



A Multidimensional Analysis of Stigma: Findings From a Qualitative Study of Fukushima Residents Following Japan's 2011 Nuclear Disaster

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ABSTRACT

This study examines stigma from the perspective of residents of Fukushima prefecture following the 2011 nuclear disaster in Fukushima, Japan, to better understand effective crisis communication strategies that can mitigate the negative effects of self-stigma and promote sustainable psychosocial recovery. Social cognitive theory was employed to explore cognitive, affective, and behavioral changes faced by Fukushima residents in response to the stigma imposed upon them after the disaster. The study result based on in-depth interviews with residents of Shinchimachi, Fukushima, indicates that affectively, participants experienced a remarkable amount of fear and sadness. Cognitively, they focused on concerns about outsiders' negative images or misinformation about Fukushima, changed priorities or values, and self-efficacy. Behaviorally, they actively resisted the stigma while strengthening their connections and belonging to their own community. Additionally, residents felt that they were branded as polluted and contagious and attributed the creation of a Fukushima stigma to a lack of full and accurate information as well as mistrust in main information sources, including media and government. This research suggests that developing a more transparent and locally based communication and information system could mitigate the negative effects of self-stigma. Theoretical implications for future research and policy suggestions for crisis communications are discussed.

KEYWORDS: Great East Japan Earthquake; Fukushima; social cognitive theory; stigma; risk; crisis; communication; media

This research explores perceived stigma of residents in a village in Fukushima, Japan, 5 years after the 2011 Great East Japan Earthquake, tsunami, and nuclear disaster. The tsunami left 15,890 confirmed deaths and a reported 5,000 to 8,000 people missing (Dunbar, McCullough,

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FIGURE 1 A candle inside of bamboo reads 元気でがんばってます安らかに (I am fine and living my life to the fullest. So rest in peace) at an annual memorial in Shinchimachi for victims of the March 2011 disaster (Kwesell, 2013).

Mungov, Varner, & Stroker, 2011; Johnson, 2011; Figure 1).¹ The physical catastrophe—earthquake, tsunami, and radioactive nuclides being released from the Fukushima Daiichi nuclear power plant—overwhelmed Northeast Japan (Blandford & Ahn, 2012; Maeda & Oe, 2015). Radiation prolonged public health concerns and damaged Fukushima’s fishing and agriculture economy (Maeda & Oe, 2015). The ongoing disaster extended beyond the physical needs of immediate cleanup, planned reconstruction, and public health prevention processes. Communication breakdowns between the government, the power plant, and mass media caused panic (Maeda & Oe, 2015), while rumors and framed media stories changed the social environment both within and outside of Japan (Ben-Ezra et al., 2015). Bromet (2011) suggested that examining both mental and physical destruction following the nuclear disaster will allow insight into long-term recovery for future disasters.

Fukushima was viewed as radiated, and the land and people within faced stigma (Ben-Ezra et al., 2015). According to a 2012 survey conducted in temporary housing units for tsunami and radiation refugees,



FIGURE 2 A mother stands in front of her “temporary home” holding her youngest child. The family was displaced from nuclear radiation, and they lived in Shinchimachi’s temporary housing for 4 years (Kwesell, 2012).

people felt branded as *polluted* (汚染された) from a *prefecture of radiation* (放射能の県; Kwesell, 2013, 2018). While some studies have examined types of stigmas imposed on residents of Fukushima (Maeda & Oe, 2015; Shigemura, Tanigawa, Saito, & Nomura, 2012), few have focused on how the residents perceived the stigmas imposed on them. Examining perceived stigma and self-stigma of people affected by Japan’s disaster provides an opportunity to better understand the impacts of mass media and interpersonal communication in crisis communication. Reducing miscommunication, confusion, and a media-produced public stigma might lower self-stigma and the long-term negative psychosocial effects that follow (Maeda & Oe, 2017). Crisis management relies on dissemination of accurate information. In Japan’s case, the government and mass media’s failure to inform led to confusion and mistrust, a situation that outlasted the initial disaster (Friedman, 2011).

This research explores perceptions, feelings, thoughts, and behaviors about stigma by Fukushima residents living in proximity to the power plant, including self-derogation, ideas about contamination and

contagion, efficacy, stigma resistance, and the origins of the Fukushima stigma, to better understand psychosocial responses and suggest future crisis communication strategies.

The study site is Shinchimachi, a coastal fishing and agriculture village located in the northeastern corner of Fukushima, 50 km north of the Fukushima Daiichi nuclear power plant. One hundred nine residents out of its 8,030 population died in the tsunami, and many people lost their homes (Shinchi Town, n.d.-a). Some residents left the village after the nuclear explosions, and radiation refugees were relocated there. Figure 2 documents a family who lived in temporary housing in Shinchimachi. While recovery is under way, people still suffer from the fear of the unknown risk of living in Shinchimachi and from the stigma attached to being residents of Fukushima.

Literature Review

Conceptualizing Stigma

Stigma is born when one or more groups label another group with an imagined or invented negative attribute, and as it becomes more well known, it merges into a commonly understood stereotype (Puhl, Schwartz, & Brownell, 2005). Communication naturally spreads the stereotype, and the collective consciousness of one group diverges into two: the group or groups who assign the attribute (the stigmatizing) become self-defined as *normal*, and the group to whom the attribute is assigned (the stigmatized) becomes defined as *abnormal* (Durkheim, 1933). To Link and Phelan (2001), the creation of a stigma is reliant on a co-occurrence of several components (e.g., labeling, stereotyping, separation, status loss, and discrimination) yet only exists when structural power is exercised through government, higher social classes, and media, among others. Mass media's framed stories amplify events and perpetuate ideologies (Gamson & Modigliani, 1989), and the media acts as a "power holder" controlling limited information sources (Ball-Rokeach & De Fleur, 1975; Slovic et al., 1991). The perceptions that are spread become inherent defining characteristics of the group, and what was imagined and created become what is perceived as real (Link & Phelan, 2001).

Though stigma is socially created, over time, even the self-understanding of those who are stigmatized begins to shift. According to Corrigan and Watson (2002), self-stigmatization occurs when people begin to feel the same way as they are described by the stigma, such that “they accept the discredited status as valid” (Steward et al., 2008, p. 3). Self-stigmatization can result in anger, loss of self-esteem, and even a weakening of community resilience (Corrigan, Watson, & Barr, 2006). For example, HIV stigma left people with concerns about disclosure, a negative self-image, worries about the public’s attitude, lower self-esteem, and depression (Berger, Ferrans, & Lashley, 2001; Riggs, Vosvick, & Stallings, 2007).

Bromet (2011) suggested that in Japan, the limited yet ominous historical references to nuclear disaster are inaccurate, confusing, and contradictory, and they connect Fukushima to Hiroshima and Nagasaki. This historical reference inflates already existing fears of nuclear disaster and radioactive nuclide exposure. Historically, atomic bomb survivors in Japan were dehumanized as “other” and contagious (Lifton, 1987), and they continue to face shame, guilt, and alienation (Ishikawa, 1981). Bromet (2011) suggested that the connection to the past is intractable and that mental health effects in Fukushima will thus be lasting.

Social Cognitive Theory: Affective, Cognitive, and Behavioral Dimensions

Bandura’s (1986) social cognitive theory (SCT) suggests that humans act based on their ability to decode what they have vicariously learned. The essence of humanness and society is based on the idea that “cognitive, affective and biological events, behavioral patterns, and environmental events all operate as interacting determinants that influence each other” (Bandura, 2001b, p. 266). Affective dimensions of stigma have been measured in attributes of fear/anxiety, embarrassment, shame or guilt, sadness/depression, shock, irritation or anger, personalization and internalization, and feelings of community belonging (Berger, 1995; Bresnahan & Zhuang, 2016). Cognitive dimensions have been measured in rejection concerns, disclosure concerns, changed priorities or values such as mentally coping, concerns about outsiders’ negative perceptions, internal stigma thoughts and overwhelming ideas,

indifference, self- and collective efficacy, and empowerment (Berger, 1995; Berger et al., 2001; McCombs & Shaw, 1972; Ritsher, Otilingam, & Grajales, 2003). Behavioral dimensions have been measured in social withdrawal, concealing, resisting stigma, seeking or not seeking help, avoiding travel, participating in or experiencing community connections or civic participation, and either witnessing stigma firsthand or hearing about it secondhand from a local person who had witnessed it (Fitzpatrick, 2008; Ritsher et al., 2003).

Vicarious learning: Sources of stigma formation in nuclear crisis. One proposition of SCT is that individuals' identity formation is based on vicarious learning. Individuals learn from interacting, by being part of social groups, and from mass media (Bandura, 1986). In cases of nuclear disaster, vicarious learning becomes more prominent due to the invisible potential danger of radiation as well as a lack of information (Cleary & Houts, 1984). Self-stigmatization via vicarious learning can be formed interpersonally (personal contacts, word of mouth, gossip; Kaiser, 2006), structurally (community norms and institutional policies; Hatzenbuehler, 2014), and through mass media (Slovic et al., 1991).

Gossip can spread conflicting narratives and cause panic (Stadler, 2003), even leading to unsuccessful public health initiatives (Pop, 2016). Socol (2015) suggested that though the Chernobyl nuclear disaster resulted in a low number of radioactive-specific physical ailments, evacuees faced heightened anxiety and increased suicide from "myths about the threat of radiation" (p. 8). Rumors spread fears about birth defects, deaths, and cancers even in neighboring countries (Entman, 1993; Gamson & Modigliani, 1989), and anxiety remained 6–20 years after the disaster (Bromet & Havenaar, 2007). In a study about the 2003 SARS outbreak, Person and colleagues (2004) found that Internet rumors spread inaccurate information and led to fear and apprehensiveness about admitting to illness or seeking treatment. Shigemura and colleagues (2015) suggested that the negative effects of rumors in Fukushima could be mitigated by congruent public health information.

Structural stigma includes discriminatory social policies and community-level attitudes (Hatzenbuehler, 2014), segregated locations for care (Link & Phelan, 2006), and a lack of available social services

(Liegghio, 2017). Hatzenbuehler (2014) found that discriminating social policies influence community attitudes and escalate mental health issues, leading to higher rates of mortality and cardiovascular disease. Schizophrenia treatment centers were found placed in impoverished and unsafe areas (Link & Phelan, 2006). Caregivers for youth with mental illness voiced struggles with social services' fragmentation, including education systems, child protective services, and criminal justice (Liegghio, 2017).

Mass media's powerful role is a central pillar to the creation of stigma (Bandura, 2001a). In the 1980 Mt. St. Helens disaster, mass media was the first-sought information source to resolve ambiguity during crisis (Hirschburg, Dillman, & Ball-Rokeach, 1986). Media's framing determines the way in which the public views a crisis and can alter the sense of self that survivors experience (Coombs, 2007). Perko (2011) suggested that the media in Fukushima should have addressed the specific hazard, immediate emergency instructions, and postdisaster instructions to mitigate negative outcomes, yet stories were embellished because reporters and editors had to fill budget lines and expand readership.

Research Questions

Based on SCT and prior literature, this study proposes the following two research questions:

RQ1: How are affective, cognitive, and behavioral dimensions proposed by social cognitive theory reflected in Shinchimachi residents' perceptions of stigma?

RQ2: What interpersonal, media, and governmental sources are likely to have influenced Shinchimachi residents' perceptions of stigma?

Research Method

Research Procedure and Participants

This research is based on 12 in-depth interviews with residents of Shinchimachi. Participants were found through snowball sampling. All were directly affected by the earthquake, tsunami, and nuclear

fallout. Eight were tsunami refugees who lived in temporary housing for 4 years, and one was a radiation refugee evacuated from her home to Shinchimachi. Their ages ranged from 24 to 80 years, with an average age of 59 years, which reflects the aging society of Shinchimachi, where the average age of residents is 48 years old (Shinchi Town, n.d.-b).

Interview questions were created in English and then translated into Japanese by a bilingual native Japanese speaker and linguistics professor. Particular attention was paid to avoiding directly asking sensitive or painful questions about experiences during and after the disaster. Interviews were conducted in Japanese, transcribed, and then translated into English by a team of five bilingual native Japanese translators and rechecked by the two most experienced translators. Each interview lasted between 50 and 120 minutes.

Around the eighth interview, answers started to become redundant. Instead of claiming saturation, the interviewers employed grounded theory research suggestions by Charmaz (2006) and Corbin and Strauss (2008), who recommended that after saturation is found, interviews go more in depth to unearth nuances that bring about new data. Thus the researchers began to ask more detailed questions, furthered clarifications, and allowed more time for new data to emerge in finer points.

Interview Questions and Data Analysis

Interview themes and questions were derived from the literature review. Examples of questions include the following:

- How do you think Fukushima people's lives changed after 3.11 (March 11, 2011)?
- Did you feel differently after 3.11 because you are from Fukushima? If yes, how?
- How do you think Fukushima was represented in the news right after 3.11?

Data analysis was based on both theoretical and grounded approaches. An overall framework of affective, cognitive, and behavioral dimensions based on SCT (Bandura, 1986) was set a priori. However, establishing

an a priori coding scheme was not feasible because of the insufficient number of past studies concerning perceived stigma and communication in crisis settings, especially following a nuclear disaster. A two-stage coding process based on a grounded approach was thus employed. First, the authors engaged in a thematic analysis of the data, deriving subthemes within each of the affective, cognitive, and behavioral dimensions. To ensure the validity of the subthemes, two graduate students were hired to revisit the data by coding available themes derived by the authors. The coders and the authors had several meetings to resolve disagreements, and the subthemes were updated with a clearer operationalization of concepts.

Results

Affective, Cognitive, and Behavioral Dimensions of Perceived Stigma (RQ1)

With regard to the categorization of participants' perceptions of stigma, certain prominent themes arose. Affectively, participants discussed experiencing a remarkable amount of fear and sadness. Cognitively, they focused on concerns about outsiders' negative images or misinformation about Fukushima, changed priorities or values, and self-efficacy. Behaviorally, participants expressed actively resisting stigma, having increased community connections, and experiencing or hearing about enacted stigma.

Affective. The affective dimensions derived from prior theory were all mentioned, except for embarrassment and shock. The most outstanding affective dimension was *fear/anxiety*. Every participant expressed fear, with the subject mentioned on 48 different occasions. Seven participants expressed fear for the health and future of children, while fear about children eating local food or drinking water, playing in the soil, or swimming in the ocean, and fears for their future, were widely acknowledged. Figure 3 illustrates a summer festival where children cannot help but get muddy. One father expressed,

Even if we the adults ate it, I didn't want to feed the children those crops. . . . I had anxiety. Anxiety for the future of my children. My



FIGURE 3 Children play water games on a rainy day during Shinchimachi's summer festival, which attracts residents of villages along the Fukushima coastline. Before the festival, the park had its top layer of grass and dirt removed in an attempt to lower the ground radiation (Kwesell, 2013).

children also got the checkups but I am always worried, what if that result was not accurate?

Seven participants specifically mentioned fear/anxiety about food safety. Responses covered damaged industry, for example, one participant shared that “for the fishermen and vegetable shop owners. They may not be able to sell their goods.” The apple farmer said that he considered leaving Fukushima to start over because people would assume that because he was in Fukushima, his apples would have high levels of radiation. Even if he checked and they did not, people might not trust their safety. Many participants decided to check radiation levels for food they had personally grown at the town hall.

In addition to fear/anxiety about children and food was a general fear of invisible, unknown aspects of radiation. One 80-year-old participant said, “I am a farmer and radiation is something that can't be seen.” Participants expressed a continued fear stemming from a general feeling



FIGURE 4 A child plays with a radiation counter in Shinchimachi's largest park. Public parks, open areas, and school playgrounds all have radiation counters after the nuclear disaster (Kwesell, 2012).

of “uncertainty” and this led to felt ailments or somatic symptoms. As demonstrated in Figure 4, they are constantly reminded of the higher levels of radiation as the village is dotted with radiation counters. One participant mentioned, “I don't know. About the radiation. About the nuclear disaster. When I feel a little ill, my mind immediately goes on thinking that it is because of radiation.”

The second most often mentioned affective dimension was *sadness/depression*, which was mentioned by 8 participants a total of 20 times by expressing sadness, depression, or a feeling of separation and rejection. Participants said, “So sad that we have come to such a level” and “I was hurt just hearing about it.” One radiation evacuee said that her family all used to live together yet are now split across four places in three different prefectures. For her, depression lasted about 1–2 years, and sadness stemmed from a mixture of feeling alone and seeing negative Internet comments, which she characterized as “painful.” One grandmother expressed a deep sadness of “rejection” when her children stopped

accepting homegrown food she sent. Sadness also stemmed from the very dichotomy of living in a place surrounded by nature yet fearing it. Another participant shared, “[My children] have never gone to the sea. They pass by it in the car but haven’t gone to the beach. We live in a place where the nature surrounds us—both the mountain and the sea. But it is so sad they can’t go to the ocean.” A few participants also expressed *anger* about outsiders’ views of Fukushima, yet, despite the many difficult affective responses elicited from interviews, feelings of *community support* were also expressed. One participant noted that he felt a sense of peace: “because I have all my family and friends and the community, I am okay.”

Cognitive. All of the cognitive dimensions discussed in literature were mentioned by participants, while the most outstanding was *concerns about outsiders’ negative image or misinformation about Fukushima*, expressed by all participants a total of 73 times. They communicated that everything related to Fukushima after the nuclear accident is now grouped together into one long-lasting negative image. One participant said that the first impression is “engraved in people’s minds” and will thus “continue.” They expressed being disliked and avoided, and one noted that tourists no longer want to visit the prefecture. The Fukushima stigma was expressed as a misunderstanding. One participant shared, “It’s almost as though people think you get cancer from just hearing the term *Fukushima*.” Eight people thought that others might think it is hard for Fukushima women to get married or have healthy children. In addition, respondents mentioned the historical reference from the aftermath of the atomic bombing and people’s resulting negative attitudes toward women, marriage, and the ability to bear healthy children.

Eight people mentioned that others assume Fukushima prefecture and its people, objects, and food are contagious. Some reported their cars being vandalized, while others were asked if their cars were contagious. Two participants shared that Fukushima children who went to school in another prefecture after the disaster were called “dirty.”

The second most often mentioned cognitive dimension was *changed priorities and values*. Ten participants expressed such changes a total of 33 times. One participant noted,

When I was doing dead body searches and finding bodies every day . . . I felt, there is a reason that I am alive today. I need to do something for the community . . . living with a purpose. . . . So before, my priority was the business, but now . . . I want to contribute to making Shinchimachi a better place for all.

Others expressed that family time and bonding had become essential priorities. One participant noted, “Now, if we can go through a day peacefully, then I am happy. If I can spend a good time with my grandchildren, I am happy. . . . I just want to live peacefully with my husband.”

Nine participants expressed *self-efficacy* and six expressed *collective efficacy*. The apple farmer is now experimenting with a new technique to grow tastier apples more efficiently. Before the disaster, he did not have much of a plan to expand, and for 2 years after, he felt overwhelmed and stuck. Then he slowly regained footing and started having new ideas and dreams. Several participants expressed future thinking by continually thinking about participating in rebuilding the village. Participants experienced a desire to support one another, join together to fight against stigma, and share a fuller story of Fukushima, illustrating that residents continue “carrying on with their li[ves].” In addition, they spoke about a desire to share what they called a real or more inclusive story of Fukushima rather than the partial or negative story shared by the mass media. One participant noted, “So although we are victims, we still have power and energy to do something more for the community. Not just asking for help from outside but helping ourselves.”

Behavioral. The most outstanding behavioral dimension was *actively resisting stigma*, expressed by all participants on 19 occasions. Eight mentioned verbally claiming they are from Fukushima as “honest fact.” One said, “I would say that I am from Fukushima with confidence and pride.” Another shared, “I was born here and there is nothing to hide from it.” Four participants mentioned actively working to change Fukushima’s negative image and experiencing some frustrations doing so. One shared, “This part of Fukushima, radiation levels only reached to this level, so it is not a problem. Although we try to spread this fact ourselves, it seems that the public is unwilling to accept.”

The second most salient behavioral dimension was *community support and involvement*, mentioned by 8 participants, and *witnessing enacted stigma*, mentioned by 11. One participant said her husband postponed his retirement as the community needed electricians. The apple farmer noted that while he lost outside clients, his community kept buying apples. One business owner transformed his life by starting a nonprofit organization that supports victims of the disaster, children, and elders in the community.

Eleven participants had either witnessed *enacted stigma* directly or heard about it happening both outside and within the prefecture. One participant shared, “Children get bullied at school for being from Fukushima . . . even within Fukushima.” Cars were mentioned being damaged, “wretched and scratched because they had a Fukushima number plate.” People who fled their homes were shown that they were unwelcome in the new place. One participant shared, “Even within Fukushima, when a family moved to Iwaki from the evacuation area and went around to greet their new neighbors, gifts that they had given were returned to their doorstep the next day because of where they were from.”

Participants also expressed *social withdrawal* and *concealing* being from Fukushima. Family friendships were broken and contact lost with people who fled Fukushima, and one person mentioned that she had stopped sending gifts to family outside because the gifts did not feel welcome. One said that it was too exhausting to tell foreigners where he was from: “When I go abroad I say I am from Sendai, Japan. I went to America, China, a lot of places, but never say Fukushima because people will react to Fukushima—even foreigners.”

Perceived Sources of Stigma (RQ2)

With regard to perceived sources of stigma, all research participants mentioned the media in general terms, and some mentioned specific forms of media, such as television, Internet, and newspapers. In addition, they mentioned the Japanese government, Tokyo Electric Power Company (TEPCO), and interpersonal contacts/rumors as sources.

The most dominant perceived source of stigma mentioned was the

general term *media* by all participants 70 times, while most did not report the *kind* of media. They expressed that the media did not show the full story, mistold the story, or lied. The media was criticized for deceiving and for lacking information. One participant claimed to “only believe what I see with my own eyes.”

Three participants suggested that the media only shares choice elements to create “tears” or “entertain.” Two specifically mentioned that a story is written and published despite fact-based knowledge. To one participant, the media’s portrayals bring mistrust: “When I see such newspapers and magazines, the first thing I feel is anger. I can’t trust these.”

Television, newspaper, and online sources. Six participants mentioned television as a specific source of stigma. One spoke of reports of victims of the 2016 Kumamoto, Japan, earthquake refusing donations from Fukushima: “There are some who would accept, but even now, there are some people who see us like that. I learned that from watching the TV.” Four participants mentioned newspapers (either online or offline) as a source of stigma. One said that a local newspaper reported only on radiation fallout and failed cleanup attempts: “They only say negative things. I wish that they would say more about what should be done construction-wise or portray it in a way that makes us more hopeful.” Three participants specifically blamed online sources for contagion rumor. One participant noted, “I have seen on the Internet and media, things like radiation is contagious so you shouldn’t go near them.”

Government and TEPCO. Seven participants mentioned the Japanese government as a source of stigma, and four mentioned TEPCO. One mentioned that people only accept news as fact and that news comes from sources of structural power. One said that he “feels foolish” for believing the government and TEPCO. The media’s immediate disaster report put one participant’s family in danger: “We fled to Shirakawa. But in reality, it turned out that the radiation level was higher than that of Shinchimachi. We lacked information back then.”

Interpersonal contacts and rumors. Five participants mentioned the cause of stigma to be *interpersonal contacts and rumors*. They noted that while the media created and shared the story, influences lay equally in the minds of media audiences and the meanings they derived:

I don't think it's the media's fault. . . . I think people exaggerated how they processed the information, automatically making things worse in their heads—that the condition of the nuclear reactors is worse than what is told, that all of Fukushima is now not functioning, that every part of Fukushima has been contaminated.

Participants seemed to differentiate between physical damage by the earthquake, tsunami, or forced evacuation and damage created by rumors, which “hurt in nonvisible ways. . . . Most people, they take in the information just as it is delivered. That leads to rumors and stereotypes.” In addition, some participants mentioned the feeling that the rest of Japan had them under a microscope, as if they were interested in the lives of Fukushima people “like rats in a science experiment.”

Overall, participants expressed wanting more transparency: for the media, government, and TEPCO to share truth and for news not to be swayed in an overly positive or negative way. They wanted victims' personal stories shared as well as facts that could offer them a chance to make their own informed decisions about safety.

Discussion

Summary and Implications of the Results

The stigma perceived by the participants in Shinchimachi reveals their newly emerged identity in relation to the rest of Japan as a prefecture of radiation. Affectively, they felt anxious and sad about the new circumstances that suddenly emerged out of their control. Cognitively, they were highly concerned about negative views about Fukushima among “outsiders.” Behaviorally, they actively resisted the stigma while strengthening their connections and belonging to their own community.

One important finding in this study is that while stigma has negative connotations, participants did not all exhibit negative effects from stigma. Similar to what Goffman (1963) proposed, people think through stigmas following an initial emotional reaction and experience varying degrees of efficacy. As noted in several past studies (Link & Phelan, 2001; Southall, Gagné, & Jennings, 2010; Steward et al., 2008), stigma causes people to rethink values, priorities, goals and dreams and even

encourages them to become more involved in the conception of a desired future. Shinchimachi was perceived to be stronger as people supported one another and actively strengthened ties to resist stigma. The village's reputation was likely damaged as a part of Fukushima, and physical dangers remain ambiguous. Despite this, self- and collective efficacy were expressed even 5 years after the disaster.

The willingness to resist the Fukushima stigma may enable participants to speak out more actively about needed policy change to keep them safe both physically and socially. If there were better communication channels through which residents of affected areas could express their thoughts and feelings within and outside of their communities, more accurate information could be conveyed and shared. Results concerning sources of stigma formation offer valuable implications for people's dependency on the mass media and interpersonal contacts in disaster situations. Although the mass media has been previously proven as the main source of information in ambiguous times (Ball-Rokeach, 1985, 1998; Hirschburg et al., 1986), some participants expressed such a high level of mistrust in the media that they relied on interpersonal communication for information. Consistent with the media framing literature (Entman, 1993; Gamson & Modigliani, 1989; Goffman, 1974), participants found that stories mostly followed precreated dramatized frames, from which they felt stigma originated. They mentioned that journalists arrived on scene with stories that had already been written and were mostly looking to find quotes to match their angles (Durkheim, 1933; Puhl et al., 2005). Results indicate that people's dependency on different types of information sources in disaster situations is likely to be influenced by their trust in the framing of stories in the mass media. Future studies can further reveal the relationship between dependency on media in disaster situations and the effects of framed content.

The most salient stigma attributes expressed were fear and, interestingly, a desire to resist stigma. Past studies have found that the stigmatizers can have fear toward people with a diagnosed ailment (Berger, 1995; Berger et al., 2001). In a different angle, fear and anxiety from the stigmatized likely stem from lack of information (Rubin, 1987). The present study offers new data that sheds light on a more illusive sense of fear. The participants feared their current situation and future because of

radiation, which they cannot see and the physiological effects of which they do not fully understand. But they also felt that other people feared those who were exposed. These fears could not be tangibly defined because of radiation's elusive characteristic, and there is no direct situation to which they can be compared. This phenomenon of fears created by the multifaceted layers of stigma and self-stigma effects builds on more direct stigma-induced fear research (Zhuang et al., 2016). Based on Rubin's (1987) findings, one way to alleviate fear is to offer victims full information. In the case of future crises, information structures and dispersal networks could help alleviate fears in unforeseen and overwhelming situations. The interplay of fear and the resistance of stigma is worth further exploration.

Suggestions for Future Crisis Communications

We make three suggestions for future crisis communication strategies based on our findings. Stigma takes place when information is lacking and rumors begin to spread (Flynn, Slovic, & Kunreuther, 2001; Goffman, 1963). Open and clear communication about risk and public health issues can mitigate the long-term negative effects of self-stigma (Maeda & Oe, 2017). First, a multichannel flow of information would minimize the spread of inaccurate rumors and allow more options for vicarious learning beyond the mass media-centric story. Special attention would be needed to make information accessible to all individuals in the at-risk population. In an aging community like Shinchimachi, many of the elders might not have access to the Internet or use social media. The present research indicates that interpersonal channels and the local media play an important role in crisis communication. Future research can examine effective and accessible means of information dispersal in immediate disaster response and reconstruction phases engaging all forms of mainstream, local, and social media and a more structured response including small groups and face-to-face information dispersal. Many interviewees expressed confusion owing to a lack of information on the health effects of radiation. Rather than not communicating information because of an inability to agree on facts, multiple perspectives about disaster and risks entailed should be presented so that people can make informed and rational decisions.

Second, disaster response and communication strategies should include ways for residents to talk openly about their difficulties, uncertainties, and frustrations. Several interviewees mentioned the frustration of not being able to confide in others about what they experienced due to the stigma and sensitivity of the disaster. In the immediate aftermath of a disaster, informal group conversation can be carried out at evacuation shelters with community leaders spreading information and encouraging open discussion. With respect to a more long-term aftermath, therapeutic interventions can include more formal discussion groups. This would allow victims to share information in a safe space, voice anxieties and concerns, and come to some agreement on strategies moving forward.

Third, crisis communication experts should put immediate focus on local media and encourage them to take on active roles to overcome negative effects by mainstream media's framed stories. Local media should provide focused information on the local area and publish more stories and voices from local citizens. Print, television, and radio, in addition to the Internet, could help disperse information to diverse groups of people. Local media can offer vital information and likely lessen the long-term effects of self-stigma.

Limitations and Future Research

The limitations of our study should be mentioned. This qualitative study focused on understanding stigma from the perspective of crisis survivors and, thus, did not attempt to generalize findings to all Fukushima survivors. Findings from this study could help develop scales for future survey research on stigmatized disaster survivors.

Shinichimachi is an aging community, and new generations often move to cities for university, while few young people return. The participants' age range reflected this trend to an extent yet was still too heavily weighted toward elderly people and would benefit from more inquiry with younger generations. Future research with a larger capacity in a wider area of Fukushima prefecture would offer more insight into the more general stigma perceived by Fukushima residents.

Despite these limitations, this study makes an important contribution to the field of crisis communication by uncovering multiple

dimensions of stigma perceived by Fukushima residents and how the residents are coping with the imposed stigma. The study lays a basis for future research on stigma, disaster, crisis communication, and recovery. The study also suggests that researchers in this field should be aware of the challenges of accessing the sensitive research population. Many residents of Fukushima were hesitant to participate in disaster-related interviews with researchers from outside of Fukushima in ongoing circumstances of having to cope with psychological trauma in a stigmatized place and with unknowns of future radiation-related health issues. These challenges make further research with this type of population both challenging and valuable.

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Note

1. The first author, Allison Kwesell, is a photojournalist and has been documenting the lives of the people of Fukushima since 2011. Several of her photographs are included as figures.

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