. The boy then took a seat in front of the teacher's desk but no one sat next to him. ("Groundless rumors add to burdens of Fukushima evacuees," 2011)

Being shunned by others is particularly painful in Japanese culture, which values group cohesiveness. Unfortunately, these children suffer from more than being ignored and excluded from the group:

A primary school girl, who evacuated from Minami-Soma [in Fukushima Prefecture] to Gunma prefecture, is refusing to go to school after her new classmates at a Gunma school would not go near her and made nasty remarks behind her back. Funabashi city's board of education in Chiba Prefecture reportedly was informed of a case in which local children in a park said that radiation would be passed onto them by boys from Minami-Soma. ("Groundless rumors add to burdens of Fukushima evacuees," 2011)

This exclusion and verbal harassment were even experienced by those who evacuated to another city in Fukushima. MacKinnon mentions this in his article "For Japanese, Fukushima spells fear": "The Fukushima stigma is such that schoolchildren from the region are being ostracized and bullied by their classmates. 'The other kids surround them after school and yell 'radioactive, radioactive,' said Masahiri Watanabe, a

resident of the town of Hirono in Fukushima prefecture." (MacKinnon, 2011) This fear of radiation stigma is such that even children from the same prefecture, who could potentially be victims of discrimination themselves simply by being a Fukushima resident, are setting themselves apart from children who were exposed to radiation from the Daiichi nuclear disaster. Why do children have these reactions to radiation? Where did they learn about this stigma? The obvious answer is from the adults around them.

While Japanese adults might not be as confrontational and direct as children about their fears of radiation, their criticism and exclusion of those who were affected by the nuclear disaster is still obvious. Cunningham notes how some people are going so far to disassociate themselves from those who evacuated because of the Daiichi nuclear disaster that they call these people "non-Japanese," in that their actions don't reflect how a Japanese person should act: "Those who temporarily moved their families to Western Japan or fled overseas are being ridiculed as quitters, losers and, in some essential way, non-Japanese." (Cunningham, 2011) An article from *Russia Today* titled "Fukushima refugees shunned by Japanese society" also discusses how those who were evacuated or left willingly are being excluded from Japanese society for not meeting cultural expectations of how they should act: "In one of the many shelters in the Fukushima region tens of thousands of people are still displaced. They have fled the earthquake, the tsunami and now the nuclear disaster. Now they are having to endure the harsh judgments of their countrymen who see their choice to flee their homes in the disaster-hit area as 'un-Japanese.'" ("Fukushima refugees shunned by Japanese society," 2011)

Not only were the evacuees being excluded from the group for not acting "Japanese," there also seems to be a fear that these people (who have been exposed to

radiation) are contagious and will contaminate others around them. This attitude is reflected, as mentioned earlier, in the children's physical avoidance of those exposed to radiation and their comments that radiation can be passed onto others. It seems that some people, even those working in government, also have this same mentality. In "Groundless rumors add to burdens of Fukushima evacuees," the author discusses the following example: "The Tsukuba municipal government in Ibaraki Prefecture reportedly asked people moving from Fukushima Prefecture to submit official documents that show they had undergone radiation screenings. After this came to light, the city government dropped the requirement and the city's mayor apologized." ("Groundless rumors add to burdens of Fukushima evacuees," 2011)

This stigma is not limited to those moving to other prefectures from Fukushima; even those who are merely traveling between prefectures are victims of this discrimination. After the Daiichi nuclear disaster, one transportation company based in Iwaki, Fukushima, has to rent trucks from Tokyo and Saitama Prefecture because their clients don't want trucks with Iwaki license plates: "If our clients ask us not to come into their areas with Iwaki license plates we have no choice but to comply,' the 61-year old president said. 'It's so unreasonable.'" ("Groundless rumors add to burdens of Fukushima evacuees," 2011) This idea that radiation is polluting and can affect others has even resulted in those driving with Fukushima license plates to be turned away from gas stations outside Fukushima prefecture: "A Saitama Prefecture-based company that has a factory in Tamura, Fukushima Prefecture, asked employees to use Saitama Prefecture license plates after an employee driving a car with Fukushima plates was turned away

from gas stations in the Tokyo metropolitan area and elsewhere." ("Groundless rumors add to burdens of Fukushima evacuees," 2011)

This stigma has affected not just the social relationships of those affected by the Daiichi nuclear disaster, but also the ability for these people to do business outside Fukushima Prefecture. As you will see in the next section, in addition to being discriminated against because of their radiation exposure, the people of Fukushima are also suffering from a number of economic problems as a result of this disaster.

The Economic Effects

Not only do the victims of the Daiichi nuclear disaster have to deal with the mental pressures of radiation stigma, concerns about their health and being ostracized from Japanese society, they also have to deal with immediate economic problems. Although these problems are not likely a direct result of radiation stigma, it is possible that this particular stigma could be a contributing factor. The economic problems discussed in the articles I analyzed involve inadequate compensation and income, employment difficulties, and housing issues for evacuees.

After the disaster many people lost their main source of income, either by being evacuated away from their jobs, losing their business in the earthquake or tsunami, or through bans on agricultural goods from Fukushima. Despite losing their livelihood, survivors are not getting help from financial institutions, as noted in an article from *The Economist* titled "Silenced by Gaman": "Indebted farmers and business people have not been offered debt relief by the banks, though they have lost all sources of income." ("Silenced by Gaman," 2011)

The victims of the nuclear disaster have at least been offered monetary compensation for their troubles by TEPCO (Tokyo Electric Power Company), the corporation that owns and operates the Daiichi nuclear power plant. However, according to an article from *The Japan Times* titled "Tepco compensation irks evacuees," the amount offered wasn't enough to compensate those who have lost their homes and main sources of income. Kazuko Suzuki, a woman who left her job near the power plant and evacuated without packing anything, thought the ¥1 million yen (about \$10,000 US dollars) amount was insufficient: "Tokyo Electric Power Co.'s announcement Friday that it would pay ¥1 million in initial compensation to each evacuated household stuck her as far too little to repay her family for the economic turmoil it has already suffered." ("Tepco compensation irks evacuees," 2011) Considering that people have lost their livelihoods but still need to pay for food, new clothes, blankets, and possibly rent, Suzuki thinks the equivalent of \$10,000 is not nearly enough for a large family: "She said: ¥1 million doesn't go very far. I'm not (satisfied by) just ¥1 million per family. If it was dependent on the size of the family, I'd understand. But it's not." ("Tepco compensation irks evacuees," 2011)

Not only is the amount offered by TEPCO inadequate as compensation, the company has been extremely slow to pay these victims, according to Harumi Ozawa's article "Fukushima refugees still in limbo one year on": "Twelve months on from the disaster, few have received the compensation payouts they expected from plant operator Tokyo Electric Power (TEPCO), an enormous utility whose tentacles reach far into Japan's political machine." (Ozawa, 2012) According to Ozawa, TEPCO itself has been causing much of the delay: "The government-backed alternative dispute resolution centre

said that as of late February, only 13 cases out of the 1,000 filed with it since September have been settled. The centre's head, Hiroshi Noyama, said he thought progress would have been faster. 'TEPCO has been hesitant about negotiating (compensation), much more so than expected,' he said." (Ozawa, 2012) Almost a year after the Daiichi nuclear disaster, 987 out of 1000 reported applicants still have had no monetary compensation from TEPCO, and have had to fend for themselves.

It should also be noted that the applicants are not all individual people; some applications for compensation are for entire families, and some of those families are facing financial ruin because of this disaster. Ozawa tells the story of one such woman: "Mia Isogai, 31, who fled with her husband and two-year-old son to Yokohama, said the family was struggling to make ends meet and without more compensation faced bankruptcy. 'We are paying for food and utility expenses from my part-time job. We can't even pay rent,' she said, adding her husband is still looking for a new job." (Ozawa, 2012) The monetary problems of these evacuees are compounded by the fact that many are finding it difficult to find new jobs, which is another common problem among those affected by the nuclear disaster.

Those who have been evacuated or have lost their homes and jobs couldn't depend on financial compensation or lenience for their situation, and so have had to fend for themselves monetarily. Unfortunately, many have found it difficult to find new sources of income. According to a *Daily Yomiuri* article titled "Many in Fukushima jobless," most of those who were evacuated because of the Daiichi nuclear disaster have been unable to find employment: "Nearly 70 percent of temporary housing unit residents in Fukushima Prefecture, who were working before the March 11 disaster, have not been

able to get jobs since, according to a prefectural government survey. The survey results showed many became unemployed because of the nuclear crisis." ("Many in Fukushima jobless," 2011)

This is attributed to the fact that many of these evacuees held jobs in areas that were evacuated, and thus reentry was restricted or banned. Among the unemployed evacuees they surveyed, "62.9 percent of the pollees under 65 want to get jobs and 57 percent want to work full-time." ("Many in Fukushima jobless," 2011) As for the reasons given for not seeking employment, "[...] about 60 percent said they were too old, and about 10 percent said it would be difficult for them to do anything as their future is uncertain." ("Many in Fukushima jobless," 2011) It is especially difficult for those living in temporary housing to find employment, since they might have to move to another shelter and leave their newly-acquired job if the distance is too great. This in fact could be the main factor in the unemployment problem among the evacuees: "Because many local residents have had to live in temporary housing units away from their homes due to the nuclear crisis, it is feared unemployment is more serious in the prefecture." ("Many in Fukushima jobless," 2011) This housing issue is another significant problem facing the evacuees from the areas around the nuclear disaster.

When the residents of the areas around the Daiichi nuclear plant were evacuated, no one knew how bad the damage was, or how long it would be before the evacuees could return to their homes. According to "Silenced by Gaman," published one month after the crisis, officials from the central government didn't anticipate that these people would still be living in temporary shelters more than a year later: "[...] there is no grand plan for dealing with the tens of thousands of evacuees - many in their 70s and 80s - from

towns near Fukushima who are living in temporary shelters." ("Silenced by Gaman," 2011) This could be attributed to lack of foresight by the central government, but there also seemed to be a lack of involvement from the locals to bring attention to this issue: "[...] locals speak of their need for housing and places to work, but their communities have not organized to press those claims." ("Silenced by Gaman," 2011)

Because of this inaction, many evacuees were constantly shuffled from one shelter or apartment to the next. Some are still living in temporary shelters today, more than a year and a half after the nuclear disaster. Mizuho Aoki's article "Nuclear refugees struggle to cope with uncertain future" describes the living situation of Miwa Kamoshita and her family after they evacuated from Iwaki. For five months her family had to move to five different temporary residences, and by the time the article was published they were only allowed to stay in an apartment in Tokyo until July 2012: "Although Kamoshita is relieved to have a secure abode for the next 12 months, the family has no idea where they will go when the exit date comes, still unable to figure out how to establish a stable family life now ruined by the nuclear disaster." (Aoki, 2011) The situation many evacuees found themselves in was further exacerbated by the fact that shelters were being closed before these people could find permanent housing: "Five months after the disaster struck, local governments have started closing shelters. This is forcing evacuees to scatter to separate apartments and temporary housing built by authorities." (Aoki, 2011) Without permanent housing, and with few employment opportunities, many evacuees appear to have been forsaken by their communities and Japanese society in general.

However, it seems that attempts to fix the housing situation for the evacuees are being made. In an article from *The Japan Times* titled "'Temporary towns' in works for Fukushima displaced," four municipalities in Fukushima which were evacuated due to the Daiichi nuclear disaster have collaborated on a plan for four "temporary towns" for evacuees to reside in until they could return to their original homes: "The draft policy also provided a timetable for the evacuees' return and specifics about measures to promote the four towns' decontamination, compensation for contamination, and employment in the affected areas." ("Temporary towns' in works for Fukushima displaced," 2012) This initially seems like a great plan; the evacuees will finally have long-term housing, and they will have employment opportunities. However, I wonder how long it will take for the evacuees to get these things, especially "compensation for contamination," since many still haven't received any compensation from TEPCO. Also, will placing them in these cities further stigmatize them, since they are being separated into their own community instead of being reintegrated into Japanese society?

With all these hardships that the evacuees have had to endure: fear for their own health, discrimination and stigma, and various economic problems, it shouldn't be surprising that the nuclear disaster has had a pronounced psychological impact as well. In the next section, I'll discuss how this disaster has affected the mental health of those affected by it, as reported in the media.

The Effects on Mental Health

For an evacuee from the Daiichi nuclear disaster, just dealing with one's material needs, such as housing and employment, can be extremely stressful. When one has to

additionally deal with fears about health, discrimination and feeling isolated from society, an increase in stress-related mental disorders can be expected. And in fact there has been an increase in hospitalizations for mental disorders related to the Daiichi nuclear disaster, mental disorders are being exhibited in children affected by the nuclear crisis, and mental fatigue is contributing to premature deaths in survivors of the Triple Disaster.

According to an article in *The Mainichi* titled "Fear of radiation from Fukushima accident led to psychiatric disorder hospitalizations," "Some 24.4 percent of people who were hospitalized in Fukushima with psychiatric disorders in the wake of the outbreak of the crisis at the crippled Fukushima No. 1 Nuclear Power Plant had done so possibly because of fears of radiation exposure, according to the results of research conducted by psychiatrists at Fukushima Medical University." ("Fear of radiation from Fukushima accident led to psychiatric disorder hospitalizations," 2012) Stress from living in temporary shelters was also cited as a factor in these diagnoses. Of 410 patients, 133 had been diagnosed with depression, acute stress disorder or posttraumatic stress disorder (PTSD) that was directly or indirectly related to the Daiichi nuclear disaster. Of those 133 patients, "Nearly half of them had stress from their lives as evacuees, 40 percent of them were worried about the effects of radiation on themselves, and 30 percent of them expressed fears that their children and families could be affected by radiation." ("Fear of radiation from Fukushima accident led to psychiatric disorder hospitalizations," 2012)

This disaster has also had a profound influence on children affected by the disaster. In an article from *The Japan Times* titled "Disaster-area kids under hard stress," children in Fukushima have had their daily lives drastically altered because of their parents' fears: "[...] in Fukushima fears of radiation among adults appear to have had an

impact on children. 'I can't let my children play outside,' said Yuka Arimatsu, 35. [...] Families fret about allowable cumulative radiation doses and what to feed their children on a daily basis." ("Disaster-area kids under hard stress," 2012) This fear has begun to affect their children's behavior as well, and it might even affect their future physical development:

Yuji Tsutsui, 47, a professor of experimental psychology at Fukushima University, said many 3-year-old children studied in areas with high radiation levels are displaying spoiled attitudes and clinging behavior towards their parents. Tsutsui attributed the trend to parents with radiation-related anxieties and expressed concern that the future physical strength and weight of their children may be affected by trauma. ("Disaster-area kids under hard stress," 2012)

More severe behavioral problems have also been observed in children affected by the nuclear crisis: "The three prefectures [Miyagi, Iwate and Fukushima] all have reported more cases of fighting among children as well as rises in sudden outbursts of violence and aggression." ("Disaster-area kids under hard stress," 2012) Although Fukushima Prefecture has acknowledged the problems, there isn't enough support available at this time to help these children deal with their psychological issues: "Mental health experts say that although the central government has increased the number of school counselors with the aim of providing sufficient mental care, there are still not enough." ("Disaster-area kids under hard stress," 2012) Without the proper support, these behavioral problems could develop into something more serious that is not only damaging to Japanese society, but could lead to these children being ostracized and isolated from their community. Unfortunately, this lack of support for those experiencing mental stress has already taken its toll on some Fukushima residents.

An article by Hiroko Nakata titled "Fatigue from living the life of evacuees proving fatal" discusses how mental stress from the Daiichi nuclear disaster could even be contributing to premature death. According to a survey released by the Reconstruction Agency, "Physical and mental fatigue from the stress of evacuation is believed to be the main cause behind the deaths of those who survived the earthquake and tsunami last March but have died since." (Nakata, 2012) Out of 529 survivor-deaths in Miyagi, Iwate and Fukushima, 249 were from this evacuation-related fatigue. Of those 249, 66 were attributed to "stress after the earthquake and tsunami," and 26 "reportedly died because of stress from the nuclear power plant crisis." (Nakata, 2012)

Frequent evacuations have actually caused many fatigue-related deaths in Fukushima Prefecture, and elderly people make up a very large portion of those deaths:

In Fukushima Prefecture, which hosts the crippled Fukushima No. 1 power plant operated by Tokyo Electric Power Co., 181 of the 321 people who died after the disasters, or 56 percent, succumbed to fatigue while evacuating. The agency noted that many evacuees had to move several times to new shelters as the area being evacuated grew. People 70 years old or older accounted for 91 percent of those who died. (Nakata, 2012)

This lack of support for evacuees has not only contributed to an increase in mental health issues, it has actually become a significant factor in the premature deaths of those who have survived the Triple Disaster.

Analyzing the Articles

Of the sixteen articles and one book discussed in this chapter, eleven articles were from Japanese news organizations, and the book (published in the U.S.) and five articles were from sources outside of Japan (specifically, the U.S., Canada, Britain, Russia, and

France). I will hereafter refer to articles from those news organizations as "foreign" articles.

During my analysis of these sources, I noticed a few patterns. Economic troubles among those affected were specifically covered by four of the articles; two were Japanese, two were foreign, and all were published within a year of the Daiichi nuclear disaster (from April 2011 to March 2012). Environmental issues such as problems with produce and clearing debris was discussed by the book and five articles. Four of the articles were Japanese. This isn't surprising, considering this is obviously a problem that directly affects Japan more than it does other countries. These articles were also published within a year of the disaster (April 2011 to March 2012), so it seems the Japanese public was concerned about these topics for a long period of time, if not still.

Mental health problems, however, seems to be a more recent development. It could be that this topic wasn't considered a significant problem among Japanese people, and thus little was done to prevent those affected by the disaster from developing these issues, and as a result mental health problems are starting to be more common. Three of the articles focused on mental health; all were from Japanese organizations, and all were published more than a year after the disaster (March 2012 to September 2012).

Four articles and the book focused on the topic of radiation stigma and discrimination, and all four articles were published within seven months of the disaster (April 2011 to October 2011). It could be that this stigma was an initial, irrational reaction by some people to the devastating effects of the Triple Disaster. Obviously, rational thinking can become much more difficult during a crisis situation. Interestingly, only one of the four articles that discussed discrimination was from a Japanese source;

the other three and the book were from foreign sources and news organizations. Thus, it could be possible that the Japanese public is reluctant to admit that a discrimination problem exists.

I noticed that among the topics discussed in these articles, the subject of marriage discrimination was only brought up in the book. In fact, I could not find one news article during my search that mentions the possibility of marriage discrimination against those exposed to radiation from the nuclear disaster. Considering that some people are making comparisons between Fukushima and the bombings of Hiroshima and Nagasaki, I thought this was unusual. It could be that marriage discrimination isn't a problem at all, or it could be that news organizations in Japan have neglected to investigate this topic.

Conclusion

The crisis at the Daiichi nuclear power plant has affected many different aspects of the lives of the people of Fukushima. Being exposed to such high levels of radiation means fearing for one's own health, as well as fearing the criticism and avoidance of those in the local community and all of Japanese society. Comparisons to those exposed to the A-bomb and cultural conceptions of radiation contribute to the stigmatization of those exposed to radiation from the nuclear disaster. This radiation stigma has caused Fukushima's agriculture industry to suffer, and their earthquake and tsunami debris can't be disposed of because other prefectures aren't willing to take it for fear it might be contaminated. Children and adults alike are bullied, discriminated against, and avoided by the rest of Japanese society because of their exposure to radiation.

Those who evacuated from the areas around the Daiichi nuclear plant have experienced various economic difficulties, such as a lack of monetary compensation or leniency regarding loans and mortgages, unemployment, and problems finding permanent housing. Their mental health is also affected, evidenced by the increase in hospitalizations for stress-related mental disorders, the behavioral problems displayed in children, and the increase in fatigue-related deaths due to stress from evacuations.

Based on my analysis of these news articles, it seems that a couple issues might not have been adequately investigated, at least by Japanese news organizations. The possibility of marriage discrimination was never brought up in any of the articles I researched (only in the book), and although a few foreign organizations have discovered problems with discrimination, there seems to be a lack of news coverage in Japan on this subject. It also seems that mental health problems might become an issue, since they have been reported more often in recent articles. Because of the recent development of mental health problems, and the fact that it is unclear whether radiation stigma or marriage discrimination are significant problems, I concluded that my interviews should focus on these topics in order to determine if they are issues that truly need addressing.

CHAPTER VI

**INTERVIEWS WITH JAPANESE CITIZENS ABOUT FUKUSHIMA AND THE
TOPIC OF STIGMA**

News articles covering a disaster are often sensationalized in order to increase sales, and sometimes news organizations completely overlook other issues that need addressing. For these reasons, it's important to also collect information from primary sources, in this case Japanese citizens, to get a better idea of how people are truly reacting to this crisis. Because my analysis of news articles covering the Fukushima Daiichi nuclear disaster revealed a lack of Japanese news coverage on the topics of radiation stigma, marriage discrimination and possibly even mental health discrimination, I decided these were important topics to focus on in my interviews. In this chapter, I will use excerpts from interviews conducted with 45 Japanese participants to illustrate my findings in regards to radiation stigma, marriage discrimination, and mental health issues.

In the interview excerpts, 1: indicates the voice of the interviewer (myself), which will be in italics. 2: indicates the participant, and 3: indicates an additional participant, because three interviews were done with two participants at the same time, at their request. The text for participants #2 and #3 will be will be in bold type.

Radiation Stigma

In regards to overall discrimination, the participants gave varied responses, but the majority claimed that there has been some discrimination towards people from Fukushima. Of the 45 participants, 20 explicitly said that it has been a problem. Of these

20, 9 of them had actually experienced discrimination or knew someone personally who experienced discrimination (8 were from Fukushima Prefecture, and 1 was from outside Fukushima Prefecture). 15 said it might be a problem or they were somewhat unsure; for example, they had heard about these issues on the news or from other people, but didn't know if it was true or witness it personally. 10 participants explicitly said that discrimination was not a problem, only one of whom was living in Fukushima Prefecture and had only been living there for 3 years.

Many of the participants who said it might be a problem agreed that at least a small portion of the population has some of those feelings. Hidei, Junko and Jun acknowledged that discrimination could possibly be an issue, but didn't think the problem was significant since most people are sympathetic and only a very small percentage of the population discriminates against those from Fukushima:

[Interview #17: Hidei - male, 27, Tokyo]

2: It doesn't bother me personally, but it might bother some people in communities, which may in turn cause some people to hesitate about entering them. I guess in that sense there is something to worry about, but as for me... you know Japanese scholars and politicians have announced that there is no harm from people, that it isn't contagious, so it doesn't bother me at all.

[Interview #19: Junko – female, 65, Hiroshima]

1: If someone from Fukushima-ken moved into the local community, do you think the people in the community might feel a little anxious about people from Fukushima moving into their area, because of their exposure to radiation?

2: Ahhh... I don't know, but I don't feel such kind of, uh, emotional reaction among my neighboring, uh... area. People are, rather, very sympathetic and they keep saying that they would like to do anything they could do to help those people.

1: Mmm. Have you heard of any, uh... I hear in the news about some sabetsu (discrimination) or ijimeru (bullying) towards people from Fukushima.

2: Me too, yes. Quite regrettable.

1: Yeah, it's unfortunate.

2: I don't know... I think-I hope and I think that people are more sympathetic to those people who suffered from not only earthquake, but also atomic, er, the nuclear accident. In media, sometimes in newspaper, those

kinds of emotional, anti-... how do you call it... a kind of *sabetsu*-discriminatory attitude. But I think most of the Japanese people are rather sympathetic to those people.

[Interview #32: Jun – male, 42, Tochigi]

1: Do you think people from other prefectures are scared of or nervous around people from Fukushima because they've been exposed to radiation?

2: I've heard of that happening, but the number of people [it happened to] is limited.

1: Mmm.

2: So... In the newspaper or TV, they speak such news, so we hear such news, but I don't think [that is] so.

1: Yes. That's why I'm here. News can be sensational, but is it true?

2: In that kind of managing, they need to write sensational type of stories to sell more, so in the result...

1: Yeah, yeah.

2: The people in general don't think that way.

Some participants, such as the ones above, considered most reporting of discrimination to be exaggerated and sensationalized in order for news organizations to increase sales, while some said discrimination was an irrational response to a crisis, as Manami said in an interview that was transcribed only (she didn't want to be recorded):

[Interview #29: Manami – female, 75, Tokyo]

2: I don't want to criticize Japanese people, but I think they are being irrational. They are being controlled by things like their fears and the media. Trying to solve the problems we face now is more important than worrying over future potential problems.

Among those who said discrimination was certainly a problem, 12 of them were from Fukushima Prefecture. Because this potential stigma directly affects them, they were acutely aware of it, as Ren and Masami revealed in their interviews:

[Interview #4: Ren – male, 25, Fukushima]

1: Um, do you think there's going to be any problems with... like, are there any hardships that people you know in Fukushima are facing now, as far as being accepted by the community or finding a job? Do you think people are supportive?

2: Ah... I mean, like... uh... I'm not sure.

1: Mmm.

2: If I go back to Fukushima, and... um... *long pause, laughs nervously*

*1: Daijyobu (It's alright) *both laugh**

2: ... Discriminate, is that the word?

1: Mmm. So you're not sure if people...

2: Yeah.

1: Will be discriminated against-

2: Yeah yeah.

1: for living... Okay.

[Interview #7: Masami – female, 36, Fukushima]

1: Are you worried about the future? For example, ten years from now do you think there will still be problems?

2: It's different now. I have a baby. Now I'm worried about my child's future because I don't know what's going to happen.

1: Mmm. Maybe your baby will experience discrimination in the future?

2: Perhaps.

1: Outside Fukushima, in other prefectures?

2: That exists even now.

1: I see, even now.

2: When people hear someone is from Fukushima, there is some discrimination. I want to give birth to my kid[s] in Fukushima, but I don't know if they will be discriminated against or bullied in the future. It worries me, and I want to make sure that doesn't happen.

Although it didn't affect them directly, some participants from outside Fukushima also admitted there was a stigma against those exposed to radiation. Kenta, who is from outside Fukushima Prefecture, said that discrimination was a fairly common problem:

[Interview #21: Kenta – male, 35, Tokyo]

1: If someone from Fukushima moved into the community, do you think the people in the area would feel anxious or worried because of their exposure to radiation?

2: I don't think that at all, but there may be those that do. It's not like radiation can jump from one person to another, but I guess people are worried about the stuff they bring may be contaminated? I still think it doesn't affect people though.

1: Do you know of any troubles or discrimination that people from Fukushima are experiencing when they move or travel outside of their prefecture?

2: I heard about it. That kind of thing is a common occurrence in Japan, so without asking, most Japanese people know that.

When asked for the reason why these people were being discriminated against, most participants said it was a lack of knowledge on the subject, but specifically they mentioned the concept of radiation as a contagious substance that can spread to others.

Kaoru, Sana, Suzuko, Akane and Satoshi, all from Fukushima Prefecture, pointed this out in the following excerpts:

[Interview #8: Kaoru – male, 20, Fukushima]

1: Why do you think there's discrimination?

2: I think it's because radiation can't be seen, and people generally don't know enough about it so they are afraid. If we had more knowledge about what it is, the fear would go away. But the general public doesn't know what radiation is, so they are extremely afraid. That's why they discriminate against those exposed to radiation, because they are afraid of them.

[Interview #3: Sana – female, 23, Fukushima]

1: [...] Like, people think "Oh, they have radiation sickness, they can infect me or other people." Do you think people think the same thing of... people in Fukushima, who lived near the...

2: Hmmm. It's the same as... it's the same. Like, right after the nuclear...thing happened, people had that feeling, like...

1: So, immediately.

2: Yeah.

1: Their first reaction.

2: Their first reaction was like "Don't touch me" or "You have radiation"...

[Interview #5 and #6: Suzuko and Akane – both female, 39 and 34, Fukushima]

3: I don't really know about it, about the radiation, but, like... people outside of Fukushima thinks-

2: Yeah.

3: They go like *gestures* "Uh, don't come to our place."

2: Yeah, yeah.

3: "You're getting us radiation."

1: Oh, so they're afraid that they'll bring it with them.

3: Yeah. *laughs* I know, really. *laughs and shrugs*

1: I see.

[Interview #36: Satoshi – male, 41, Tokushima]

2: Only few people have such, a, discriminating feeling against Fukushima people. So maybe, if they touch people from Fukushima, maybe they'll be influence by the nuclear energy or something like that. Such kind of discriminating feelings are limited only to very few people. Many Japanese now have enough information about nuclear, uh... It's not like an influenza, or something like that.

Daisuke and Kiyomi, who are from outside Fukushima, also said that this idea that radiation is a transmittable substance could be one reason for discriminating against those affected by the nuclear disaster:

[Interview #13: Daisuke – male, 28, Osaka]

1: Do you think that people from Fukushima might be discriminated against because of the disaster? For example, if they take a trip outside Fukushima to other prefectures, do you think people might have strong feelings about those people coming?

2: Yes, I think so, because even though those subjects, irradiated people, they thinks that it's... what's it called, passive? To other people-

1: It can be transmitted?

2: Transmitted, right. But, uh, other people still think that it's transmitted. So people don't really want to tell other people that they're from Fukushima, because they know they're gonna be discriminated, no matter what.

[Interview #39: Kiyomi – female, 40, Hiroshima]

1: Do you know someone from Fukushima Prefecture?

2: Mmm. *nods*

1: Did that person have any troubles? For example, discrimination or other people being anxious around them?

2: My friend originally from Fukushima has not been directly exposed to the radiation. But every time that person visits home and brings something back, I really worry whether those things have radiation or not. My friend tells me to be afraid of what I should be afraid of. Fear the right things by knowing the facts about radiation. People don't, and that's why discrimination and bullying is so prominent. Radiation isn't contagious. But I still wonder if any of it stuck to her hair when she comes back to Hiroshima. I know it's strange, and it's weird to think about 100% radiation coming back with her.

The people of Fukushima have apparently experienced some discrimination because of this disaster, and the participants noted several ways that people have experienced this discrimination. Akito said that it has happened on social networking sites:

[Interview #9: Akito – male, 38, Fukushima]

1: Okay. So you've heard about it, but has it happened to anyone you know?

2: Yeah, yeah.

1: It has?

2: On Twitter or Facebook, or other social network systems. I asked my friend who just, uh... like, wrote on the wall, or...

1: *Mmm.*

2: **After the...especially after that [accident], so maybe one... for one year or so... less than one year.**

1: *Mmm.*

2: **But now, I don't really hear about that.**

Discrimination has also been happening amongst school children, in the form of bullying and ostracizing. Yui, Daisuke, Nao and Kaoru described this development in the following excerpts:

[Interview #38: Yui – female, 30, Nagano]

2: **I think most of the people are not scared of them, because we are clever enough to know that people from Fukushima aren't dangerous, are not radiated. So... but, I don't know. I hear some news or read some news that kids from Fukushima are, like, *ijimareru* (being bullied) in school. And it's sad, but teachers and parents should tell them that they should not be afraid of them. I think it's only a kids' thing.**

1: *I see. Do you think that maybe kids learn it from their parents?*

2: **Yeah, mmhmm.**

1: *Like, maybe their parents are afraid, and they might not say it, but the kids learn from... just as a hypothesis.*

2: **Yeah, maybe. Hmm... maybe, but I think it's rare.**

1: *Mmm, so. (mmm, yeah.) And sometimes kids are just more... I don't want to say mean, but-*

2: **Yeah, like cruel sometimes. Kids are cruel and mean sometimes, because they don't know.**

[Interview #13: Daisuke – male, 28, Osaka]

1: *Have you heard any stories about people that might have been discriminated against because of their being from Fukushima?*

2: **Yes, but it's not adult people; it's basically a 'child' effect, more likely. Yeah, I have heard a lot of stuff that the people from Fukushima, they get out of the evacuation area to go to the schools in Tokyo, and then they often get into those bullyings. In schools, I heard a lot of cases.**

1: *So you think-are they bullied because of being from Fukushima, and not from other prefectures that people had to move from because of the earthquake or the tsunami?*

2: **Yeah, uh, because those cases actually describe where the children, the bully-er, has used terminology that really related to those Fukushima nuclear plants. So, like, uh, what do you call it... uh, *genbaku*, (atomic bomb,) or something like that. It's specific terminology that's related to nuclear radiation.**

[Interview #35: Nao – female, 37, Fukushima]

1: In the news, I sometimes hear about troubles that people in Fukushima are facing. For example, when some people move or travel to other prefectures they've experienced discrimination or bullying. Have you heard of any examples, maybe from friends or family?

2: I haven't heard any cases of bullying directly, but for my friend who evacuated to Yamagata, it's been a big change for her kids getting used to their new surroundings. And they say it's been really hard for them being separated from their father. As for discrimination, I haven't personally seen any, but I've heard a lot of people having their cars defaced and things like that. If you look on Facebook, you can see uploaded pictures. If she wears a mask, she'll be pointed out and asked, "are you worried about radiation?" Even among the kids, they bully each other...

[Interview #8: Kaoru – male, 20, Fukushima]

1: Are you worried about discrimination from people outside Fukushima, in other prefectures?

2: After the disaster happened, I heard from a friend that rocks were being thrown at cars with a Fukushima license plate, bad things were being said about Fukushima, and the kids were being bullied.

In many cases, people from Fukushima were discriminated against when they were evacuated or traveled outside their prefecture. They were either turned away from businesses, or had their cars defaced or vandalized, as Nao and Kaoru mentioned above. This seems to be the most common form of discrimination discussed in the interviews. Riku and Ryoko, who are from outside Fukushima, discussed this in their interviews:

[Interview #1: Riku – male, 21, Yamanashi]

1: [...] I've heard from reading newspaper articles that refugees moving into the new communities... they're worried that some of them might be having troubles with fitting in with the communities. Have you heard anything about that, or do you-

2: I have. I heard that some, there are some kinds of discrimination going on for people from Fukushima. Because, uh, many people are worried about the radiation they might have, which doesn't really prove, or like... like no one says, "someone evacuating from Fukushima has some risky or dangerous radiation" or something like that-

1: Mhmm.

2: -but like, people kind of worry about that, and I think there's some discrimination going on, so they don't want to come to, like... of course they need someplace to evacuate-

1: Of course.

2: -outside of Fukushima because of radiation, because they lost their houses and stuff like that. But like, people in, for instance, um... Tokyo, like... maybe it's not happening in Tokyo, but like, for instance if there is some conditional(?) house-housing in Tokyo, and Fukushima... people from Fukushima trying to get there... like, people in Tokyo are kind of refusing it, 'cause they think people from Fukushima are bringing radiation, and they're gonna affect their-

1: -Bringing it with them.

2: Yeah.

[Interview #2: Ryoko – female, 22, Aichi]

1: I've heard some of them have still not been able to find a house or employment.

2: Yeah... and I think after three months since the earthquake happened, some hotels and some, like, local people's houses, they opened up their rooms so that *hisaisha* can live there for temporary- for free... yeah.

1: That's nice.

2: But some hotels were like "No, please don't..."

1: So some didn't want them.

2: Some, yeah. So not everyone was generous about this situation.

Many of these accounts of discrimination while traveling outside Fukushima Prefecture have either been experienced firsthand or by someone the participant personally knows. Mika, Akane, Nao, Ai, Ayaka, Ryu and Sana, all from Fukushima Prefecture, described their experiences:

[Interview #31: Mika – female, 33, Fukushima]

1: In the news, I sometimes hear about troubles that people in Fukushima are facing. For example, when some people move or travel from Fukushima to other prefectures they've experienced discrimination or bullying. Have you heard of any examples, especially from friends or family?

2: I did hear about my friend who went to Tochigi last year on a trip. Their car was scratched. I haven't heard much once it hit 2012. As for me, when I went to Tokyo last year in April, I heard that I had to show a certificate that I was inspected before any hotels would let me stay. That had me worried as I made reservations for accommodations. It wasn't a problem though. That's my personal experience. I had doubts about being able to book a hotel room and being refused because I'm from Fukushima, but I went to Tokyo anyway bearing those worries.

[Interview #6: Akane – female, 34, Fukushima]

3: I don't know personally, but my friends went to Tokyo from Fukushima.

1: Mmm...

3: From Fukushima, they escaped to Tokyo, and they wanted to get a hotel, but hotel manager said like “Oh, you’re from Fukushima. No.”

[Interview #35: Nao – female, 37, Fukushima]

1: Do you think people from other prefectures are scared of or nervous around people from Fukushima because they’ve been exposed to radiation?

2: Everybody is different, and to be honest, I am a bit worried about being discriminated against, like how the people of Hiroshima were after their incident. I can't say that there won't be discrimination for us, in fact, we are being exposed to radiation in Fukushima everyday now, and I have to admit there are times when we take one step out of the prefecture and mention that we are from Fukushima, there are faces that cringe a bit.

[Interview #10: Ai – female, 31, Fukushima]

1: Are you worried about discrimination from people in other prefectures?

2: When my parents go on a trip, they are always asked where they are from. They can't answer that they're from Fukushima. They are always asked that at any tourist destination, and without mentioning Fukushima or Tohoku, they usually use a vague answer such as the Kanto region. Fukushima license plates have sort of been blacklisted, people didn't like seeing them. We experienced discrimination as some places pretty much banned us from entering the premises. I didn't leave the prefecture for a whole year. I stayed in Fukushima.

[Interview #33: Ayaka – female, 31, Fukushima]

1: In the news, I sometimes hear about troubles that people in Fukushima are facing. For example, when some people move or travel from Fukushima to other prefectures they’ve experienced discrimination or bullying. Have you heard of any examples, maybe from friends or family, or personal experience?

2: I heard from a friend that they were the target of discrimination, so I stayed within the prefecture as much as possible. Because I was afraid. My friend said that her car had pranks played on it because of the Fukushima license plate, so I was afraid to leave Fukushima Prefecture. I stayed in the prefecture, but my friend who went out of the prefecture was discriminated against.

[Interview #30: Ryu – male, 37, Fukushima]

2: I heard from one of my colleagues about when he left Fukushima by car and he ended up being refused into shops because people there could tell that he was from Fukushima by his license plate. Another colleague told me that he was also refused by a gas station employee. None of these things happened to me personally, but still, I was really shocked and sad when I heard about it. I wonder how I would react to people from Fukushima if I was from another prefecture. I actually have no idea. Maybe I would react the same like the people who'd refused my friends... At first, I thought it was natural for

people from other prefectures to react that way if the only information they got was through the media...but I felt sad anyway.

[Interview #3: Sana – female, 23, Fukushima]

2: Uh... the first time, like much earlier, when the nuclear things happened, I heard some people got, like, bias or something towards people from Fukushima. Like my mother... my mother went to other prefectures by her- by her car, and the, the car *gestures a licence plate* says from Fukushima.

1: Yeah.

2: So someone threw a... a stone to her car.

1: Hidoi! (That's awful!)

2: And then, I heard another story that, like, one of my friends got an interview, at the barbershop, like a beauty salon.

1: Mmhmm.

2: And then passed the exam, but just because she's from Fukushima, the result was cancelled.

1: Oh, so she interviewed for a job.

2: Yeah.

1: Ah, but because... I see. Zannen. (That sucks.)

2: But... but recently, I don't hear those stories.

1: Okay, so only immediately afterwards.

2: Yeah.

Among the 8 participants from Fukushima who experienced discrimination directly, 4 of them have said that they believe it is much less of a problem now. As noted before, this could be because some people's initial reactions to a crisis are irrational, and fear could be the cause of some of these reactions. It should also be noted that two participants, Akane and Yoko, were expecting discrimination but experienced the opposite; they received many kind words and support from those outside Fukushima Prefecture. Akane, Ryu and Yoko reveal their positive experiences in the following excerpts:

[Interview #6: Akane – female, 34, Fukushima]

3: So, me and sister went to places like Niigata and Sendai, but people were really really nice.

1: Mmm.

3: And we were kind of-kind of a little bit worried about, like, maybe, like, they know where we are from, right? The number-plate says Fukushima, so they might do something to our car *laugh* but they didn't get anything.

[Interview #30: Ryu – male, 37, Fukushima]

1: Are you worried about discrimination? Or about other people's thoughts and feelings?

2: I was worried last year, but it has been a year now since the nuclear incident, so I'm not that worried anymore. People are calmer now as we have more accurate information. Also it's encouraging when I hear from my friends from other prefectures tell me they're there for me and ask about my well-being. So yeah, I'm definitely OK now.

[Interview #34: Yoko – female, 36, Fukushima]

1: In the news, I sometimes hear about troubles that people in Fukushima are facing. For example, when some people move or travel from Fukushima to other prefectures they've experienced discrimination or bullying. Have you heard of any examples, maybe from friends or family?

2: I heard stories from friends about cars being scratched and people refused service from taxi drivers, but me, my family, nor any of my friends have experienced discrimination. In fact, it's the exact opposite. We've received words and presents of encouragement telling us to push on and do our best. We even received a memorial sign book, with messages full of encouragement. So rather than discrimination, I think we received more support than anything. Personally, my lifestyle hasn't changed since the nuclear disaster. Though it pains me to see on TV what some are going through, I have not actually suffered too many damages. That's why rather than feel sad, I feel very grateful for all the support because it's a little too much for me. Even though we're fine, a lot of people were worried for us.

Although there were some instances where my participants were personally discriminated against, this does not reflect everyone's experience, and it should be noted that there are those in Japan who have been very supportive as well. Despite this, however, it's apparent that radiation stigma has been a problem very recently, and may still be a problem today. It's unclear whether it will still be a problem in the future, but radiation stigma could certainly become a problem again, at least initially, if this type of nuclear disaster ever occurs again in Japan.

Potential Marriage Discrimination

During my interviews, I wasn't sure how I should bring up the topic of marriage discrimination. The lack of news coverage could have been because it wasn't considered an issue, or because it really wasn't as issue. But, it could have also been because it was an extremely sensitive issue that I needed to approach carefully. In the first eight interviews I didn't ask about marriage discrimination directly; I asked about current examples of discrimination and potential discrimination problems in the future, in order to see what they felt comfortable discussing. To my surprise, the first several participants described potential marriage problems without me asking about them specifically.

In fact, it turned out to be the most common form of discrimination discussed among the participants in the interviews. Out of 45 interviewees, 25 said explicitly that marriage discrimination could be a problem when those from Fukushima Prefecture want to marry someone from outside their prefecture. Of those who said this, 9 were from Fukushima and 16 were from other prefectures. Apparently, both Fukushima participants and participants from other prefectures agreed on this topic almost equally; more than half of the participants from both groups (9 out of 14 total participants from Fukushima, and 16 out of 31 total participants from other prefectures) said it could certainly become an issue.

16 participants said that they weren't sure if it would become a problem, or they weren't explicitly asked and didn't bring this up as an issue. 4 participants (Makoto, Kaede, Jiro and Shutaro) explicitly said that marriage discrimination wouldn't be an issue, and all of them were from outside Fukushima Prefecture. Their responses are in the following excerpts:

[Interview #18: Makoto – male, 27, Tokyo]

1: Do you think people from Fukushima might face discrimination in the future? For example, ten years from now, might there be marriage issues?

2: Personally I won't discriminate at all. I'm not sure how society feels. Personally I've never thought about that regarding my hometown.

[Interview #22: Kaede – female, 75, Tokyo]

1: Do you think possibly in the future people from Fukushima might have troubles? For example, getting married to people outside the-

2: I don't think so. I'm not quite sure about health problems, but as far as - discrimination, you said?

1: Mmhmm.

2: I don't think so.

[Interview #23: Jiro – male, 74, Tokyo]

1: Do you think people from Fukushima might have problems in the future? For example, might there be discrimination in marriages if they marry someone from another prefecture because of the fear of radiation?

2: It doesn't bother me. As you know, the atomic bomb hit Hiroshima. My father was exposed to radiation, but he didn't face any sort of discrimination. If someone from Fukushima were to become a part of my circle, I wouldn't discriminate against them.

[Interview #20: Shutaro – male, 68, Tokyo]

1: Do you think people from Fukushima might face discrimination in the future? For example, might there be problems when they want to marry someone from another prefecture, because of the fear of radiation?

2: I'm not sure about that. Actually, I have never heard of anything like that. I think what it comes down to is not what that couple thinks about getting married, but what their parents might say in opposition to it. But I have never heard of such a case before.

Tatsuya and Daisuke, both from outside Fukushima Prefecture, said they might be concerned about marrying someone from Fukushima, but only because they were worried about that person's health and how radiation would affect it. They didn't believe it would be a problem in regards to discrimination:

[Interview #26: Tatsuya – male, 25, Fukuoka]

1: Do you think people from Fukushima might have problems with discrimination in the future? For example, when they get married to someone from another prefecture, would them being from Fukushima cause problems because of the fear of radiation?

2: I'm not sure because I haven't experienced it myself, but when I do get married, I would be worried about her health and body. Not that I would bully her about it though.

[Interview #13: Daisuke – male, 28, Osaka]

1: So do you think that they might have some problems in the future as well? I've heard examples of people having trouble getting married because their spouse's parents might say "Oh, we don't think you should because of health issues," or whatever. Have you heard about that as well?

2: Uh, no, because we haven't really observed anyone that actually died from the nuclear radiation problem; we haven't really observed that case yet. But when it comes down to if the radiation really is affective, in terms of health, and it gets on the news, then there are gonna be problems like that in the future, yes. But it hasn't appeared yet.

Sakura said marriage discrimination might be one of the problems people from

Fukushima will have to deal with, although she wasn't quite sure.

[Interview #40: Sakura – female, 62, Hiroshima]

1: Five years or ten years in the future, do you think people from Fukushima might have troubles because of the disaster? For example, might it be difficult when they want to marry someone from another prefecture?

2: I think there will be many issues.

1: With finding work, or marriage difficulties?

2: There might be those issues, I'm not sure. There will definitely be many.

Hidei and Shouta also were unsure; they themselves don't discriminate, but they couldn't

say for sure that other Japanese people wouldn't discriminate:

[Interview #17: Hidei – male, 27, Tokyo]

1: Do you think people from Fukushima might have some troubles in the future? For example, ten years from now, might there be marriage issues?

2: Honestly, I've never thought about that, and this is the first time I'm thinking about it. Currently, the scholars say there aren't any problems, so I'm not worried about it. If my fiancée was from Fukushima, I wouldn't have a problem with it, and although I wouldn't discriminate based on radiation/exposure, I can't say the same for everyone else around me. I don't want Japan to become a nation that discriminates.

[Interview #25: Shouta – male, 27, Ibaraki]

1: Do you think people from Fukushima might have problems in the future? For example, might there be discrimination in marriages if they marry someone from another prefecture because of the fear of radiation?

2: It doesn't bother me, but I imagine some might be perturbed. For example, if someone's home was in Fukushima but moved to somewhere closer to Kanto. It doesn't bother me though.

A few participants said that marriage discrimination was certainly possible. Sanosuke and Chiharu, who are from outside Fukushima, discussed how recent events could affect Fukushima residents in the future:

[Interview #14: Sanosuke – male, 28, Tokyo]

1: Do you think people from Fukushima might have some troubles in the future? For example, ten years from now, might there be marriage issues?

2: Everything seems normal now, but there might be that kind of problem 20 or 30 years down the line. Those born near the time of the nuclear incident might face those kinds of problems if they were affected...but I never thought about that until you asked me.

[Interview #41: Chiharu – female, 29, Tottori]

1: In Hiroshima, after the bombing, people had many problems: health, employment, marriage, and problems with discrimination. Do you think the people of Fukushima might have similar problems?

2: I'm originally from Tottori, and if I were to marry someone from Hiroshima, nothing about radiation would come to mind because it happened so long ago. But if I were to marry someone from Fukushima, it would worry me a bit because that is a problem that is happening now.

Kumi even admits that if she were going to marry someone from Fukushima, the radiation exposure might make her reconsider:

[Interview #42: Kumi – female, 56, Osaka]

1: Do you think people from Fukushima might have problems with discrimination in the future? For example, when they get married to someone from another prefecture, would them being from Fukushima cause problems because of the fear of radiation?

2: I won't be getting married in the future, but if I were to marry someone, it would be an issue. It would make me think twice. The radiation, that is. But if we had decided to get married, there's nothing else to do but accept every part of him. Even if he was exposed to the radiation, and you have thoughts of marrying this person, you have to accept the entirety of the situation. If it was me, that is.

Akito, from Fukushima Prefecture, also acknowledged that some people might discriminate against marriage partners because of radiation:

[Interview #9: Akito – male, 38, Fukushima]

1: I've heard that, um, for example in the future, if people from Fukushima maybe want to marry someone from outside the prefecture-

2: Mmm, yeah yeah.

1: They'll say "no, you can't." It'll be much harder.

2: Yeah yeah yeah.

1: And it's... I've heard it's because of the radiation. Do you think that's... that might happen in the future? Do you think?

2: Hmm...

1: 'Cause I hear about it, but is it true? Like, is this-

2: Yeah, that's-I've heard of that too. I've heard that information from, like, another... I don't know from where the information is coming from, but I've heard of that. Maybe some people care about that.

When asked about the reasons people from Fukushima might face discrimination in marriage, many mentioned the possibility of passing on genetic defects and health complications to children. Yuusuke, Takahiro, Keisuke and Kenta reveal this fear of passing hereditary problems on to future generations:

[Interview #16: Yuusuke – male, 26, Saitama]

1: Do you think people from Fukushima might be discriminated against because of their exposure to radiation? For example, ten years from now, might there be marriage issues?

2: I think they might.

1: For example?

2: I suppose if they get married and have kids, the kids might be something to worry about, and I would hate to see any kind of problems that might occur for future generations.

[Interview #27: Takahiro – male, 55, Kanagawa]

1: Do you think people from Fukushima might have problems with discrimination in the future? For example, would it be difficult for them to get married to someone from another prefecture?

2: It might happen.

1: Why might it be difficult?

2: I think one of the major reasons is being exposed to the radiation directly.

1: Why do you think there is this fear of radiation?

2: This isn't a scientifically proved opinion, but I think the primary cause is the fear of it passing on to the next generation through genes.

[Interview #24: Keisuke – male, 19, Tokyo]

1: Do you think people from Fukushima might have problems in the future? For example, might there be discrimination if they marry someone from another prefecture because of the fear of radiation?

2: I can see that. Not just Fukushima, but people from any area affected by the radiation will eventually get married and have kids. I'm sure everyone has different views about it, but radiation is stored up in the body, and I'm worried it may affect that person's offspring. Some may feel stronger about it and say "I can't marry someone from Fukushima." I think there are people like that out there.

[Interview #21: Kenta – male, 35, Tokyo]

1: Do you think people from Fukushima might have problems in the future? For example, ten years from now, might there be discrimination in marriages if they marry someone from another prefecture?

2: I can see that happening. But honestly, even the people in Tokyo might discriminate. People in eastern Kanto may start to be seen that way.

1: Why do you think there is this fear of radiation? Why would someone not be willing to marry someone because they were exposed to radiation?

2: Everyone knows that there were many deformed babies out of Chernobyl after people were exposed to radiation. The Japanese people were never informed just how much radiation was released, but at the time, there was probably quite a bit. We don't know exactly how much was released this time, but there is a possibility of those kinds of children being born, and if they are many of them, people from Fukushima, Tohoku, Ibaraki and Chiba may be discriminated against.

When discussing the chance of passing on genetic defects to one's children, some participants made comparisons to the *hibakusha* from Hiroshima and Nagasaki. Kiyomi is from Hiroshima, and points out that similar discrimination will likely happen to Fukushima residents:

[Interview #39: Kiyomi – female, 40, Hiroshima]

1: Five years or ten years in the future, do you think people from Fukushima might have troubles because of the disaster? For example, Might it be difficult when they want to find work or marry someone from another prefecture?

2: When someone wants to get married, and just mentioning they are from Fukushima means danger, people from Hiroshima know what that's about. A lot of people from Hiroshima have experienced discrimination because of the potential effects radiation may have on offspring.

Ritsuko revealed that her father-in-law is a *hibakusha* from Hiroshima, and he had kept it secret from even his own wife in fear of being discriminated against. Interestingly, despite the fact that her father-in-law, husband and sons have no health problems, she still admits that she'd be concerned about her sons marrying someone from Fukushima:

[Interview #44: Ritsuko – female, 58, Tottori]

1: Do you think ten years from now, there will be problems for people from Fukushima? For example, with employment or when they want to marry someone outside the prefecture?

2: Mmm... It's difficult to answer. Probably... it's a problem for marriage, a little bit. But, I think of the Hiroshima bomb, and Tottori is really near the... ground zero. And many people who got radiation came to Tottori. To say honestly, my father-in-law was in that place at that time.

1: In Hiroshima?

2: Hiroshima. I did not know before marriage, *laugh* and my mother-in-law was the same; she also did not know about it. It's a really important thing, but probably at that time... he didn't say [anything] about it and he never mentioned it. Probably he was... How do you say, discriminated... do you understand?

*1: Worried about *sabetsu*? (discrimination?)*

2: Yeah, worried about *sabetsu*. But... my husband (is a second-generation bomb survivor), and my two sons are third generation of that radiation exposure. But they are really healthy. *laughs* And, Tottori's people probably got radiation exposure in those days. But we don't have any problems. So I think we don't think we need to worry so much. But, if my son's fiancée was from Fukushima, near the power plant... probably I would be worried about it. But... it can't be helped. *laugh* I can't say anything. I can't stop them.

I would like to point out that Ritsuko said she would be worried if her son married a woman from Fukushima who lived near the nuclear disaster. This correlates with similar comments that many participants have said during their interviews. The marriage stigma against those from Fukushima is gender-specific; it focuses on Japanese women. Either consciously or unconsciously, it seems that any genetic defects in children are attributed to the mother. Ren, a man from Fukushima Prefecture, mentioned that his state

of health might be questioned when he decides to get married, but doesn't initially mention the health of his potential children:

[Interview #4: Ren – male, 25, Fukushima]

2: My parents are saying it could happen, because... like, I cannot marry someone from other... place.

1: So they're worried about you...

2: Yeah yeah.

1: Okay. So why do you think that they think other people-or people from other prefectures, might not want to marry you?

2: Because, uh... I think people think, um... if they marry someone from Fukushima, then... you never know, like, if I'm gonna die soon-

1: Mmm.

2: -or not, so it's not... if I have children-kids, and then I die soon, that's not...

1: Not good for the family.

2: Yeah yeah. So.

1: ... and maybe health-the health of the children as well?

2: Mmhmm. Right.

While a man might find it difficult to marry because he could be a burden to his family or die early, women might find it difficult because their children could inherit health complications, according to the interviews. Of the 25 participants who said marriage discrimination could be a problem, 10 gave examples that singled out women as the ones who have the potential to pass on genetic defects. Haruka, Eimi, Yuna, and Ayaka give examples in the following excerpts:

[Interview #28: Haruka – female, 56, Kanagawa]

1: Do you think people from Fukushima might have problems with discrimination in the future? For example, when they get married to someone from another prefecture, would them being from Fukushima cause problems because of the fear of radiation?

2: I think that will happen. Because when they get married, they might be asked "were you exposed to radiation?" If a woman was exposed to radiation, then they may be discriminated against because people believe that radiation will affect the genes that are passed onto her child.

[Interview #12: Eimi – female, 27, Tokyo]

1: Um, do you think people from Fukushima might have problems in the future? Like, if the move or travel outside of the prefecture, if-for example, I've heard that

people might have problems getting married sometimes if they find out that “Oh, they’re from Fukushima,” but I don’t know if that’s truly the case. What do you think?

2: I do not think so, but I know some people, like, think of maybe, like, women, if they get pregnant, like, are they gonna be okay? Their kids gonna be okay? Because they might get, like, affected by radiation before-during their pregnancy.

[Interview #37: Yuna – female, 29, Nagano]

1: Five years or ten years in the future, do you think people from Fukushima might have troubles because of the disaster? For example, Might it be difficult when they want to marry someone from another prefecture?

2: That is probably something that will become an issue in the future more than it is now, especially when women from Fukushima decide to get married, I feel they may be discriminated against. I've heard of people hesitating to marry women from Hiroshima and Nagasaki due to the atomic bomb. I think this is a problem that will develop as time goes on for women from Fukushima.

[Interview #33: Ayaka – female, 31, Fukushima]

1: Five years or ten years in the future, do you think you’ll have troubles because of the disaster? For example, Might it be difficult when one wants to marry someone from another prefecture?

2: To be honest, what I'm worried about is my daughter. When she grows up and gets married to say, someone from a different prefecture, the finger may point to her saying there might be problems with her body and her kids may be disabled. I guess that's a form of discrimination, but I don't want any of our kids to have to face that sad situation. Although I'm already married to someone from Fukushima, there is zero discrimination. In fact, everyone is looking for ways to help each other out, so it's good. I'm worried our kids may be affected a few decades from now.

Some participants, like Rumiko and Yui, have mentioned that this type of discrimination is more of a problem among older people in Japan, and isn’t very common among younger people:

[Interview #15: Rumiko – female, 26, Tokyo]

1: Do you think people from Fukushima might have some troubles in the future? For example, ten years from now, might there be marriage issues?

2: To be honest, I don't think I would have a problem, and I think the younger generation would be more accepting because our education made an emphasis not to discriminate, to be friends with all, and to help those in trouble. That's how we've been taught so I don't think there'd be a problem. But our parents and the elderly might have some difficulty in that area.

[Interview #38: Yui – female, 30, Nagano]

2: Some people might get worried for their future husband and wife if they are from Fukushima, but I don't know if it's [like that] for many people.

1: You don't know how common-

2: -it's gonna be. Mmm.

1: So. (yeah.) Do you think other Japanese people feel the same way you do, or do you think your opinion is unique?

2: Hmm, I don't know. Like, I heard that people from Hiroshima and Nagasaki had a hard time getting married-some people went through a very hard time when they tried to get married with other people from other prefectures. But... I don't know. *laughs*

1: It's okay.

2: It's, like, 60 years ago. Gembaku (the A-bomb) was 60 years ago, and the culture changed and education changed. So... maybe young people in our generation don't care much, but older people might be worried.

Some participants who described this gender-specific marriage discrimination have said that it is more common for the parents and the older generations to harbor these anxious feelings about passing on genetic defects to children, and they also have more influence over the breaking up of these potential marriages. Satoshi describes a similar case of marriage discrimination from the Minamata mercury poisoning incident of 1956:

[Interview #36: Satoshi – male, 41, Tokushima]

2: Do you know about Minamata?

1: Minamata?

2: Minamata is one place in Kyushu, in the southern part of Japan. From 1950 to 1972, or something like that, there was a disease we called Minamata disease. It was because of some polluted water from factories.

[...]

1: So they faced sabetsu (discrimination) because of that?

2: Mmhmm. Many people said they didn't want to get married to a Minamata woman.

1: Mmm. Because they're afraid she...

2: Mmm, mmm. Because the child, the newborn baby is going to be very influenced by that... contamination from inside the body, from mother to child. Many children were born with disabilities. In Fukushima... I don't think Fukushima has the same problem, because as problematic as Minamata was for babies... maybe the level of pollution inside the body is much lower, in my opinion. So I don't think that many disabled child will be born from mothers from Fukushima. But still, discriminating feelings remain among people. Maybe if the parents of a child heard that their son is going to marry a Fukushima woman... Some parents are going to be opposed.

Mika reinforces this idea when she describes how women from Fukushima Prefecture might be stigmatized by their fiancé's parents because of fears they might have children with birth defects:

[Interview #31: Mika – female, 33, Fukushima]

1: Are you worried about discrimination? Well, not just discrimination... Other people's thoughts and feelings as well. Are you worried?

2: I think that if a woman from around here were to marry someone from another prefecture, that man's parents might be against the idea.

1: Why do you think they are so concerned about that?

2: They will probably say that she was exposed and have some abnormality in her DNA, which means there is a higher chance of giving birth to a child with defects. I think that may start happening in the near future.

Apparently, this marriage stigma against women from Fukushima has already prevented some couples from marrying, at the behest of the man's parents. Yoko and Akane describe these cases:

[Interview #34: Yoko – female, 36, Fukushima]

1: Five years or ten years in the future, do you think you'll have troubles because of the disaster? For example, Might it be difficult when one wants to marry someone from another prefecture?

2: I can't say anything just based on my imagination, but there was a couple that cancelled the wedding because she was from Fukushima. I don't know that lady personally, but there are many who decided to have another kid, and others who decided to get married because of the earthquake. Everyone has different thoughts about it. If the couple is okay with it, then it's a go. If the parents are against it, then I guess there's no way around it.

[Interview #6: Akane – female, 34, Fukushima]

3: There were-there was a couple...

1: Mhmm.

3: ...the girl was from Fukushima, and the guy was from Osaka or something. They were engaged, but after the earthquake they broke up because the parents of the guy were against it...

1: Ahhh.

3: Yeah.

1: Ah, I see... why, do you think?

3: Because of the radiation.

1: So they're afraid that she might be-

3: Yeah.

Apparently, the older members of Japanese society aren't the only ones afraid of passing on genetic defects to the next generation. Fukushima women themselves are afraid of having children with these problems. Nao described how some girls in Fukushima have already resolved to never have children:

[Interview #35: Nao – female, 37, Fukushima]

1: Five years or ten years in the future, do you think there will still be troubles because of the disaster? For example, might it be difficult when they want to marry someone from another prefecture?

2: In 5 to 10 years, even if there aren't any after-effects like there were for Chernobyl, there might be the possibility that death rates for children are higher than other prefectures, or that the immune system for kids here are weaker than kids from other prefectures. If there are straight up numbers like that, I'm afraid of what people's imaginations would conjure up to discriminate against us. Some problems now are that couples that want to get married might be seriously questioned by the groom's parents if the girl is from Fukushima, and even high-school girls in Fukushima are already vowing never to have kids based on vague facts about being exposed to radiation. They are also afraid of having children with disabilities.

According to a majority of the participants, marriage discrimination will definitely become an issue in the future, particularly towards women. This type of discrimination even seems to be a problem today, judging by some of the examples given in the interviews. Even though this type of discrimination seems to be more common among older people, it affects younger members of Japanese society since parents have some influence on who their children marry. Of the three issues analyzed in the interviews, the participants thought this one was the most problematic for the people of Fukushima Prefecture.

Mental Health Issues

It appears that even though participants described some problems with mental illness among those affected by the disaster, no one reported mental health discrimination

as a significant problem. During the first six interviews, every participant basically gave the same response; that discrimination in this area wasn't an issue of concern. I speculated that this might be too sensitive a subject, so during the subsequent interviews I waited to see if the participant brought up the topic themselves. I also sometimes asked about the topic when the recorder was off in case they felt uncomfortable discussing the topic while being recorded. I received similar answers from subsequent interviews; either the participant reported that they didn't know enough about the subject to say, or they reported that mental health discrimination wasn't an issue. The reason usually given for mental health discrimination not being an issue was similar to what Ryoko confirmed, that people have learned by now that people also need emotional support after a disaster:

[Interview #2: Ryoko – female, 22, Aichi]

1: Yeah, because when you put-it's not just a natural disaster, there's also radiation, and... also the possible PTSD or depression from it, but you said that-

2: Yeah.

1: -that they learn from previous-

2: Previous experience.

1: So the PTSD and depression is not an issue, because that's common in most natural disasters.

2: Yeah.

1: Okay.

[...]

1: So even though it's different, like, there's-it's a natural disaster that also deals with radiation, you feel like the Japanese people have learned from...

2: Yeah.

1: ...from earlier disasters-

2: Yeah yeah.

1: -that, you know, people need to still be incorporated back into the community.

2: Yeah.

In general, though, most people didn't say that mental health problems would be discriminated against. The two UO Japanese exchange students from Fukushima (Sana and Ren) said that they weren't concerned about that type of discrimination:

[Interview #3: Sana – female, 23, Fukushima]

1: Ah, do you think people might suffer from post-traumatic stress, like PTSD or depression, who have been exposed to this... disaster?

2: Disaster... from other-

1: From Fukushima... Yeah, do you think people might suffer from PTSD?

2: I think, I think.

1: Do you think the Japanese people... like, other Japanese people would also stigmatize them? Like “Oh, you have mental issues.” Do you think...

2: Uh...I don't think so.

1: Okay.

2: People... I don't know. Maybe... *thinks for a moment, then shakes her head* People don't think that way.

[Interview #4: Ren – male, 25, Fukushima]

1: Maybe will you be discriminated against because of... you suffering from PTSD or depression? 'Cause I have heard, anyway-

2: Mmm

1: -that Japanese people sometimes don't look... uh, they look down on people who have depression or PTSD. But do you think that's an issue in this case, or no?

2: Uh... no.

[...]

1: So mostly you're just worried about radiation.

2: Mmhmm.

1: Not about... like, “Oh, he's depressed or has PTSD,” that's not-

2: Not really.

*1: Okay. Just want to make sure. *both laugh**

Because these students are from Fukushima and are more affected by the disaster than others, I figured that they would be the ones most concerned about this topic. However, although they didn't look outright uncomfortable, I still couldn't definitively say that they weren't hesitant about discussing the topic with me.

Although there are fortunately no reported problems regarding mental health discrimination, there are reports of people suffering from mental health-related issues. 4 participants discussed in detail certain mental health problems that were occurring in the population affected by the disaster. Also, 3 participants admitted that they knew some people needed support, but didn't know how they could help them. Two participants

from Fukushima said that although people have received material support (housing, food, etc.) they still have social and emotional needs that aren't being met:

[Interview #10: Ai – female, 31, Fukushima]

1: Has the community and the government been supportive of the hisaisha, or not?

2: We have received enough aid for us living in Koriyama City. Families that have taken shelter because they have no homes to return to due to the disaster, as well as those living in temporary housing, still have mental and emotional needs to be met.

[Interview #30: Ryu – male, 37, Fukushima]

2: I don't think support is just about giving stuff to people who needs them. I don't believe that's enough. I think our government could do more than what they are doing now, but I understand that it could take some time and it's only been a year since 3/11 so, I can't really say they are doing a bad job...yet.

Some participants said that specific emotional/mental problems have been observed. Satoshi discussed how the evacuations have caused families to split up and women to be worried about their children:

[Interview #36: Satoshi – male, 41, Tokushima]

2: I don't think there is enough support.

1: I see. What do you think they need? What kind of support?

2: In the case of people who relocated from Fukushima to other parts of Japan... there are many cases where the mother and children left, and the husbands were left in Fukushima. This is why many of them have economic problems. They don't have a vision... uh, *mitoshi* (prospects). They don't know what's gonna happen in the future. It's difficult to build up their life plan.

1: Yeah.

2: Mental problems, economic problems... Most of them have them.

[...]

2: I read a newspaper article about how many pregnant women have many mental problems, especially because they have so many unstable feelings:

"Maybe my baby is going to have, uh, mental..."

1: Have a problem.

2: Problems, yeah.

This splitting up of families can be an additional hardship for children who are traumatized by the March 11th earthquake and tsunami. Suzuko and Akane noted that some children right now seem to be suffering from PTSD:

[Interview #5 and 6: Suzuko and Akane – both female, 39 and 34, Fukushima]

3: *Kodomo, Chiisai ko... watashi no* (For small children... my) like, my ex-coworker's son...

1: Her son?

3: He's like seven. So, *nanka...* (like...) he has kind of difficulties, right... *chotto earthquake naru to*, (during small earthquakes or aftershocks)

2: Mmm.

3: *yoru mo ne, nanka, toire ni ikemasen.* (and at night too; he can't go to the bathroom)

1: 'Cause he's afraid of-

3: -to be alone. *Jishin de* (because of the earthquake).

Not only are children suffering from traumatic experiences from the March 11th earthquake and tsunami, the splitting up of their families due to the nuclear disaster could be causing more trauma in that their normal everyday routine has been disrupted, and they no longer have access to one of their family members for support.

Mental health problems have also been observed among the elderly population. In a country where community and identifying with one's hometown are highly valued, those who had to evacuate from places they have lived for their entire life because of radiation have been particularly affected. Sanosuke discussed how losing their sense of community can be devastating for older generations:

[Interview #14: Sanosuke – male, 28, Tokyo]

2: I know someone who made a documentary film for NHK about the victims, and I just saw it the other day. There are a lot of elderly people past 50 in their 60's who have no family left and are living by themselves. The people living there have come from many different places, and because they don't know each other, they can't communicate with each other, meaning they are really lonely. Those people have lived in the same place for years and were familiar with their neighbors and other acquaintances, but now they are in a totally different community, and people are dying from loneliness or have shut themselves in. More than the radiation, which in reality isn't a problem,

I think the people living there need more (community) care. I don't know how to fix the problem, but I think something should be done for them.

Losing one's sense of purpose and community appears to have led some to more serious issues among the older population. Suzuko and Akane discussed how gambling and alcohol have become a problem among the elderly in their community:

[Interview #5 and 6: Suzuko and Akane – both female, 39 and 34, Fukushima]

3: Some people who had to evacuate to some places like Koriyama, like, they got a job here and they work hard. But some people don't work at all and they just get money from TEPCO and the government and they don't try to find a job. They go to some place for gambling...

1: Like pachinko?

3: Mmm. *nods* Near my place, *chiketo tokoro*, the ticket place, I see, like, a lot of people there, like old guys just drinking and spending. All day, they spend time all day there.

1: Mmm. So not all hisaisha (evacuees), but some hisaisha spend all their time, and all their free government money, just drinking...

3: Mmm.

[...]

2: Mmm... Actually, I have been studying psychology a few years, and the biggest problem is... alcohol.

1: Ah.

2: So, in the community, some people often stay away from other people. So in the future they will die in a *kazetsu jutaku* (temporary government housing). A *kodokushi* (lonely death). I know how they feel; they lost everything. Lost their job... some people lost their family. Maybe they want to do nothing.

1: Because of feelings of depression?

2: Yeah, yeah, yeah. So that's why we have to support them, to get into good health, mentally and... body, right?

1: Mmm, mind and body. I see.

2: Mmm. But, most of us don't know those problems, because alcoholism is kind of... private... right?

1: A private issue.

2: Yeah, yeah. That's why... *muzukashii desu*. (it's difficult.)

1: So. (yeah.) It's hard to talk about in public, or have a public discourse.

2: Mmm. *Ano wa... eto...* (Well... um...) Some doctor introduced them to... Alcoholic Anonymous?

1: AA?

2: AA, *Hai!* (yes!) *laughs* But, they don't want to go there.

1: Hmm.

3: Yeah, my father is an alcoholic, and he didn't want to go there at all until his body got really, really bad.

As noted in the interview above, it seems people affected by the nuclear disaster might not be getting the emotional support they need because issues like gambling and substance abuse are very personal and difficult to discuss openly. Generally speaking, Japanese people are usually hesitant to burden others with personal problems. Even if mental health stigma isn't an issue, those suffering from mental health problems might be having problems finding ways to cope with and recover from these issues. If discussing problems openly is difficult, then other forms of therapy could be considered.

Even though some mental health problems have been observed, it appears that Japanese people are unsure about how they can help those affected. And because of the personal nature of these issues, they aren't usually discussed openly; not only for fear of burdening others or appearing weak-willed, but of potentially reopening old wounds. As Masami noted, many outside Fukushima Prefecture don't quite know how to talk to her about the situation:

[Interview #7: Masami – female, 36, Fukushima]

2: I sometimes have work trips to Kobe in Hyogo Prefecture.

1: I see.

2: Yes, it's next to Osaka.

1: Yeah.

2: When I go, what I'm worried about is not my job nor my company, but my everyday life. Everyone thinks about work, and they don't show any concern for us at that time. Isn't that strange?

1: Yeah.

2: They don't ask if we're okay or how Fukushima is doing.

1: Really?

2: Yeah. So even though I mention I'm from Fukushima and I've come for work, there is no response.

1: Mmm.

2: There is no [emotional] support.

[...]

2: There is little support in some regions. It's not about money; it's not money that everyone wants.

Eimi and Hidei, who are not from Fukushima Prefecture, confirmed this observation and noted that many people don't know how to talk to those affected because they don't want to upset them further:

[Interview #12: Eimi – female, 27, Tokyo]

2: I think we will be willing to help them, but I do not know how I can help them at this point. That's how I feel.

[...]

2: I don't think they will be discriminated. But, I guess like as I said, some people do not know how to talk to them, because we feel sorry. But, like, we don't know how to say it, and then how to show that we want to help them.

1: Aaah.

2: I could be, like, too much for them, or like, they're not looking for help, like, they just want to start their new life in a different place, so that could be, like, too much for them...

[Interview #17: Hidei – male, 27, Tokyo]

2: [...] People from Fukushima probably experienced immense loneliness and shock, memories that will be with them from now on, so I wouldn't be sure how to interact with them, not from a scientific standpoint, but an emotional one.

Some Japanese people might not even consider the importance of the emotional connection these people need. Keisuke, when asked how he thought the people in the community might interact with someone who evacuated from Fukushima, answered the following:

[Interview #24: Keisuke – male, 19, Tokyo]

2: I might be worried about that person, but not so much about how that person relates to others.

Fortunately, it appears that mental health discrimination might not be a significant issue, judging from the participants' responses. I don't rule out the possibility that this could be a very sensitive subject and the participants were reluctant to discuss it, but I did not get the impression that most of these responses weren't genuine. If I had not been so cautious during the interviews I could make a more definitive conclusion, but I was afraid

of making the participants uncomfortable and afraid to talk openly. Although mental health discrimination might not be a problem, there are mental health problems among those affected by the nuclear disaster, and it is possible that they are not being addressed sufficiently.

Conclusion

The same examples of radiation stigma from the news articles were also found in my interviews, such as bullying among children and people being discriminated against when they leave Fukushima Prefecture and travel to other places. However, the vandalizing of cars with Fukushima license plates and fears about people from Fukushima “spreading” radiation to others, which some participants said could be an issue, were topics barely covered in the news articles. Also, the topic of marriage discrimination towards people from Fukushima (particularly women) was completely neglected by the news articles, and appears to be the most pressing issue among the three discussed in this chapter. It has already affected Fukushima residents today, and will likely affect them in the future. The news articles seemed to confirm my findings regarding mental health; while specific mental health disorders were reported, at least mental health discrimination wasn’t reported to be a problem.

Among the 45 interviews, there were only 2 interviews where I felt the participant might have been too uncomfortable to talk openly about the topics presented. Otherwise, I honestly believe that every other participant was genuine in their response, and spoke openly according to their own experiences and opinions.

CHAPTER VII

CONCLUSION

As a result of this research, I have come to the following conclusions: radiation stigma was a very recent problem for those affected by the Fukushima nuclear disaster, if not still a problem today. Marriage discrimination was the most common form of radiation stigma, and is certainly a significant problem that will likely need to be addressed. Fortunately mental health discrimination was not reported as a significant issue, but mental health disorders have been reported, and people suffering from them might not be getting adequate support for their conditions.

My Findings

According to the participants, mental health discrimination doesn't appear to be a significant issue, but some gave examples of current mental health problems and have said that there was not enough mental health support. The news articles covering this issue seem to confirm this, in that they discuss issues with mental health but not discrimination. However, I don't rule out the possibility that this topic might be too sensitive for people to talk about openly. It's clear that some mental health problems are difficult to discuss (for example, alcoholism), so it could be the case for mental health discrimination as well. If I had been more assertive in my interviews, I could make a more resolute conclusion. What I can conclude confidently is that there are currently mental health problems among those affected by the Daiichi nuclear disaster, such as PTSD among children and alcohol abuse. A lack of support for those with mental health

problems is a potential problem, and because open discussion of personal issues seems to be difficult for many Japanese people, other methods of coping and rehabilitation that are more culturally appropriate could be introduced in order to improve the healing process.

Radiation stigma seems to be an issue at least in the months immediately following the accident. Some of the Fukushima participants actually experienced discrimination firsthand or knew someone personally who experienced discrimination. These examples mostly occurred when the participant or someone they knew traveled outside Fukushima Prefecture. However, most of these participants said this was an issue immediately after the nuclear accident, and as far as they knew it didn't really occur much anymore. Of the three topics discussed during the interviews, the topic of radiation stigma was the only one that varied among the participants according to their location. Those living in Fukushima prefecture, in one of the bordering prefectures affected by the nuclear disaster, and in Hiroshima reported radiation stigma as a significant issue. This isn't surprising, since these three prefectures have had to deal with radiation and others' reaction to it. In other prefectures less affected by the nuclear disaster, there were fewer reportings of radiation stigma being a problem.

The news articles I analyzed discussed some of these issues, especially the bullying among children and problems experienced by Fukushima residents while traveling. However, only a couple of news articles, none of which were from Japanese news organizations, discussed how radiation might be perceived as a contaminating substance (albeit by a limited number of people), which could be contributing to this stigma. None of the news articles I analyzed discussed cars with Fukushima licence plates being defaced and vandalized. One of the possible reasons these topics are under-

reported in the media is because the Japanese media doesn't want to advertise that some people in their society discriminate and are still influenced by these outdated notions regarding radiation. Despite having more information of the subject than was available back in the 1940s, the way radiation is generally perceived today appears to be influenced by the same cultural beliefs that led to the stigmatization of *hibakusha* from Hiroshima and Nagasaki. Therefore, the people of Fukushima Prefecture who were exposed to radiation are at risk of being discriminated against in the future.

This issue may not be an immediate concern anymore, since some have reported that discrimination is not as severe a problem now as it was right after the nuclear disaster, but it could definitely become a problem if a similar disaster were to happen in Japan in the future. To prevent people from acting fearfully and irrationally immediately after a crisis, which most people are prone to do in all societies, efforts could be made to inform the Japanese population about the true effects of radiation. After all, Japanese scientists themselves have gathered most of the current data we have on radiation and its effects. However, this could be a difficult task, since many participants reported that the Japanese people have generally lost faith in the media and their government as a result of their poor handling of the nuclear disaster and the reassuring news reports that withheld information about the severity of the accident. All major news organizations and broadcasting companies are government owned and funded in Japan, so efforts to educate the masses about the effects of radiation through media outlets will be treated skeptically, since this information could be seen as merely government propaganda.

Marriage discrimination was determined to be the most significant issue facing the people of Fukushima Prefecture. This type of discrimination seems to be more

common among the older generations and is targeted towards women in particular. These results were surprising, considering that none of the Japanese news articles I analyzed even mentioned the topic. The lack of coverage on this topic might be because this hasn't become a noticeable problem yet, but it could very likely become one in the future when a large number of women from Fukushima either refuse to get married or are turned down by prospective marriage partners from other prefectures. It might also be underreported for the same reason stated before; it could be the case that the Japanese don't want to advertise to the outside world that people in their society discriminate.

Regardless of whether this discrepancy was due to Japanese news organizations overlooking this as a potential problem, or whether these organizations consciously don't want to admit that marriage discrimination is an issue, this could potentially have a lot of impact on the people of Fukushima Prefecture. It has already prevented some couples from getting married, and some young girls in Fukushima have resolved never to have children in fear that they might pass on genetic defects. To lessen the potential for stigmatization, Japanese scientists and other trusted experts who are knowledgeable about radiation could make attempts to inform the Japanese people that no concrete evidence has been found that correlates radiation exposure with hereditary genetic defects. Also, it would be helpful to international aid agencies and other humanitarian organizations if they were informed about the potential problems that Fukushima residents (especially women) could be facing when it comes to marrying people from other prefectures.

Directions for Future Research

During my research, there were two groups of potential participants that I would have liked to interview, whose opinions and experiences would be valuable in regards to this topic. The *hisaisha*, the evacuees still living in temporary housing, could be interviewed in order to compare their experiences with those of the participants I interviewed, whose lives were not as drastically affected. I also didn't interview anyone who was from Fukushima Prefecture and had moved to another prefecture since the nuclear disaster. Their experiences would also differ from those of the participants I interviewed, since they are not living among people who are in the same situation as they are; they have to live among people who are capable of discriminating against them. Their insights would have been very valuable for this research.

One could also look into the specific reasons why some of these issues (such as marriage discrimination or vandalization of cars with Fukushima licence plates) appear to be underreported in the Japanese media. There is also the question of disseminating information about the effects of radiation to the Japanese public. Because any information coming from the government-funded media could easily be deemed untrustworthy, future research on the subject could analyze the effectiveness of attempts to inform the population about radiation. Another option is to look into sources of information that the majority of Japanese people consider reliable, and see if attempts from those people or organizations could be effective.

Finally, more research could be done on mental health disorders and possible treatment options for those affected by the Fukushima nuclear disaster. Interviews that focused primarily on the topic of mental health problems could produce valuable data

regarding mental health stigmas for specific disorders, the attempts being made to support and rehabilitate those affected, and what methods of coping and rehabilitation would be most effective and culturally appropriate for Japanese sufferers of mental illness.

A Silver Lining

One might think that the Fukushima participants in my research would be frustrated with the situation they have found themselves in, or would have a bleak outlook on the future. However, I have found the exact opposite in most of my interviews. It is certainly not unusual for Japanese citizens to endure hardships without complaint, but the people of Fukushima Prefecture in general seemed truly hopeful and optimistic. Most people I met were eager to talk to me about the nuclear disaster and the after-effects, and despite discussing topics such as food contamination, concerns for future generations, and their distrust of the media and government, I found that overall there was surprisingly good morale among those that I interviewed. Some people discussed their hardships, but many expressed how lucky they were and how they felt overwhelmed at the amount of support they received from people in other prefectures and other countries.

[Interview #2: Ryoko – female, 22, Aichi]

2: Well... I was fascinated by the people's attitude after the disaster happened. Like, everyone was trying to, you know, help with each other, like at the convenience store for example. All the, you know, shelves were fallen, and all the food was, like, scattered in the store... But people, like, being quiet, just took like two food items for each person, like-

1: Oh, instead of ransacking everything.

2: Yeah. "Okay, I'll take only two so that other people can take the rest of the food." Like, I really liked that spirit.

1: Yeah, that's... it still hasn't affected their... I wouldn't say humanity, but you know, "we're not going to become animals over this simply because we're in a bad situation; we need to still consider others, even though we're all... we're all suffering."

2: Yeah.

1: I'm impressed by that too.

2: Yeah!

[Interview #9: Akito – male, 38, Fukushima]

2: For me, I'm... I'm kind of enjoying my life here.

1: Mmhmm.

2: 'Cause I don't... I'm not... I'm-maybe I'm an optimist. *both laugh* Like, I also, like, think about what the issues in Japan, and I know what is, what I can... what is.... I cannot measure. I cannot measure, in the future, like, what it's gonna be.

1: Of course.

2: So I'm just trying to what I can do now. And then, um, I'm just trying to, as I said before, like, I'm seizing the day. And it's gonna be a bright future. I just believe those, um... my will. And I'm trying to change, uh, those... environment, uh... mentally, or... those... trying to open this shop is also, like, what I can do. What-I think what I can do is just, uh... just trying to challenge all the stuff.

1: Mmhmm.

2: And maybe... not maybe. I just overcome all the difficulties, and this might be more exciting, my life, right? 'Cause life is just once-one? Once?

1: We have just one life.

2: Just one life. We just have one life.

[Interview #34: Yoko – female, 36, Fukushima]

2: There have been many that have gone through so much because of the earthquake, and many of our jobs have been affected considerably by the radiation, but without the power plant, everything wouldn't have moved so smoothly. It's also easy to blame everything on the earthquake and power plant, but on the other hand, it's because of these events that many of us have been able to form new connections and meet new people, and I think the ability to take a minus and turn it to a plus is really important, that we should continue to keep moving forward.

[Interview #36: Satoshi – male, 41, Tokushima]

2: Hmm... I think that Fukushima is the frontline to create a new civil society, because people living here are confronting new challenges. Also in Fukushima, people don't have much knowledge about democracy. We are-Japan is a democratic nation, but we don't have much interest in the political machine, so far. But after the nuclear accident, many people got the chance to break from that situation-

1: -That mindset.

2: Mmm. People are forced to change their mindset. Otherwise it's very difficult to solve problems. If people, they succeed... if people are successful in changing their mindset, flowing towards changing society from Fukushima... Here can be the frontline towards creating a new civil society.

1: I see.

2: Such a big prosperity is happening here in Fukushima.

1: So that's a good thing. I mean-

2: -Potentially.

1: -a good thing potentially, to come from this accident. That's a very interesting way to see it.

The participants in my study were not the only ones with such a positive outlook.

Many of the people I met in Fukushima seemed genuinely optimistic about the situation and tried to see the bright side of their situation. Some have even said that my coming to Fukushima has bolstered their confidence. By making efforts towards addressing the issues of mental health, radiation stigma and marriage discrimination, I hope that they will not be disappointed.

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