

Report on Life and Health of Parents and Children after the Fukushima Nuclear Power Plant Accident

Thank you for your cooperation in conducting the “Survey on Life and Health of Parents and Children after the Fukushima Nuclear Power Plant Accident.” We were able to collect important data. We will send you the report of the results. This report summarizes major points of the survey results, aiming to inform you about overall life and health tendencies of parents and children. “Fukushima Child Health Project” is a cohort study designed to indicate measures required for healthy life, by continuing to regularly assess the life and health conditions of children and parents in Fukushima.

Thank you for your attention.

July, 2013

The survey was conducted by Fukushima Child Health Project, supported by Fukushima City, Koori Town, Kunimi Town, Date City, Koriyama City, Nihonmatsu City, Otama Village, Motomiya City, Miharu Town, Fukushima Minyu Shimbun, Fukushima Minpo, and Coop Fukushima

“Survey on Life and Health of Parents and Children after the Fukushima Nuclear Power Plant Accident”

- Survey methods
 - Investigation period: Questionnaires were sent on January 18th 2012, and returned between January 23rd to June 24th
 - Survey method: Mail survey
 - Participants: Among three-year-old children born in the fiscal year 2008 (from April 2nd 2008 to April 1st 2009) and their parents living in nine cities, towns, and villages in Nakadori region (Fukushima City, Koori Town, Kunimi Town, Date City, Koriyama City, Nihonmatsu City, Otama Village, Motomiya City, and Miharu Town), those that were registered in the basic resident register of the nine districts above from October to December in 2012.
 - Response results: The number of responses were 2,613 (response rate of 42.2%)
- Notes on data
 1. Questionnaires are still being sent back by the participants. We hope to return the results to you as soon as possible. Therefore, questionnaires that were returned by May 31st (N=2,611) were analyzed on this occasion.
 2. Values in the graphs generally indicate the percentage of all responses (N=2,611). The data are rounded off to the first decimal place. Moreover, very small values are not indicated in graphs. Therefore, the total is not always 100%.
 3. Please inform us in advance if you cite any data from this survey.

Contact information

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1. Responses to the survey

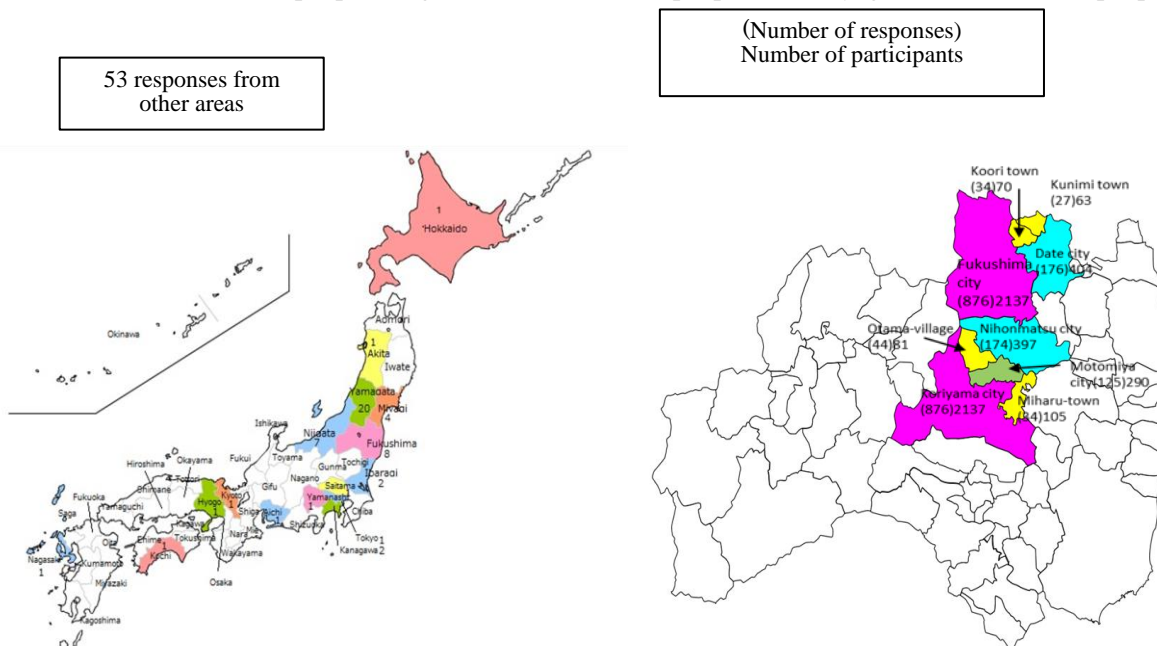
1.1 Over 40% response rate in almost all participated cities, towns, and villages

Participants of this survey were 3-year-old children born in the fiscal year 2008 (from April 2nd 2008 to April 1st 2009) and their parents living in the following nine cities, towns, and villages in the Nakadori region: Fukushima City, Koori Town, Kunimi Town, Date City, Koriyama City, Nihonmatsu City, Otama Village, Motomiya City, and Miharu Town. The response results are indicated in Table 1. We were able to collect over 40% responses from almost all participated cities, towns, and villages.

Table 1: Responses based on districts

Area	Number of participants	Number of responses	Response rate (%)
Fukushima City	2137	876	41.0
Koori Town	70	34	48.6
Kunimi Town	63	27	42.9
Date City	404	175	43.3
Koriyama City	2644	1069	40.4
Nihonmatsu City	397	174	43.8
Otama Village	81	44	54.3
Motomiya City	290	125	43.1
Miharu Town	105	34	32.4
Others		53	
Total	6191	2611	42.2

In Table 1, 53 people in “others” are those who moved out or transferred to other areas from nine cities, towns, and villages in the Nakadori region. Main areas of transfer include Yamagata Prefecture with 20 people, other areas in Fukushima Prefecture with 8 people, Niigata Prefecture with 7 people, and Miyagi Prefecture with 4 people.



2. Attributes of respondents

2.1 Majority of respondents are mothers in their 30s

Of respondents, 99.1% were women. The graph shows respondents' ages. Those who were "30-34 years old" and "35-39 years old" together accounted for 68.0%. This means that about 70% of respondents were in their 30s. With regard to respondents' relation to children, 98.7% were "mothers" with some "fathers" and "grandmothers."

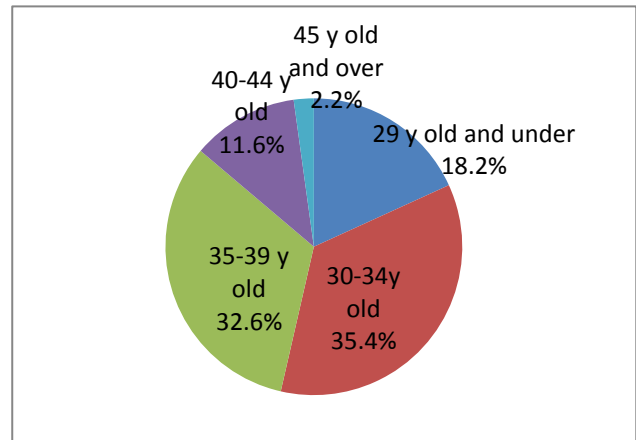


Figure 2-1: Age of respondents

2.2 Over 70% of respondents "want to keep living in the current area"

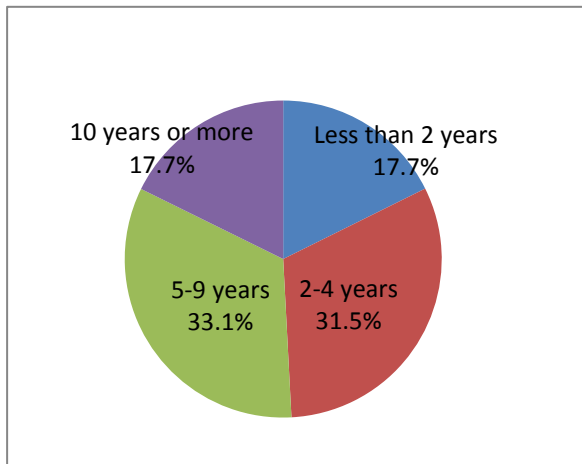


Figure 2-2: Years of residence

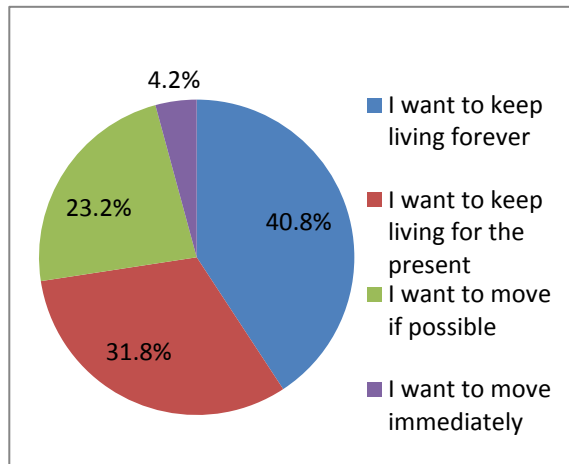


Figure 2-3: Intension for residence

Of respondents, 17.7% have lived in the current area for "less than 2 years." Presumably, a little less than 20% relocated following the nuclear power plant accident. The combined rate of those who have lived in the current area for "2-4 years", "5-9 years" and "10 years or more" is 82.3%. Accordingly, more than 80% of the respondents have remained where they were.

We asked the following question: "Do you want to stay in the current area of residence?" Of respondents, 72.6% indicated that they "want to stay here forever" or "want to stay here for some time." Many residents intend to stay in the current area. Meanwhile, 27.4% indicated that they "want to move if possible" or "want to move immediately." This shows that about 30% of respondents hope to relocate their residence.

3. Life and health of children

3.1 The length of time that children play outside is on an increasing trend

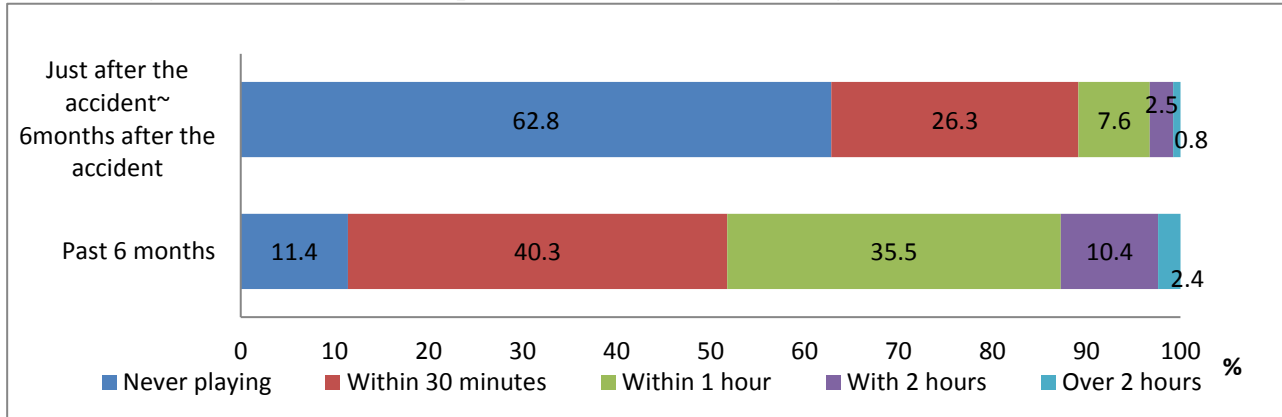


Figure 3-1: Change in time playing outside

We asked about how the length of time children play outside changed for two points of time: just after the accident~ six months after the accident and the past six months. Children who “did not play outside at all” accounted for 62.8% in the “just after the accident~ six months after the accident” but the rate decreased to 11.4% in the “past 6 months.” Overall, children seem to spend more time playing outside now that two years have passed since the accident.

3.2 About 45% of parents “rarely” have opportunity to go for a walk with children

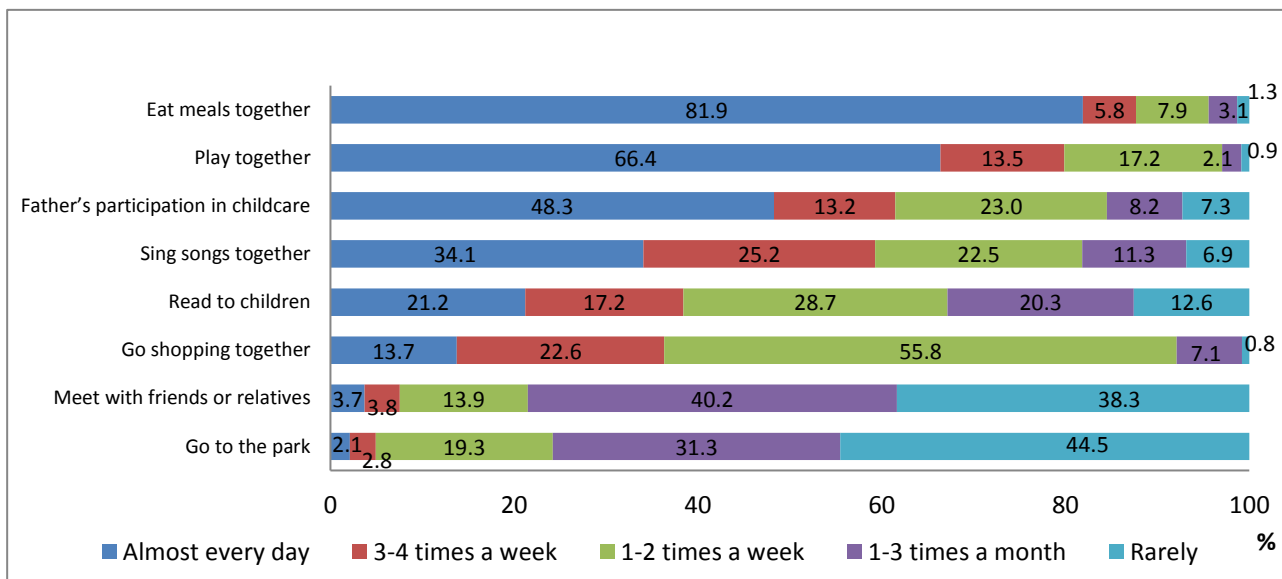


Figure 3-2: Daily lifestyle

In order to foster the development of children, it is regarded as very important for parents and children to engage in activities and for children to interact with various people other than their parents. We asked respondents about the following items: “opportunity to play with children,” “frequency of father’s participation in childcare,” “opportunity to read to children,” “frequency of meeting friends or relatives with children of a similar age” and other lifestyle questions. Among responses, “eat meals together” had the highest rate of “almost every day” with 81.9% followed by “play together” with 66.4%. In contrast, a very few parents had “opportunity to go to the walk” with children and the rate was only 2.1%. This was presumably due to the aftermath of the nuclear power plant accident in addition to the survey period being winter and that many children were attending nursery school or kindergarten.

3.3 Children’s health conditions are mostly positive

We asked respondents about children’s “health conditions in the past six months.” Of their responses, 57.8% were “good” and 37.0% were “rather good.” This shows that overall health of children is mostly positive.

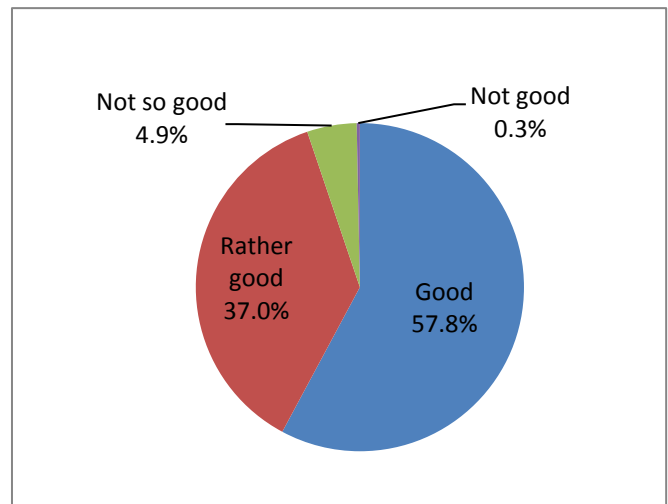


Figure3-3: Children’s health conditions

3.4 The most prevalent symptom among children is “Skin itch”

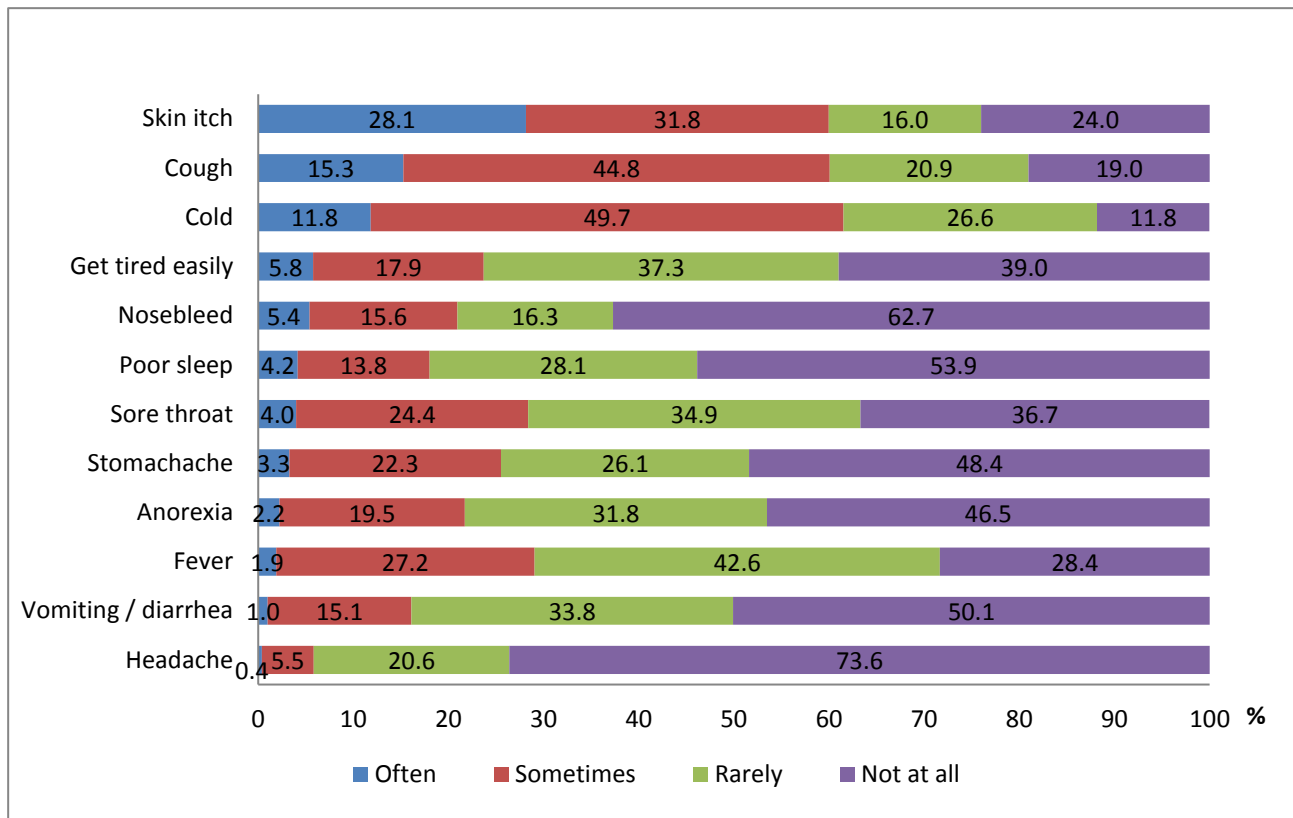


Figure 3-4: Children’s physical symptoms(Past 6 months)

We asked respondents about children’s “physical symptoms in the past six months.” “Skin itch” had the highest rate of “often” with 28.1% followed by “Cough” with 15.3% and “Cold” with 11.8%. With regard to “Poor sleep,” 18% responded “often” or “sometimes.” This shows that there are children who are complaining of insomnia.

4. Mental and physical health of parents

4.1 Health conditions of parents are mostly positive

We asked respondents about their “health conditions in the past six months.” Of those responses, 27.2% were “good” and 50.1% were “rather good.” This shows that overall health of parents is mostly positive. However, 20.6% responded “not so good.”

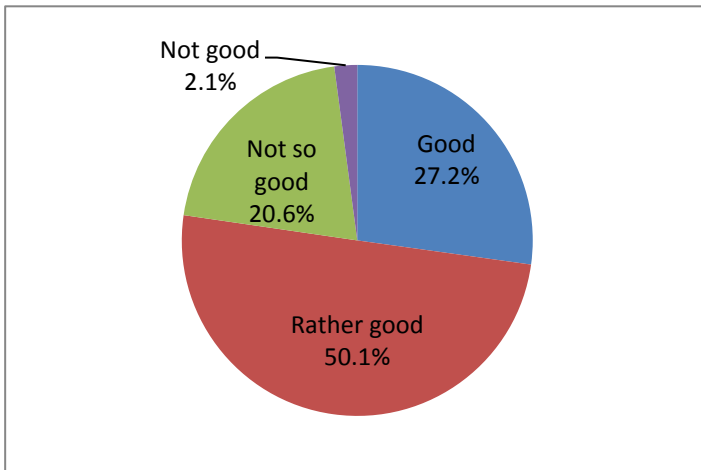


Figure4-1: Health conditions of parents

4.2 “Skin itch” ranks as one of the leading symptoms with other common symptoms in Japan

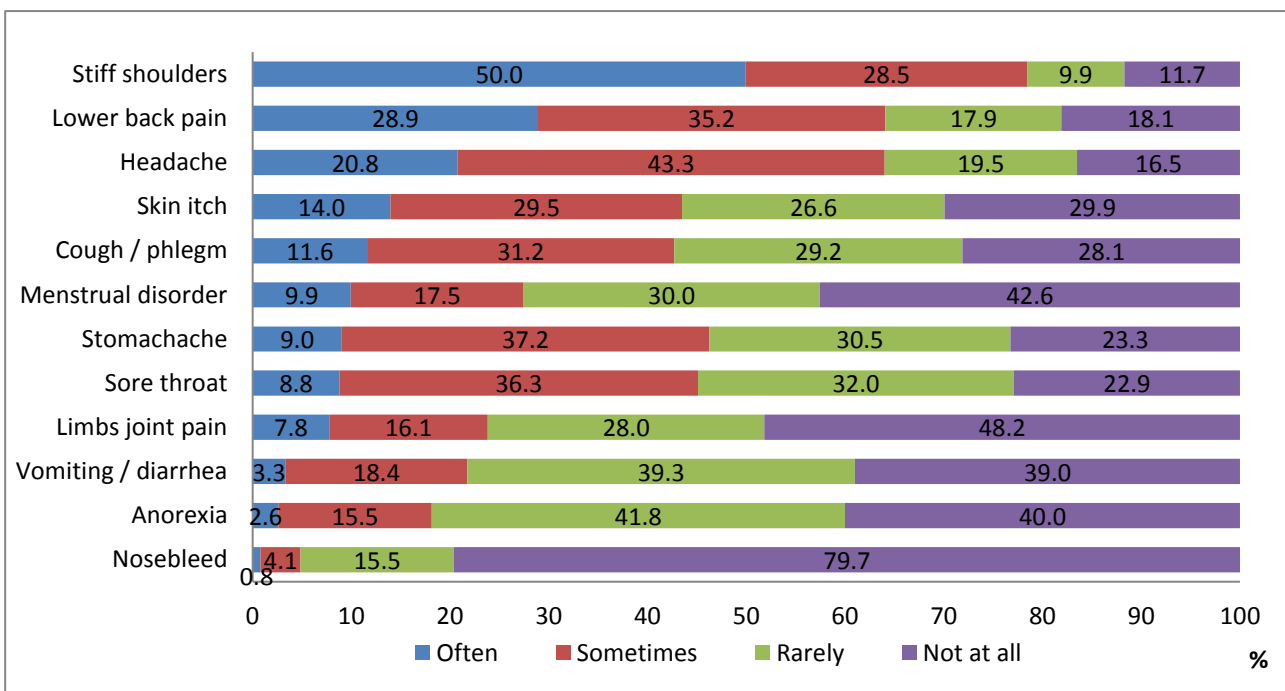


Figure 4-2 Subjective symptoms of parents (Past 6 months)

We asked respondents about their “symptoms in the past six months.” “Stiff shoulders” had the highest rate of “often” with 50.0% followed by “Lower back pain” with 28.9% and “Headache” with 20.8%. These leading symptoms are in agreement with the subjective symptoms among women in their 30s reported in the “Comprehensive Survey of Living Conditions” (2010) by the Ministry of Health, Labour and Welfare (MHLW). In addition, “Skin itch” ranked fourth with 14.0% after these top 3 symptoms.

4.3 Parents are slowly recovering serenity but support is needed

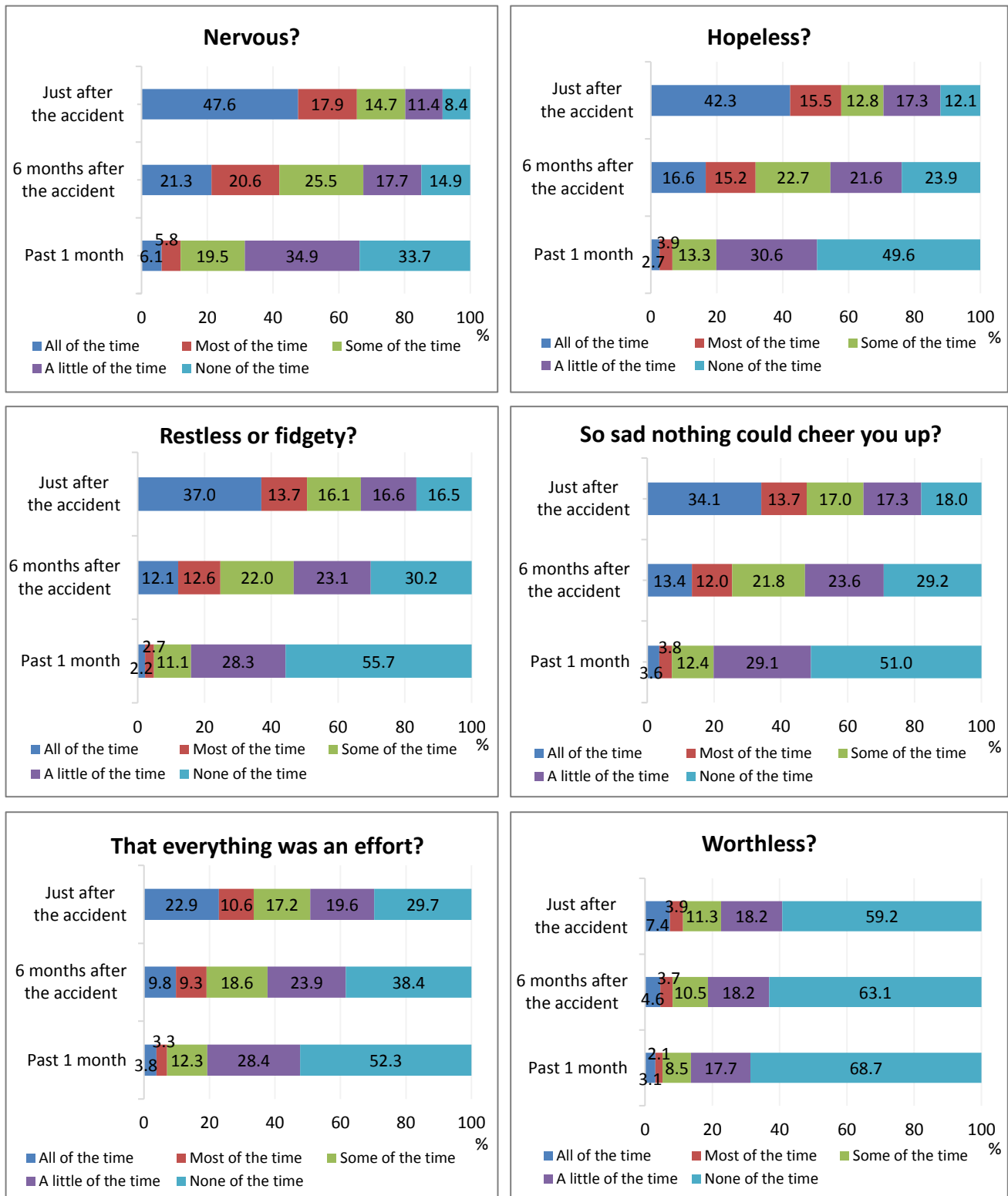


Figure4-3: Changes in mental health conditions of parents

We asked respondents about their “mental health conditions” by using six items (K6) as in the “Comprehensive Survey of Living Conditions” (2010) conducted by the MHLW. For each item, respondents were asked to indicate about how often they had this feeling for three points of time: “just after the accident,” “six months after the accident,” and the “past one month.”

As a result, the rate of “all of the time” gradually decreased over time in all items. This indicates that many respondents have slowly recovered serenity from the chaos “just after the accident.” In the “past one month,” the rates have decreased but there are still some people who are suffering from these six symptoms “all of the time.” This suggests that support is needed to recover the wellbeing of parents.

5. Life following Fukushima nuclear accident

5.1 Changes in lifestyle following Fukushima nuclear accident have three trends”

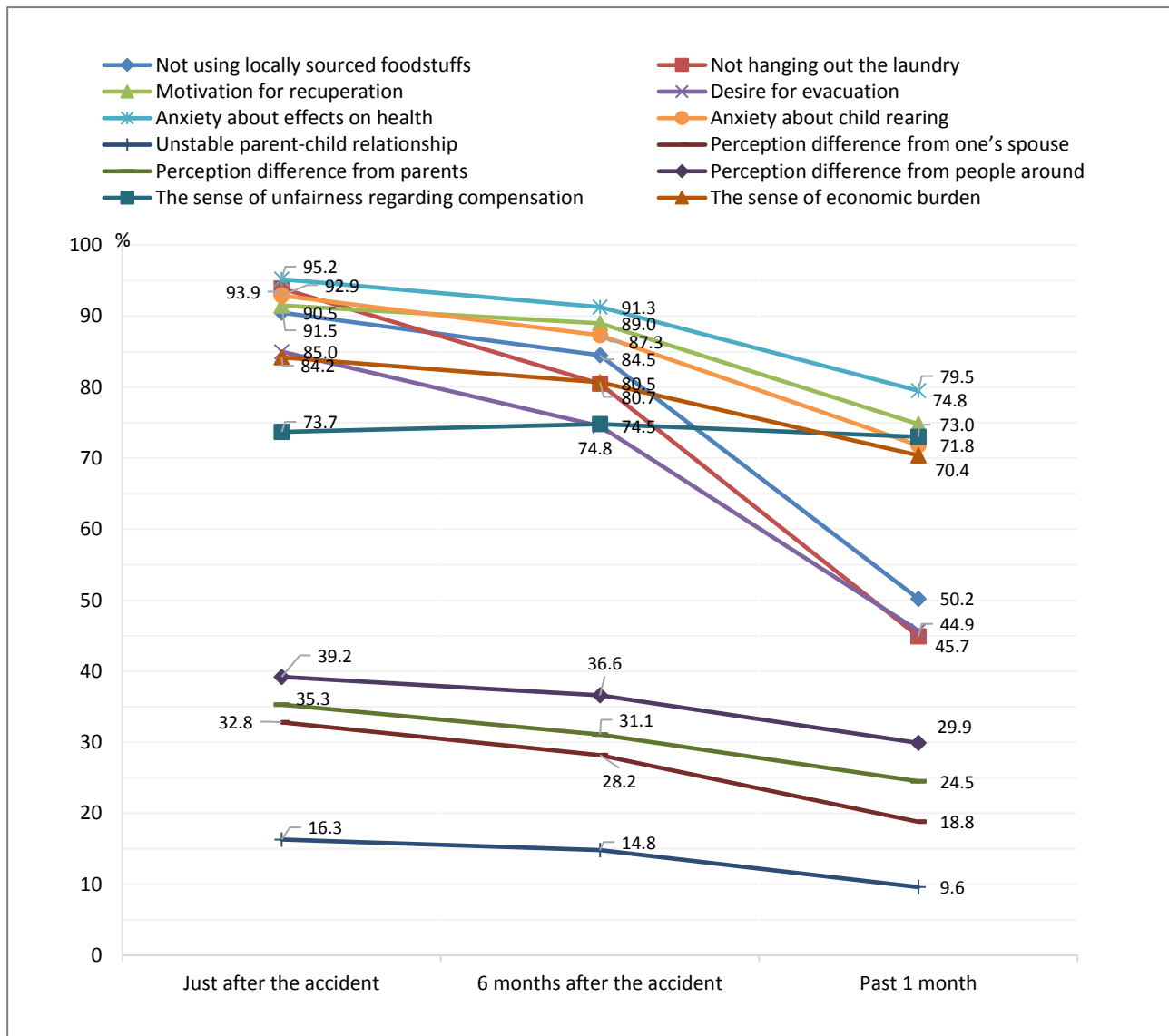


Figure 5-1: Lifestyle changes after the accident (the total percentage of “true” and “rather true”)

We asked respondents how their lifestyle changed in the aftermath of the accident for three points of time: “just after the accident,” “six months after the accident,” and the “past one month.” First, the rates of those who agreed or somewhat agreed to the following items decreased over time: “I am motivated to go to fresh to some place where there is a lower level of radiation,” “I feel anxious about health effect of radiation exposure”, “I feel anxious about child rearing in Fukushima”, “I do not hang out the laundry,” “I do not use locally sourced foodstuffs,” and “I wish to evacuate if possible.” Second, the rates of those who experienced the feelings of the following items remained high over time: “After the accident, I feel financially burdened due to increased spending one way or another” and “I feel a sense of unfairness over compensations of the nuclear power plant accident.” Third, the rates of those who agreed or somewhat agreed to the following items remained relatively low over time: “I feel there is a perceptual difference between my husband (or spouse) and me over response to radioactivity,” “I feel there is a perceptual difference with parents over response to radioactivity,” “I feel there is a perceptual difference with people around me over response to radioactivity,” and “Parent-and-child relationship became unstable in the aftermaths of the nuclear power plant accident.”

5.2 Over 70% of residents who experienced evacuation were on short-term evacuation of “less than 3 months”

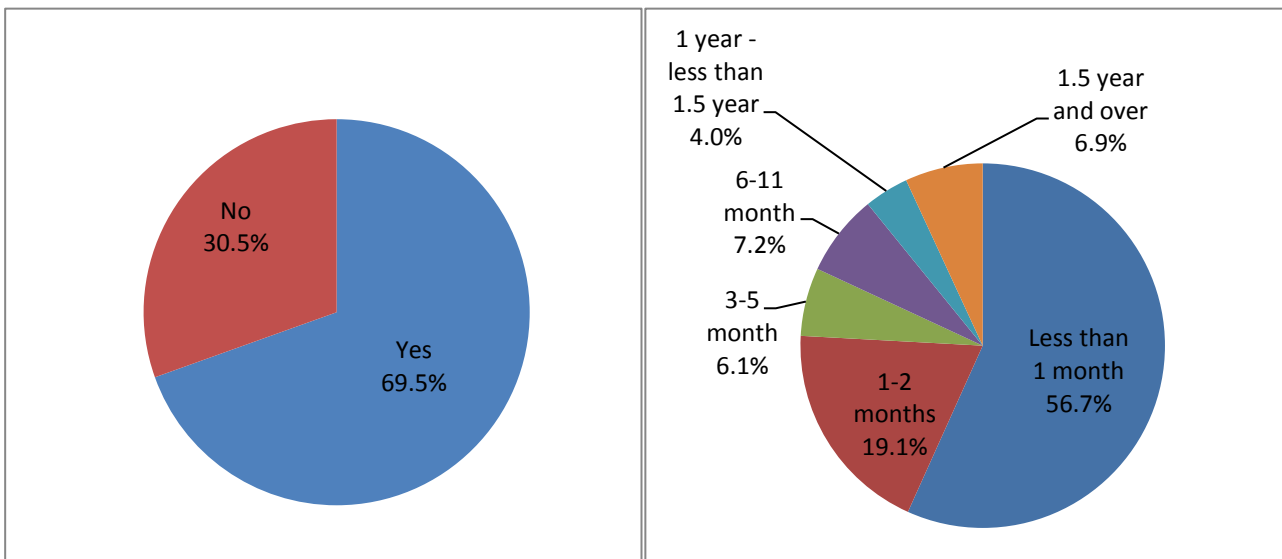


Figure 5-2: Evacuation experience

Evacuation period

We asked respondents whether or not they experienced evacuation following the nuclear power plant accident. With regard to evacuation experience, 69.5% indicated “yes” proving that almost 70% experienced evacuation. With regard to evacuation period, over 70% indicated “less than 1 month” or “1-2 months.” This shows that many residents evacuated for a short period of time.

5.3 Frequency of recuperation is on the decreasing trend

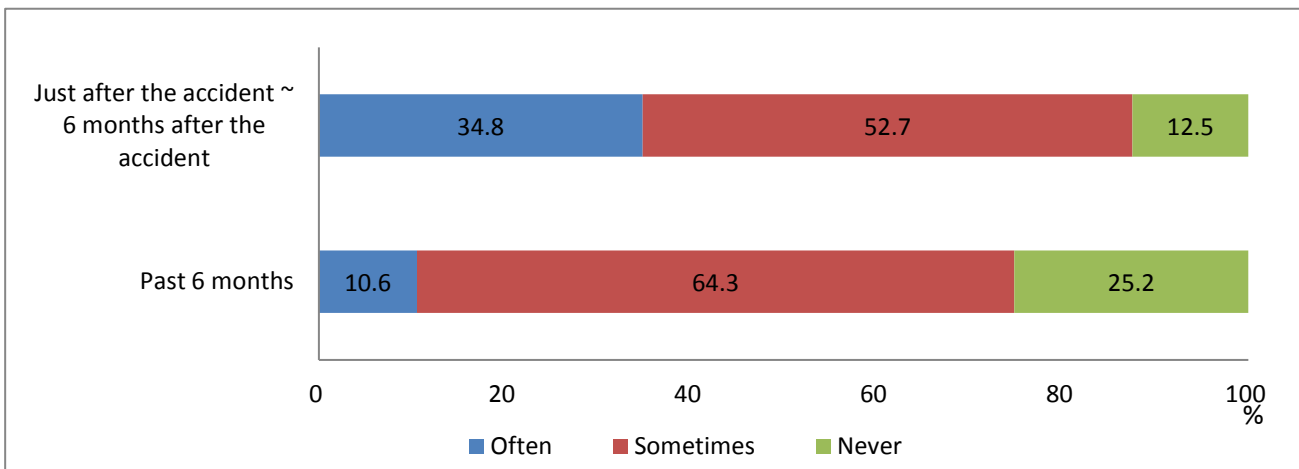


Figure 5-3: Frequency of recuperation activities

We asked how often respondents engage in recuperation. Of respondents, 34.8% “often” went on recuperation in the “just after the accident~ six months after the accident” but the rate decreased to 10.6% in the “past six months.”

5.4 Radiation exposure would affect the “future” than “present,” “mental health” than “physical health,” and “children” than “parents”

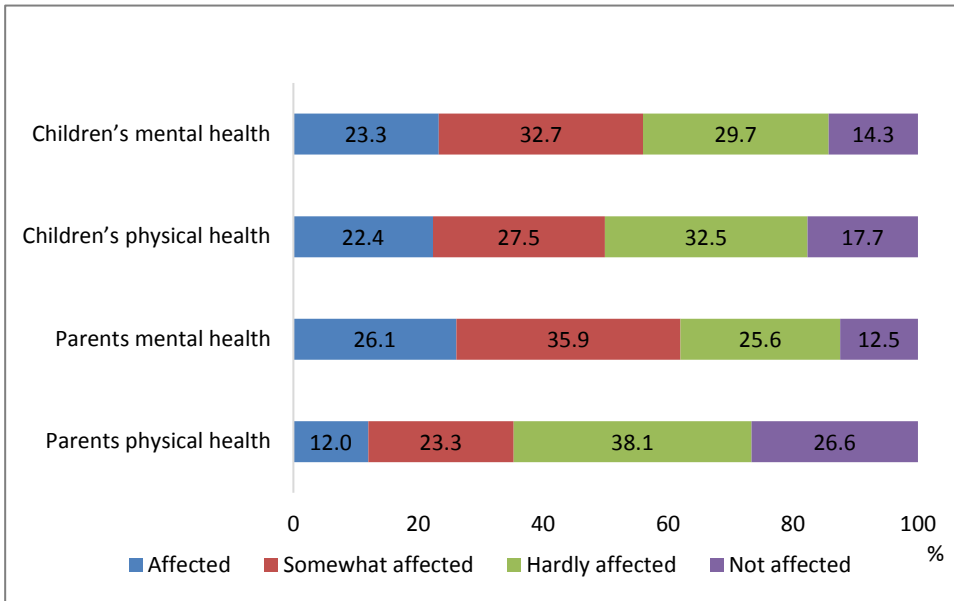


Figure 5-4: Health effects of radiation exposure: **Present**

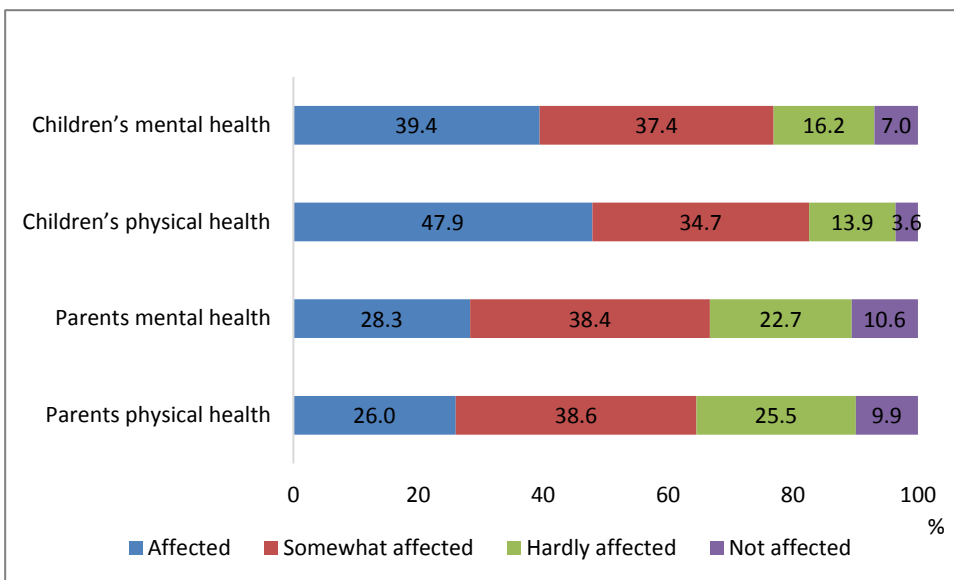


Figure 5-4: Health effects of radiation exposure: **Future**

We asked respondents how they think about the effects of radiation exposure on mental health and physical health of children and parents both in the “present” and “future.” The results suggest that many parents are anxious that radiation exposure would affect: (1) the future than the present, (2) mental health than physical health, and (3) children than parents. Regarding the “present” health state, the percentage of the participants that answered parents’ “mental health” is affected seems to be higher than those that answered children’s “mental health” is affected. Furthermore, regarding the “future” health state, the percentage of the participants that answered children’s “physical health” would be more affected than their “mental health” was high.

6. Attachment to communities and evaluation of authorities

6.1 Over 70% of residents continue to “like this area”

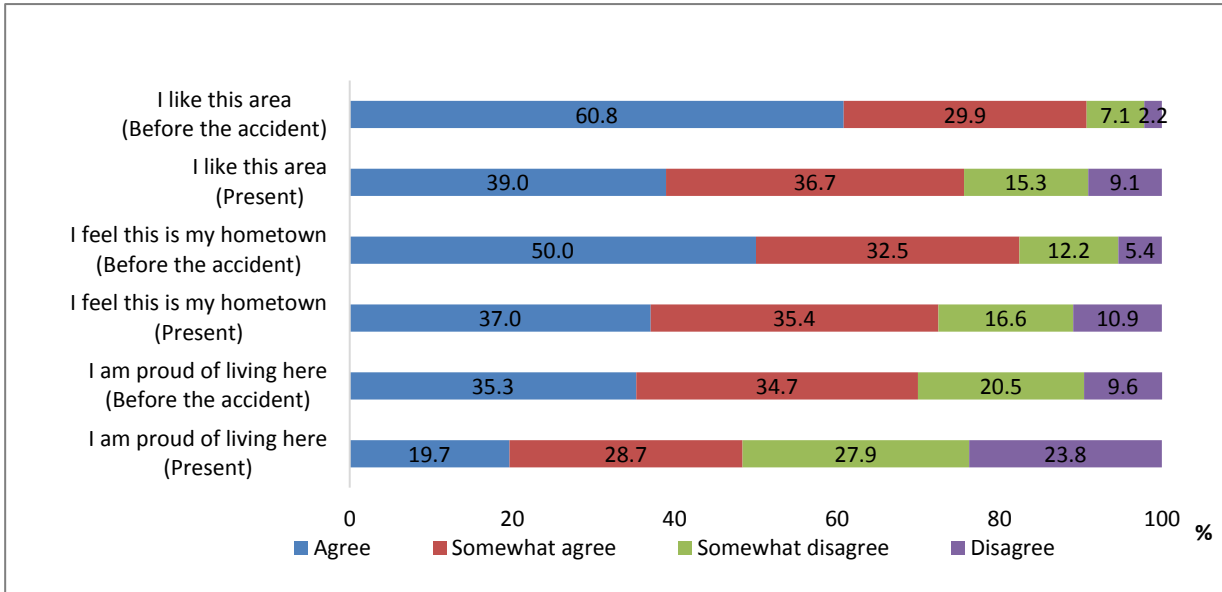


Figure 6-1: Attachment to communities

With regard to the degree of community attachment, respondents indicated how much the following items apply to them: “I like this area,” “I feel this is my hometown,” and “I am proud of living here.” We asked each item for two points of time: “before the accident” and the “present.” For all items, the rates of those who agree with the item decreased over time from “before the accident” to the “present.” The combined rate of those who “agree” and “somewhat agree” with “I like this area” continues to remain high even today, accounting for 75.7% of respondents.

6.2 “Cities, towns, and villages” are the most recognized for their efforts

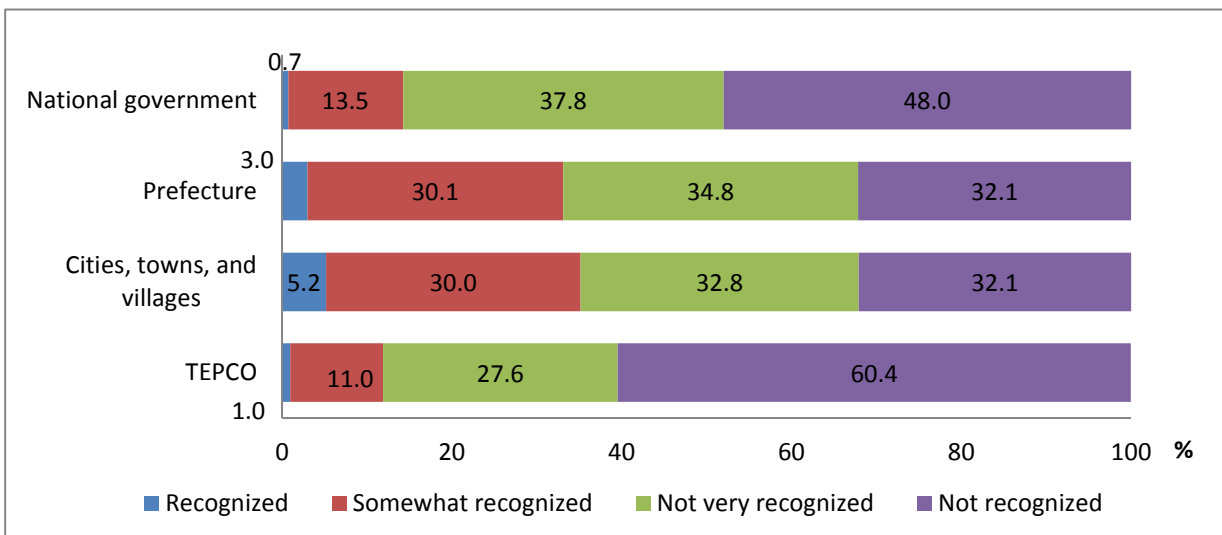


Figure 6-2: Evaluation of authorities

Respondents evaluated “Japanese national government,” “Fukushima prefecture,” “municipalities” and “Tokyo Electric Power Company Holdings, Incorporated (TEPCO)” on the efforts following the nuclear power plant accident. The results show that the rates for “municipalities” were relatively high with 5.2% indicating “recognized” and 30.0% indicating “somewhat recognized.” This shows that residents appreciate the local efforts by municipalities. On the other hand, the rates were very low for “Japanese national government” and “TEPCO.” This indicates that residents lost trust in these parties in the aftermath of the nuclear power plant accident.

7. Free descriptions of a questionnaire

7.1 For childcare-related services, residents want indoor playgrounds the most in cities, towns, and villages

Valid responses	477(18.3%)
In-room (indoor) playgrounds	163
Playgrounds (outdoor)	12
Recreation / relaxation	32
Decontamination	17
Clubs / circles	16
Temporary childcare service	11
Nursery school / kindergarten	18

We received opinions from 477 respondents on what kind of childcare-related services that they want the cities, towns, and villages to provide. The result indicated that indoor playgrounds are in highest demand (with 163 opinions).

7.2 The term “anxiety” was most frequently used

Valid responses	1183(45.3%)
Anxiety (children’s future, health, marriage)	438
Radiation / radioactivity	318
Evacuation	289
Decontamination	221
Playgrounds / play	209
Work	121
Stress	92
Indemnity, compensation, security, and warranty	77,46,43,16
(Financial) burden	70

We received opinions from 1183 respondents (45.3%) in the last free descriptions of the survey. The most frequently used term among their opinions was “anxiety” followed by the following terms: radiation/radioactivity; evacuation; decontamination; playground/play; work; indemnity, compensation, security, or warranty; distress; and (financial) burden.

7.3 Respondents comments

With the passing of time, the nuclear power plant accident has slowly become a thing of the past. In the midst of my daily life, I find myself less concerned about radiation. Yet, when I look at my children, I cannot stop questioning myself, “Are we okay to stay like this? What should we do? What will happen to my children’s future? Maybe they will not be able to get married because of the radiation issues. Will I be able to take responsibility as a parent?” Once I start thinking about these things, all my thoughts get tangled so I try not to think about them. There are different views even among doctors: whether or not there would be any health effects from the nuclear accident. What is the truth? Maybe no one knows for sure but I wish someone could just show us the truth.

I am anxious that my health would suffer a few years later or sometime in the future. I want to believe that I will be okay but I am still anxious. There are people still on evacuation. When I hear about those who are leaving or those who left, I realize that things are still not okay here. I am stressed out just by thinking about this. I want a sense of security that we are okay. I hope that the government, municipalities, or related parties will continue to disseminate health information. I want them to address countermeasures in case something happens to our health. For that, I strongly seek concrete measures related to hospitals, health checkups, and other related issues.

People that I am close to and I myself were discriminated against just because we are from “Fukushima Prefecture.” I want there to be more opportunities for people and children in other prefectures to learn the correct facts about Fukushima and for my children when they leave Fukushima or get married in the future. I want the government to educate them that discrimination is not allowed. I want the government to conduct health surveys and tests on children in a long run. I do not want the government to say, “This level is somewhat acceptable” or “We are unable to confirm any causal relations between radiation exposure and health symptoms.” I want the government to pay close attention, respond to even small changes, and provide lifelong support (including financial support). Not for us adults but at least for children.

I love my children and I love my hometown. I can now appreciate these simple things from the bottom of my heart, because of the accident. I truly think that ordinary life that we used to take for granted was truly precious. I have not lost my hope. I will slowly move forward, together with people who stayed in Fukushima and have been striving no matter what other people say. That is why I will not evacuate. Fukushima will never give up. This feeling will never give up.

I live in the area of Fukushima City that has a relatively low level of radiation. Yet, I hardly let my children play outside. Even when there is a lot of snow in our yard, I feel sorry for my children that I cannot let them play with the snow. Despite that now is an important period of children’s growth that they learn various things firsthand from exploring different things outside, I have to tell my children daily, “Do not touch this.” I am very worried what kind of consequences this will have on my children’s growth.

Considering that children cannot freely play outside, municipal taxes are too expensive! Taking health risks into account, taxes should be exempted. I want to take my children to some place with a low level of radiation so that I can let them play all they want. Sadly, I can only take them to places once or twice a year because we do not have money! Children of this age period love picking up fallen leaves, acorns, and stones but I always have to say “No!” to my children and I feel sorry. There are playground equipment set indoors but children cannot come in touch with nature. Whether visiting far places or evacuating, it is all about money. I wish families with children would get discounts on highway tolls and Shinkansen tickets. Those with high income may have no problems, but it is hard for those without it.

Despite being a resident of the voluntary evacuation area, I personally find it difficult to evacuate as a parent with children who are attending the local school. There are many residents in the same situation. In the midst of this struggle, I cannot see what Koriyama City is doing in particular. In addition to proving support to evacuees as the

city has focused on, I want Koriyama City to think about the future of the residents who have remained in Fukushima Prefecture or Koriyama City: those who chose not to evacuate and those who are unable to evacuate. I am worried about our children's future.

As the efforts made by cities, towns, and villages in Fukushima Prefecture are completely different from each other, I feel that there are rising gaps among municipalities. For instance, Koriyama City distributed dosimeters to children after six months from the accident. Even today, decontamination has hardly been conducted and children have not yet been tested. I also feel that the prefectural government is primarily supporting farmers. I think that serving locally grown vegetables and rice in school lunches is unacceptable even if the radiation levels are below the limits and radioactive materials are not detected. Is there even an acceptable value for radiation? In reality, we are constantly exposed to radiation no matter where we are. As long as we are in Fukushima, we will continue to be exposed to radiation for many decades to come. At home, we consume ingredients grown afar from Fukushima.

8. Conclusions

The results of this analysis are summarized as follows:

- (1) A little less than 20% of respondents relocated after the accident. At the same time, 70% indicated that they “want to keep living in the current area.”
- (2) The length of time that children play outside has gradually increased compared to just after the accident. However, over 10% of respondents indicated that their children “do not play outside at all.”
- (3) With regard to the overall health of children, over 90% of respondents indicated “good” or “rather good.” The leading symptom among children is “skin itch.”
- (4) With regard to the overall health of parents, over 70% of respondents indicated “good” or “rather good.” While their subjective symptoms correspond with the common symptoms reported in the national report, “skin itch” ranked as one of the leading symptoms, as is the children’s case.
- (5) With regard to the mental state of parents, they have slowly recovered serenity with the passing of time. However, there are still people who are in the recovery state even if there may not be many. This finding suggests that it is necessary to provide support to parents.
- (6) With regard to the changes in lifestyles following the nuclear power plant accident, three trends were observed. The first trend is the changes that rapidly decreased over time from just after the accident. The second trend is the changes that remain high with small changes. The third trend is the changes that remain low and unchanged. Since changes in lifestyles can cause major stress, a support system is essential in order to assist people recover their normal lives before the accident.
- (7) Despite that the degree of community attachment decreased in the aftermath, over 70% of respondents indicated that they still “like this area.”
- (8) With regard to the efforts following the accident, respondents most highly recognized the local efforts by municipalities.

We have conducted more detailed analysis of this survey by aggregating the data by area. We will release the results online on the website of Fukushima Child Health Project and accordingly report the information to relevant cities, towns, and villages, as well as the prefecture. Our statistical surveys such as this one aim to grasp the situations faced by people in Fukushima. Along with those surveys, we have been conducting more detailed interview surveys. Through these initiatives, we aim to delve into the issues and challenges faced by people and by different areas in Fukushima.

We thank you for your continued support.

Fukushima Child Health Project
<http://mother-child.jpnwellness.com/>