

1,200 Fukushima Mothers Speak

The lives and health of mothers and children in central Fukushima Prefecture as seen in their free-comment answers to a questionnaire survey

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1 The Location of the Issue

The aim of this study is to analyze the information given in the free-comment section of a questionnaire survey conducted on mothers (guardians)¹ of children born in fiscal 2008 in nine localities in central Fukushima Prefecture (the Nakadori region) in the wake of the Fukushima nuclear accident of March, 2011, and to investigate the particular features of this information. The impact of radiation from the Tohoku Earthquake and the Fukushima nuclear accident was felt over a widespread area, and there were cases of contamination on a mass scale, with potential long-term health consequences. Against this background, how did the life environment for mothers and children in these nine localities in central Fukushima Prefecture change, and what psychological reactions to these changes did they display? Also, what kind of measures have they been taking in response to the risk of contamination by radiation? Again, how has these mothers' and children's quality of life changed as a result, and what (if any) effects have there been on their health? Focusing on these points, we analyzed and investigated the information that mothers had given in the free-comment section of the "Survey on the Lives and Health of Mothers and Children following the Fukushima Nuclear Accident" which was carried out by the Fukushima Child Health Project from January to May of 2013.

First, let us review the ages and home locations of the mothers who recorded statements in the free-comment section of the survey, along with the numbers and ratios of respondents. The total number of responses equals the total number of respondents who submitted completed survey sheets.

【Age】

Age group	First survey (2013)		
	Number of responses	Total number of responses	Response ratio
20s	162	464	34.9 %

¹99.1% of respondents to the survey were women. 98.7% gave "mother" as their relationship with their children, with the remainder comprised of "father" and "grandmother."

30-34	414	927	44.7 %
35-39	434	857	50.6 %
40s	180	347	51.9 %
50s and over	4	15	26.7 %
Not recorded/other	7	10	60.0 %
Total	1201	2620	45.8 %

【Home locations】

Locality	First survey (2013)	
	Statements entered/total answers	Ratio of answers with statements entered
Fukushima City	430/881	48.8 %
Koori	22/34	64.7 %
Kunimi	15/27	55.6 %
Date City	68/175	38.9 %
Koriyama City	467/1073	43.5 %
Nihonmatsu City	79/175	45.1 %
Otama Village	16/44	36.4 %
Motomiya City	54/125	43.2 %
Miharu	12/34	35.3 %
Other than the nine municipalities above	38/53	71.7 %

2 Classification and General Overview of Free Comments

A wide variety of comments and statements were recorded in the free-comment section. In this study, they are broken down into eight categories.

【Eight categories】

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|---|
| <ol style="list-style-type: none"> 1. Dwelling 2. Diet 3. Family finances 4. Child-raising 5. Personal relationships 6. Information 7. Compensation and damages 8. Health |
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We hereby present the basis for which we divided the opinions into these eight categories. In regard to the issue of how the life environment of mothers and their children born in fiscal 2008 in these nine municipalities in central Fukushima Prefecture changed in the wake of the nuclear accident, this paper analyzes categories 1 to 7 above. Leaving the particular concrete features of each category to more detailed discussion later, let us here give the rationale on which they were decided.

A person's life environment largely depends on their awareness and choices about dwelling space. In order to avoid having their life environment exposed to radiation, people are required to plan and execute risk-management behaviors such as evacuation or moving house, recuperation, and decontamination. So, we collated and broke down opinions on dwelling (Category 1). We also divided the major everyday-life issues facing child-raising parents into the general categories of diet (Category 2), family finances (Category 3), child-raising (Category 4) and personal relationships (Category 5).

The majority of the opinions on diet (Category 2) related to buying foodstuffs and water from other prefectures. While this issue also directly relates to family finances (Category 3) and child-raising (Category 4), coping behaviors whereby people attempted to avoid potential internal exposure to radiation were conspicuous, and in view of the particular features of the issue, we decided to classify diet as a separate category. In addition, numerous opinions were given on drying laundry outside. Since this area also features coping behaviors to avoid radiation and is a basic issue for everyday life, it was grouped under this category.

Family finances (Category 3) is set as a category with the intent of clarifying changes in the subjects' life environment from the economic perspective. Income and spending were separated, and spending was sorted by item of expenditure.

Child-raising (Category 4) is set as a category in order to record changes in the subjects' life environment with the focus on child-raising. However, this category includes a very broad range of opinions on child-raising, including vague statements of the unease felt by parents after the nuclear accident. Given the strong linkage between the nuclear accident and radiation, we further broke this category down into the three concrete factors of play, responses to radiation (checking for radiation, etc.), and childbirth; remaining statements were classified as "other opinions."²

In order to clarify changes in the subjects' life environment from the perspective of changes in their interpersonal relationships, the category of personal relationships (Category 5) is broken down in line with the nature of the relationships involved. In specific, these are the four categories of husband and wife/parents and family, neighbors and acquaintances, unrelated other people, and other parties encountered in

² Concerns about children being subjected to discrimination and prejudice are directly linked with other concerns about child-raising; however, placing the focus on the interpersonal dynamics involved, we decided to cover this issue under "personal relationships" (Category 5).

relation to [evacuation and] the handling of compensation claims.

After the Fukushima nuclear accident, one source of stress and worry for parents and children in central Fukushima Prefecture was the unreliability of the available information, and this led confusion and anxiety on the part of parents attempting to adopt coping behaviors for radiation. Simply and specifically speaking, it was impossible for people to know who and what information to believe. These heartfelt anxieties about radiation and worries about behavioral risks which seem to spew forth in the mothers' opinions [about their access to reliable information] have been grouped under "information" (Category 6). This category is broken down into the two areas of "mistrust of information" and "waning interest" (a seemingly unavoidable development in daily life as everyday life goes on and a disaster recedes into the past).

Opinions on the procedures taken for compensation and damages after the nuclear accident have been grouped in "compensation and damages" (Category 7). Finally, we have compiled opinions on present and future health impacts for the mothers and children themselves under "health" (Category 8). Although relationships of cause and effect for the relevant health impacts are at the present stage yet to be clearly defined, this category comprehensively covers the mothers' opinions about present and future health impacts on their children.

The rationale for creating the eight separate categories above is indeed important, but so are the organic links which join them. Keeping this in mind, let us here give a general outline of the particular features and overall trends of each category.

(1) Dwelling

A person's dwelling, encompassing life aspects such as their living space, has a decisive impact on their life environment. After the nuclear accident of March 2011, the area in which the survey respondents lived had the dubious distinction of being exposed to radiation. Because of this, as we shall see later, the survey respondents were confronted with a wide range of stressors and required to adopt makeshift forms of coping behavior given the changes in their life environment. It is also possible that these changes impacted on the health awareness and worries of the mothers and children themselves. The only way to fundamentally resolve this issue is to clear the area of the dwelling from exposure to radiation. Given this, the survey respondents planned and undertook the following kinds of action:

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| <ol style="list-style-type: none">1) Change of dwelling (for evacuation)2) Temporary move (for recuperation)3) Getting rid of radiation (decontamination) |
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However, each approach has its difficulties, and the anxieties that afflicted the

survey respondents remained unresolved at the fundamental level. On this basis, we will examine in a concrete manner how the life environment of the survey respondents changed.

(2) Diet

The survey respondents are faced with a wide range of stressors; among them, stressors involving health are the most prominent. One stressor, for example, is potential internal exposure to radiation through eating contaminated food. The coping behavior of avoiding locally produced foodstuffs and drinking water was born from this stressor. Mistrust of information also lies in the background. As a result, the strain on family finances has grown, tying in with economic stressors.

Also, radioactive particles can stick to drying laundry and make an entry into the house, making it necessary to dry it inside. This stressor generated opinions about avoiding drying laundry outside.

(3) Family finances

Most of the survey respondents were faced with economic stressors involving increased strains on family finances. These strains are produced by coping behaviors against radiation.

Furthermore, most of the survey respondents have not received compensation commensurate to the damages they have suffered, and they thus necessarily feel that they have no way to make up for the increased strain on their family finances. They face amplified economic stressors, and this in turn produces stressors involving trust in the government and Tokyo Electric Power Company (TEPCO).

(4) Child-raising

(i) Children's play

The area of play involves observable difficulties with stressors such as lack of exercise because it is difficult or impossible to play outside. There are limits to the space available to play inside and the effectiveness of recuperation, making it difficult to resolve such stressors; this in turn increases the range of stressors in action.

(ii) Responses to radiation (checking for radiation, etc.)

Stressors involving trust are produced through mistrust of information on radiation checks and the findings of such checks, again increasing the range of stressors involving impairments to health.

(iii) Childbirth

Stressors involving the impact of radiation on unborn children were apparent. There are respondents who had to struggle with the question of whether or not to go through with their pregnancy, or who suspected that the miscarriages they had suffered were due to radiation.

(iv) Other stressors

This area covers general stressors, including the accumulation of stressors involving daily life given in other categories (such as economic stressors stemming from increased strains on family finances), other vaguely defined or undefined stressors, and the difficulty of child-raising, etc.

(5) Personal relationships

The nuclear accident has also caused major changes in personal relationships. In particular, different opinions on radiation and differences in coping behaviors against radiation risk have had profound impact on personal relationships. In the domestic sphere, conflicts of opinion about the best approach to coping behaviors after the nuclear accident have led to conflicts and friction between husbands and wives, and parents and families. Some of these disagreements have progressed to the point of family breakdown. In their relationships with neighbors and acquaintances, people have also felt the stress of suppressing their anxieties and real feelings, so as to avoid quarrels and disagreements with the people around them. In their dealings with unrelated other people, many respondents have cited facing discrimination and prejudice for being from Fukushima as a stressor. Furthermore, the allocation of compensation and damages after the nuclear accident has led to people feeling shortchanged compared to evacuation areas given priority over their own, and subject to unfocused, smoldering resentments.

(6) Information

Most of the survey respondents mistrusted the information they were being given. There were misgivings about contradictions in the information and mistrust of the bodies providing it. This mistrust of information has led to inadequate or exaggerated coping behaviors, and the problem is difficult to redress.

Mistrust of information also led to waning interest in the issues on the part of the survey respondents, and in turn uneasiness when people happened to realize the degree to which their interest in the issues had waned. These stressors, while causing people mental distress, also produced a sense of despondency in the face of the issues.

On the other hand, concerns were voiced that Fukushima was being forgotten, or that people from outside the prefecture should be better informed of its ills. In the background, there were fears of waning concern and decreasing support for children of Fukushima facing the long-term consequences of the nuclear accident.

(7) Compensation and damages

(i) Compensation

The majority of the survey respondents are stressed by not being able to receive adequate compensation. There was a huge number of expressions of dissatisfaction

about compensation. The survey respondents feel that they have failed to receive compensation commensurate with the damage they have suffered. These stressors have added to their economic misgivings. In addition, the concern was voiced that “We may not get any compensation for our children’s health problems in the future.”

(ii) Social security

The majority of the survey respondents faced stressors in regard to impairments to their children’s health by radiation. They expect all possible measures to be taken to prevent such impairments to health, along with early detection (and the implementation of appropriate medical measures). In concrete, they have pointed out the need for monitoring, with regular check-ups and so forth. Facing economic stressors, they have also pointed out the need for benefits in some form, given the increased strains on their family finances.

(iii) Taxation

As stated above, most of the survey respondents are subject to economic stressors stemming from increases in spending caused by radiation. Property prices have declined and the residential environment has deteriorated, and even though tax reductions were made in 2011, there are doubts about how the burden of property and residential taxes is being shared out. This also constitutes a form of economic stressor.

(iv) Overall response

The response made by the government and TEPCO has received exceptionally low ratings overall. The people affected are stressed, anxious and mistrusting. Also, people’s opinions on the pros and cons of nuclear power have been formed in response to the government and TEPCO’s handling of the situation since the nuclear accident, and continue to be shaped by their actions. In addition, some people think that all nuclear power plants should be decommissioned.

(8) Health

Although the cause-and-effect relationships with the nuclear accident are yet to be clearly defined, a wide range of symptoms have been diagnosed in children. The stresses involved for parents have led to them being diagnosed with medical complaints and conditional disorders that seem to stem from these stressors.

Having thus run through the categories into which the respondents’ free comments are arranged, let us organize them in more detail the following table:

【Detailed Table of Categories】

1 Dwelling
(1) Evacuation [in many or most cases voluntary change of residence]
(i) Still under evacuation

(ii) Evacuated but returned home
(iii) Wants to but cannot evacuate
(iv) Not evacuating
(2) Recuperation
(i) Wants the recuperation program expanded
(ii) Wants to get information about recuperation
(iii) Satisfied with recuperation
(3) Decontamination
(i) Satisfied to some extent with decontamination
(ii) Not satisfied with the decontamination procedures carried out
(iii) Wants decontamination to happen
(iv) Doubtful of the benefits of decontamination (regardless of whether or not it has taken place)
2 Diet
(1) Food
(i) Avoids locally produced foodstuffs and tap water where possible
(ii) Uses locally produced foodstuffs and tap water for lack of alternatives
(iii) Not satisfied with school (nursery) lunches
(2) Laundry
3 Family finances
(1) Income
(2) Spending
(i) Expenditures for evacuation and maintaining two residences
(ii) Expenditures in regards to radiation
(iii) Alternatives to playing outside
(iv) Expenditures on foodstuffs and water imported from other prefectures
(v) Taxation and public-utility charges
(vi) Insurance
(vii) Housing expenses
4 Child-raising
(1) Play
(i) Children allowed to play outside
(ii) Children's outside play limited
(iii) Locations for playing inside
(2) Responses to radiation
(i) Check-ups for children
(ii) Accumulators ("glass badges")

(3) Childbirth
(i) Pregnancy
(ii) Miscarriage
(4) Other
5 Personal relationships
(1) Husband and wife/parents and family
(2) Neighbors and acquaintances
(3) Unrelated other people
(4) Other unrelated people who have different evacuation and compensation treatment
6 Information
(1) Information-gathering
(i) Mistrust of information
(ii) Waning interest
(2) Providing information
7 Compensation and damages
(1) Compensation
(i) Dissatisfaction with the discontinuation of compensation, and compensation for children's damages in the future
(ii) Dissatisfaction with the availability and scope of compensation
(2) Social security
(i) Children's health
(ii) Burdens on family finances
(3) Taxation
(4) Overall response
(i) Dissatisfaction with the government's handling of the situation
(ii) Dissatisfaction with TEPCO's handling of the situation
(iii) The pros and cons of nuclear power, taking the nuclear accident into consideration
(iv) Doubts about how donations are being used
8 Health
(1) Children
(2) Parents

Based on the categories above, we will look at the specifics recorded in the free-comment section of the survey carried out between January and May 2013. It should be stressed that the free comments below constitute opinions expressed in the first half of 2013, and that the respondents' opinions and circumstances may have changed as of the present time of writing, which is September 2014.

Next, let us outline our policy in covering the opinions in the free-comment section in line with the category schema given above. Firstly, as a basic approach we have aimed for comprehensive coverage of the opinions expressed in each of the categories and areas. However, we have refrained from including information involving a high possibility that the individual respondent could be identified thereby. Specifically speaking, while we have included the names of localities and areas because the identification of individuals is difficult at this level, we have refrained from giving more detailed locational information such as city-block or street names etc. In such cases, we have quoted other opinions which are similar in gist but whose content precludes easy identification of the individual respondent. Secondly, the opinions recorded as free comments are, with one exception, all hand-written. Consequently, there are numerous typographical errors and skipped letters. We have left these uncorrected to the extent possible. [Note: For ease of legibility, corrections have been in the English translation.]

3 Dwelling

3.1 Evacuation [in many or most cases voluntary change of residence]

In the dwelling category, opinions on evacuation are divided into the groupings (i) still under evacuation, (ii) evacuated but returned home, (iii) wants to but cannot evacuate, and (iv) not evacuating. Of these opinions, the most numerous was “wants to but cannot evacuate,” followed by “still under evacuation” and “evacuated but returned home.”

(i) Still under evacuation

People still under evacuation complained of the stressors involved in being separated from the family and the burdens on their family finances:

- “Ever since the nuclear accident I’ve wanted to get out of here, but what with the kids’ school and my husband’s job (at a gas station) we haven’t been able to move. But I thought it’d be good to get away even just at the weekends and summer and winter vacations and so on, so I rented a place in Yonezawa City, Yamagata Prefecture so we can get away, and I feel relieved about that. But even so, even if we do not need to pay the rent, there’s the electric, gas and water bills, and the money for gasoline from Fukushima←→Yonezawa and back, and it all adds up. It’s so hard just to make ends meet.”
- “My family has been split up since the nuclear power [accident], now it’s just me (mother) and the kids. We sometimes go back to the old place to visit, but personally I’m at my wit’s end psychologically. I evacuated [...] for the sake of the kids, but they’re sometimes very disturbed and uneasy with all they’ve had to put up with. They seem to have a very sad and lonely family life, and they just want us all to live together.

- “What they call ‘voluntary evacuation’ – it’s a situation that’s real hard to understand. Even if you go back to your old place and old life, it’s still a stress. Moneywise, it’s so hard to stay living away from the rest of my family – it’s mentally exhausting. But I want to do all I can for the sake of my children’s health. But I don’t know how long I can go on [...]”
- “I was pregnant with my second child when the Earthquake happened, and ever since then I’ve been staying with the kids at my parent’s place, where the [radiation] dosage is low. My husband comes by after work and at weekends. I’m worried about what kind of impact living apart from their father will have on the children, but the dosage is very high in our own area (mountain forest), so we hesitate to go back.”
 - “Right now it’s just me (mother) and my child. We’ve moved to Yamagata City. We moved to a rented house here in August 2011. At first, I always tried to go back to Fukushima with my kid at weekends, so she could have time to spend with her dad. We’re still officially listed as living in Fukushima City, so the paperwork for things like medical bills and vaccinations can be a bit of a pain. In fact, she ought to be starting kindergarten this year and I wanted her to go, but I’ve no idea when we’re going back to Fukushima. Moving is very costly, so it’s been hard to get the kindergarten fees together. So, we’re just going to give it a miss this school year. Next school year too, I want us to hang on here in Yamagata a bit longer.”
- “We’ve evacuated out of the prefecture. I still really don’t feel good about the idea of raising a child in Fukushima. It’s hard on the family finances, but we decided to move so we wouldn’t have any regrets later about not doing it. We’re going to stay out of the prefecture until this child’s ready for first grade. Then we’ll see what the situation is, and decide.”
- “Right now, we’re doing voluntary evacuation. We were living away under evacuation before, and we had our kids change school, but they were moving up to higher schools. So right now, we’re moving back and forth between home and the other place.”
- “We moved out to Tokyo on March 15. We spend half the month there and half back at home. [...] It’s just the two of us for the half-month we’re in Tokyo and for the first few half-months we spent in Fukushima, we didn’t let [our child] go outside [...]”
- “In April 2012, we moved to Ibaragi Prefecture, where my parent’s house is (mother and child evacuation). At the weekends, I leave the kids there and go to work in Koriyama [Fukushima Prefecture] three times a month. I’ve been living like this for almost a year.”
- “After the nuclear accident, we moved to Miyagi. Our place, Nihonmatsu aren’t listed as an evacuation area, even though the radiation levels are high. I’m really

uneasy. [...] We moved for the sake of our children, but there's no work and we have a hard time making ends meet.”

- “When we got the job in Akita [Prefecture] I was stressed about moving our family out of the prefecture for the first time, but at the same time I was relieved. The best thing about moving to Akita was that the tap water was safe to use. And I was able to let the kids go outside normally. The inside dosage was 0.03 in Akita compared to 0.15 in Fukushima, and the difference was a big relief.”

(ii) Evacuated but returned home

Some statements recorded evacuation out of the prefecture followed by a subsequent return to Fukushima. The reasons given were the stress of being separated from the family, and burdens on family finances, etc.:

- “After the nuclear accident, we sent the children to relatives in Nagano Prefecture for about a month, and I got permission from my company to take about two weeks off work. So, we went there together. I got my mom to come with us, and stay with the kids in Nagano. [...] After the schools re-opened, we came back to Koriyama because there was no other choice.”
- “You have to watch out for so many things every day, it's tiring. The kids are still small, so I was worried about a lot of things and I took them without my husband. Money was really tight, and the family was split up. It was so hard I didn't manage to stay away a single year.”
- “We did voluntary evacuation, but it cost money for just a mom and kid to live apart. I couldn't even get any work while our kid was at a nursery school. When we were in another prefecture, there were some people who didn't look very kindly on us evacuees from Fukushima and our children. So that's why we came back to Fukushima.”
- “We did move out, but shortage of money forced us back to Fukushima. I feel terrible for the kids, thinking about the radiation levels here, and I'm always nervous about the future. I really don't know what to do.”
- “To be honest, I'd much rather be staying somewhere else with lower radiation levels, but there are limits to how much I can take, financially and emotionally. There are lots of people in the same situation as us, coming back here because there's no other choice.”
- “After the nuclear accident, I and my kids stayed in Yamagata [Prefecture] for a while. Our family was split up, and I was responsible alone for three children, and about to have my fourth. I think it was really tough on the kids, too. There was no-one around I could ask for help, so I was stressed out every day. I came back to Fukushima in the spring, had my child and we're living here now.”
- “Our kids were eight, five and four years old and we were worried a lot about their health because there was no way of knowing what the future held. I didn't

want to do something I'd regret later, so I left my husband here and moved our three kids to a far-off prefecture with the help of a friend. [...] I was so relieved to get back to Fukushima and have the family all together again."

- "We took our kids out of here to relatives in Yamagata the night before the hydrogen explosion, even though we were very frightened and worried about the neighbors we were leaving behind. And I think that's when our struggles really started. We came back here from Yamagata after about two weeks. [...] After that, I wanted us to move to my parent's place (in Sendai), but my relatives told me "We don't want you coming here bringing your radiation with you." [...] In the fall of 2011, they finally came around, so we were able to move to (my parents' in) Sendai.

We started my sons in another school – they were in the first and fourth grade at elementary – and we planned on staying away for three years. But my eldest son got terribly bullied at school [...] and he came down with a psychosomatic illness. He wanted to try and stick it out, but I decided to move us back to Fukushima because of his illness, and now we're living in Fukushima City.

- "Koriyama City wasn't subject to evacuation, but anyway me and my husband stayed here in Koriyama, and we took our child out of day care and sent him to Minamiaizu with his grandmother. It was voluntary evacuation, so of course we had to find an apartment ourselves, and pay the rent every month. We had to buy all the household white goods you need as well. In the end, it all just cost too much, so the arrangement ended in a matter of five months or so."
- "Thinking about the kids, I moved away with them and left my husband behind. But every week, when my husband came to visit, I'd see how hard it was for them to say goodbye, and I started having doubts if we were doing the right thing, whatever the risk of radiation. As well as that, our locality wasn't one of the listed evacuation areas, so there was no compensation we could get, and it was really tough keeping two households going. So, we moved back in together as a family – it's coming up to a year now.

(iii) Wants to but cannot evacuate

Some statements recorded people wanting but not being able to evacuate. The reasons for this were the stress of being separated from family, increased burdens on family finances, work, housing (mortgages etc.), the stress of changing to a new environment, and concern for parents and family left behind.

- "We built a house, so we couldn't move away even if we wanted to."
- "I'd prefer not to go on living here if possible, but we've got a mortgage to pay off, and my husband is in no position to quit his job. So, there's nothing for it but to take things day by day here. See, for the kids, I think living together in the

same place as a family is the best way to go.”

- “Even though it makes me sick to think that we couldn’t move away even though we wanted to, the very thought of leaving my husband behind and living somewhere else – not having enough money and that – the very idea’s enough to make you lose your appetite. So, we’ve stayed right here in Fukushima.”
- “Fukushima’s not like the big cities. Here, almost everybody has roots in the locality, and the whole idea of moving someplace else is just mentally hard for people to take to, and there’s just no way that people who have nothing at all can move anywhere anyway.”
- “As a single mother, it was just too hard for me to move away to another prefecture, to some place I didn’t know, living among total strangers and not even knowing if I could find work or not.”
- “If I moved, my relationship with my in-laws would get totally messed up. Then there’s my daughter’s new life, and keeping in with my friends [...] Thinking about all that, I just gave up the whole idea of moving to another place, to be quite honest with you.”
- “I think the evacuees are having a really hard time of it even now, but I’m not happy about the amount of compensation they’re getting compared to people who come from areas they couldn’t evacuate out of even though they wanted to.”
- “It just kills me to think that I’m still here in Fukushima even at the risk to my children’s health. Why can’t I take care of the most important thing in my life that needs taking care of? [...] I think the government at all levels should be doing a lot more to take care of parents who wanted to evacuate but couldn’t.”
- “Of course, you can move away someplace else – if your family has plenty of money. So, my kids are gonna suffer physically and mentally? Well there is that to worry about. The fact is that there’s no way I can actually do it (i.e., move away) – for a lot of different reasons – I often blame myself.”
- “There was no way we could move away then even though we’d wanted to. That’s a tremendous regret for me now. Even now, I still wonder if we should move away. Maybe it is just impossible now anyway [...] but I end up feeling like we’ve turned the kids into guinea pigs or something.”
- “We haven’t been able to move. We’re still living here, just like before the accident. [...]. I want people to know that some of us just couldn’t get away. If I could, I’d love to even get the kids away to someplace where they could go out and play in peace to their hearts’ content. But we’d end up splitting up the family if we sent them away.”
- “We wanted to move, but we couldn’t handle the financial issues. There’d be all the stress of the family getting split up and leaving the house here empty. We had to think about it a lot, but we ended up deciding to stay here in Fukushima.”

- “We wanted to go, but we have jobs and so we can’t. I’d like to see them set up a system so anyone who wants to move away can do it.”
- “We just don’t have the money to move. We have a small child, and so there’s a lot for us to worry about, but we still don’t have the money to go anywhere else. We can’t get by. Help! We want to move but we can’t.”
- “Should it be exactly the people who can’t move out of here that they should be trying to help more?”
- “Both me and my husband have jobs, so we’re in no position to move anywhere.”
- “It’s no simple matter for us to just move off somewhere, so we’re still living here in this town. When we factor in everything like jobs, our kids and our everyday lives, we can’t do anything right away. To some extent, there’s no helping things anyway.”
- “We’d like to move, but we have both sets of parents here, and I can’t stand letting go of my own home town.”
- “Some people tell us to leave, but there are so many things to worry about in starting a new life in some completely different place – relationship with new people, jobs, environment for our kids (their mental life). I think there’s an awful lot of stress involved. The fact is, there’s just no way I think I could manage it.”

(iv) Not evacuating

Some statements recorded people’s decision not to evacuate:

- “Que sera sera! We put up a new house, after the Earthquake. That was in July 2012. We’re going to live in Koriyama for good. My husband’s work and my parent’s (mom’s) home and all my friends are here. There’s no way we’re going to throw it all away and move to another place. If we were going to get sick, we would’ve gotten sick already. Even normal people get sick!! Even food – who knows where it comes from? It’s enough to have a nice enjoyable life every day, with nothing untoward happening! Nobody knows what tomorrow will bring.”
- I love my children, and I love my hometown. It’s such a simple thing to say, but it took the Earthquake to really make me feel it from the bottom of my heart. I truly feel that there was something wonderfully valuable in the ordinary and everyday things that we had. But I haven’t given up hope. I know people who’ve stayed in Fukushima, and they’re giving it their all, whatever other people say. So I want us to take things forward here one little step at a time. That’s why we won’t evacuate to anywhere. Fukushima’s here to stay. And I’ll never change my mind about that.”
- “A [nearby] family left for the husband’s parents’ place, outside the prefecture.

My kids were like, “What about us? Aren’t we getting out of here?” I said “Okay, how about it? Do you want to get sent to your aunt in Yokohama?” And they go “No way! We’re not splitting up, we don’t want to!” And with that, we decided to stay. I don’t know if we made the right decision or not.”

(v) The particular features of the issue

The majority of people still under evacuation complain of the discomfort of being separated from the family and increasing burdens on household expenses. There were cases of respondents returning to Fukushima, unable to carry on under these disadvantages. If we add the respondents who were unable to leave despite wanting to, we can see that considerable numbers of people are still living in Fukushima [reluctantly]. By contrast, very few respondents indeed expressed a clear resolve not to evacuate the prefecture. For many or most people, making a decision either way means being caught in a dilemma whereby “not evacuating” = “being subjected to a wide range of discomfort involving radiation” and “evacuating” = “being separated from the family” and facing “increased burdens on household expenses.”

3.2 Taking organized short trips away

Opinions on taking organized short trips away are divided into the groupings (i) wants short-trip programs expanded, (ii) wants to get information about taking organized short trips away, and (iii) satisfied with taking organized short trips away:

(i) Wants short-trip programs expanded

A number of opinions expressed a wish for comparatively low-cost short-trip programs. There were opinions, for example, on having the number of programs increased, widening the range of people eligible, the kinds of short trips an available, contract risks, unfair access and so on.

- “I’d like to see more short-trip services put in place. It is regrettable that we can’t get a place when they do the draws and stuff. There’s another me who’d feel just a bit easier if we could get out of the prefecture for a break.”
- “I’d like to see more support programs (mainly short trips away) for pre-school children.”
- “I’d love there to be some kind of short-trip plan – even just an extended holiday, where we could just go without worrying about anything and relax a little.”
- “Things like the toll-free highway scheme and the Fukushima Kids’ Project wound up last March, but I’d like to see them kept going, for the kids.”
- “I’d like us to get a change of air (take a short trip away), both for the kids and for me, but what with the gasoline costs and all, it’s a lot of burden.”

- “There are lots of short-trip projects, but there are rules on the numbers (5 kids and over etc.), so you can’t go just as a family. If they could cater to smaller-scale groups I think it would help out parents a lot.”
- “I’d like us to be able to access regular short trips away, but there’s less and less groups taking people, and the costs have become pretty steep for people like us.”
- “The thing that we have to try to do as parents from now on, so as not to be exposed more, is “getting short trips away.” It takes money. It’s very hard. I’d appreciate it so much if somehow you could give us support so that the children of Fukushima Prefecture could get help in some other prefectures with low radiation levels.”
- “Rather than in Fukushima Prefecture, I’d like to see them get together in some other prefecture where the radiation is low. And if we got financial support and so on it’d be easy for us to go. I’d also like there to be a place where we can get together and talk while taking a trip out of the prefecture.”
- “There’s not a single day that goes by that I don’t think about radiation. In the same way, I worry about the children’s health. The government should really pull out the stops and get behind the decontamination effort a lot more, and do things to help the kids get short trips away.”
- “I hear over in Belarus, they have a month-long mobile education program that includes convalescent rest for children. I heard that they do internal decontamination of the body. They should set up that kind of thing with the Fukushima kids, too.”
- “Please set up short to long-term trip programs at the school and class level, and at the family level for families with children who aren’t in employment yet. Also, right now the toll-free highway scheme is only for evacuees, but they should extend it to any family with children (registered as) living in the prefecture. That would make taking organized short trips outside the prefecture on weekends and so forth easier.”
- “Short-trip projects [...] Have people with work take part with their kids [...] That’s all very well, but I can’t get the time off, so I’ve had to give up on a lot of things. Housewives have the time to go, though. [...] I can’t help thinking it’s not fair.”
- “I applied for the Refresh Camp, but we’re always rejected. I want to give the kids a chance to take a short trip away but I can’t.”

(ii) Wants to get information about taking organized short trips away

There were opinions on people’s inability to access information on taking organized short trips away:

- “I’m dying to get away with the kids, even just for the summer vacation! But I don’t know how to even start looking for a project that can help us do that.”

- “I’ve started to calm down, little by little. We’d love to have the chance to get away for the summer and that. It’d be great if we could get some information [on short-trip programs].”

(iii) Satisfied with taking organized short trips away

There were opinions on the necessity of organized short trips away, after experiencing such excursions:

- “They do short trips away on the Fukushima Kids’ [Project] in the summer and winter vacations. I’d like them to keep it up, because we have nobody else to go to except for groups like them.”

(iv) The particular features of the issue

There are many opinions about taking organized short trips away. In the background was the issue of restrictions on outside play for children. In other words, many families take organized short trips as a substitute for playing outside. Short trips require outlays for transport and lodgings among other things, and family budgets are limited. There is thus huge demand for organized short-trip programs. Not enough programs are in place to meet this demand; if anything, their number is decreasing. This seems to be the reason behind the large number of calls for such programs to be expanded.

Also, in regard to information on organized short trips away, while there may be websites offering the relevant details, there are also families which cannot access this information because they are not connected to the internet or for other reasons. The alternative of distributing information on paper involves problems of costs and time lags, but there is a need to take new approaches in disseminating information.

3.3 Decontamination

Opinions on decontamination are divided into the groupings (i) satisfied to some extent with decontamination, (ii) not satisfied with the decontamination procedures carried out, (iii) wants decontamination to happen, and (iv) doubtful of the benefits of decontamination (regardless of whether or not it has taken place).

(i) Satisfied to some extent with decontamination

There were opinions that a sense of security through the decontamination process was obtained to some extent.

- “In our village of Otama, the village head and the Board of Education started decontamination early, so the kids can play outside.”
- “The decontamination is wrapping up, so now we’re able to go to the park and places. But I’m still not sure what we should do about the soil in the garden, and we’ve just left it as it is. I try not to think about it, but I’m insecure all the time.”

(ii) Not satisfied with the decontamination procedures carried out

There were opinions such as on dissatisfaction with the decontamination process. For example, there were opinions on sloppy procedures on decontamination methods, disposal methods after decontamination, and values of radiation after decontamination:

- “They went about the decontamination in such a haphazard way, I’ve lost faith in the government both nationally and locally. (They just did the gutters.) They didn’t touch the roof or the walls or the soil in the garden. They finished up in no time. I’m so mad about it.”
- “I saw on the news that the city just went through the motions when they were doing the decontamination. The levels didn’t change a bit before and after at our house either, if anything it rose in the kids’ room. I talked to a company as well about it, and I felt they just brushed me off, going “Well, it’s like that for everybody.” If they’re going to do decontamination, why can’t they do their job and do it right! If you’re just going to do it by halves and then end up with one problem after the next happening further on down the line, then you might just as well not bother doing it in the first place.”
- “They decontaminated the roads, but really just a little strip of ground along the sidewalk. They talk about decontamination but I haven’t got a clue what they are thinking of.”
- “Even for Fukushima City, the radiation was high in Onami, so they did the decontamination at an early stage. But the temporary shelter was only about a kilometer away. What kind of place could that have been for little kids [...] I still wonder.”
- “There’s a terminal waste treatment center right near us, and they’ve got machines and a pool for treating waste water. You can see the workers walking around in protective gear.”
- “I thought the levels would fall once they did the decontamination, and we were going to go back to Fukushima. But they did the decontamination and the levels didn’t go down, so we still can’t go back to Fukushima.”
- “I don’t understand the order they decontaminate places in. [...] Why are they putting off the parks and other places! I really don’t get it at all.”

(iii) Wants decontamination to happen

There were opinions on wanting for a more speedy decontamination. Many respondents called for prompt decontamination not just of homes but also of all other venues of everyday life, such as schools and kindergartens, and school routes etc.:

- “They’re just decontaminating public facilities like schools and kindergartens. Nothing’s happening with people’s gardens or the routes to school at all.”
- “If you were going to school, you had your school decontaminated right away.

But pre-school children spend a long time in their homes, and it's not fair that they can't get decontaminated down unless there was Sieverts to some extent."

- "You can get your own place decontaminated, but then there's no decontamination happening for next door or the river nearby. So the radiation levels go up the minute you step off your own property."
- "The decontamination isn't moving forward at all, and I'm very nervous as a parent of a small child. There are still lots of hotspots, and I really don't know if it's okay to let him play outside. I get nervous about things a lot."
- "Our kid fell down outside the other day, flat on her face. There was this big heap of jet black muck that hadn't been decontaminated. She was just plastered with mud, and it got in her eyes, nose, and mouth, everywhere. That meant she'd had a direct intake of cesium, I felt so down about it. It's so hard on me. They've decontaminated the parks and schools and what not, but nothing's been done for ordinary homes or streets, so you get exposed to radiation just even falling down a little. I end up blaming myself for letting her fall. We can't just go for a normal walk."
- "They ought to do the decontamination faster. The place where we live, they're going to get around to us in three years' time at the earliest I hear, given the order they're doing the decontamination in. There's only so much you can do for yourself when it comes to decontamination. Who would want to let a child out to play in that kind of environment?"
- "Our house is in a low radiation-level area, and as far as decontamination goes you see the parents pulling up the weeds and that's about the height of it. We were at about 0.3 microsieverts from the start, and it's the same 0.3 now. They ought to start decontaminating the low radiation-level areas sooner."
- "I want them to get on with the decontamination quickly. There are restrictions on neighborhood clean-ups of the roadside ditches and so forth (we're not allowed to), and I can't say the area looks very nice. Clean-ups depend on the area, too. People who want to get involved are very positive, but if it looks like an area where the radiation dose could be high, some people just don't feel like doing it. So only the safe-looking places get a proper cleaning. They ought to hire professionals to come in and give the place a proper good cleaning."
- "We can't let the kids play outside freely, and even though we built this garden they can't play there. We're all getting stressed out in our lives. If they could at least decontaminate the lawn area. It's all I hope for with all my heart. At the very earliest possible. Just to give us the minimum peace of mind to keep going every day."
- "Even if a place is decontaminated, the radiation levels gradually start going up again as time goes by. So I want them to do regular decontamination (especially places where small children play)."

- “I think decontamination shouldn’t just be left to the private sector. They should get large-scale organizations like the Self-Defense Forces in there and get the job finished quickly.”
- “There are some empty lots near us, but we can’t get in to do any decontamination (cutting the grass and stuff). Maybe it’s because if there’s grass and trees on a lot, they’re the private property of the owner. So the radiation levels are still high, and I can’t let the kids play outside. Can they please for god’s sake at least do something to get the levels down in the puddles in front of our house!! Whenever a puddle appears, it stays right above 1 μ Sv/h. I want to let the kids play in the mud, but I can’t. Even though kids love playing in puddles. [...] It just fills me with an anger that I cannot shake off.”
- “We don’t need money, we just want them to do decontamination. Things start from decontamination. If we only have decontamination, children can play outside, and parents will have lower levels of stress to deal with, I’m sure.”
- “In the Omori area of Fukushima City where we live, there are differences in the radiation doses depending on the place. If there’s a house with a three-year-old child and the family is getting high readings for radiation levels, I’d like to see city workers come and check it properly, and if it really is high, they should have the area decontaminated. The fact is, places where the levels aren’t all that high are judged as relatively high areas and the process are carried out.”
- “I believe in what the government is doing, so right now we’re waiting for our house to be decontaminated. All the same, we don’t know where to put our stuff in the meantime, and as a parent of young children, I just think “Help! Do something quick.” People are arguing constantly at the Residents’ Association. For a place like this, I just want them to do something so that we can all live together as good neighbors. The Residents’ Association next door has already finished decontamination, so I’m very much losing my patience. Tominari Kindergarten and Tominari Elementary School have no new pupils entering for the next school year, so everyone in the area is so depressed and blue. The population just continues to decrease.”
- “We decided to come back to Fukushima for my eldest daughter to start elementary school, but they said at the orientation meeting for Moriai Elementary that part of the school grounds were over 12 μ Sv/h. They haven’t got the budget to do decontamination. I was really freaked out to hear that. It makes no sense to think that there are still such areas inside a public elementary school. And I just don’t want them to conclude that they have no budget.”

(iv) Doubtful of the benefits of decontamination (regardless of whether or not it has taken place)

There were opinions on doubts toward the effectiveness of decontamination:

- “The area around us is mountainous and forested, so what good would it do? There’s no point of temporarily decontaminating such kind of place. It all costs a lot of money, and if they don’t come up with a slightly more realistic approach, they’re just going to end up doing decontamination over and over again.”
- “Even if they decontaminate a place, I don’t think the radiation levels will go down all that much. I’d like people to think of a safer way to survive in this kind of situation. I’d like local government to look at things from this perspective.”
- “When talking about decontamination work, indeed radiation levels has gone down on the surface. But then, it just flows to the next area and in the end I think nothing is changing at all.”
- “Recently, the city administration has been talking about decontamination (residential areas), but I end up thinking that we’ll never get back the safe and secure lives we used to have before the Earthquake, whatever decontamination they do.”
- “Decontamination? It’s all just for show. Does it really do any good, I wonder?”

(v) The particular features of the issue

Most residents of Fukushima call for prompt and appropriate decontamination. This is because decontamination is the sole means for them, bar choosing evacuation, to free their daily living environment from radiation. However, the decontamination process is not moving forward (ii). Discontent is expressed about the decontamination that has been done (iii). There are doubts about the effectiveness of decontamination in the first place (iv). There are few opinions that expressed satisfaction on decontamination (i). Therefore, it follows that in most cases, decontamination has failed as an effective method to ameliorate discomfort which local residents are confronting.

4 Diet

4.1 Food

Opinions on food are divided into the groupings (i) avoids locally produced foodstuffs and tap water where possible, (ii) uses or are forced to use locally produced foodstuffs and tap water, and (iii) not satisfied with school (nursery) lunches.”

(i) Avoids locally produced foodstuffs and tap water where possible

There were opinions on goods such as foodstuffs and mineral water produced in other prefectures being purchased even at high prices. The reasons given for this were because of radiation and children’s health. It was also pointed out that household expenses faced increasing strains.

- “In terms of our diet, even if people say [local food] is safe, if possible I always

buy goods from other prefectures, even if they're more expensive, and always (drinking) water. We're a single-parent family, so we don't have much money and it's a big problem for us. But thinking about my child's health, there just no way around it. So of course I worry about our future. I just don't want to regret myself if my child gets sick. I'd be like, why didn't I do this, why didn't I do that? [...]"

- "I generally buy food that are procured outside Fukushima Prefecture as far as possible, so it costs a lot. Before the nuclear power [accident], I used to think that Fukushima's produce was the best in Japan."
- "We buy our drinking water. The tap water is actually okay, apparently. But then I wonder, can you really believe that? And I get nervous about it. Again, the food's Okay, I'm told – but still I choose things from outside the prefecture. I feel terrible about turning down the vegetables my father-in-law grows, but I do. I know he means well, and I feel dreadful about it. I have such mixed feelings."
- "So they scanned the locally grown vegetables and they tell us that means they're okay but REALLY!?! That the average levels are low and stuff. Well they're really high for my mum's lawn. So where does that leave the farmer's fields! Are you substituting [non-local for local vegetables]? Same for rice. [...] Well, I want to eat local but it's just not possible."
- "All the water, rice and vegetables we use come from outside the prefecture. It's a strain on the household expenses compared to before. I'm sure that the increased stress I feel as a mother is being passed on to my children in some form as a psychological burden on them."
- "Even if delicious vegetables and rice from Fukushima are in stock, I feel too uneasy to buy them, so I take the trouble to buy everything I cook from outside the prefecture."
- "Before the Earthquake we used to eat the vegetables and rice that grandma grew, but after the nuclear accident I say "No thanks" even to gran, and I don't take anything from her. I feel I'm being a bit mean to her, and above all, since we're buying expensive vegetables and rice from outside the prefecture, it's not good for us moneywise. Granny's eighty-four and she enjoys growing vegetables. I feel so sorry for her that she's lost her pastime now. I'm worried that she'll start going senile."
- "Before the accident we used to grow all our own vegetables and stuff at home, but since it happened we've been buying everything at the co-op and places. I get really worried about the idea of giving the kids tomatoes and cucumbers grown at my husband's place. They're all right for adults, but I'm really not so sure about the kids. But I just can't bring myself to say anything. I don't know what to do about it. We buy our drinking water as well, and we use a pressurized hose to clean and clean around the outside of the house. We're spending more

than we used to.”

- “Since the nuclear accident, we’ve been taking the children outside the prefecture to play as much as possible, and buying things from outside the prefecture to give them to eat. We don’t use the tap water at all. So that’s what we do. I wonder when is life ever going to get back to normal?”
- “It’s been almost two years since the accident and the nuclear accident is still costing us money (buying food they say is good for getting rid of radiation, getting hold of rice and vegetables from outside the prefecture, driving the kids to parks and places an hour there and back, paying for the gas, and we had to keep two places going for a while because we were evacuated). However much compensation we get (about 800,000 yen for the entire family), we won’t get back the savings we had before the Earthquake, and we’ll still be in the red.”

(ii) Use and are forced to use locally produced foodstuffs and tap water

Among the opinions about using locally grown foodstuffs and local tap water, there were opinions pointing out the discomfort of health along with opinions on the dependence of local sources due to factors such as the situation of food distribution and their household expenses.

- “On TV, I was watching about Chernobyl, and they had problems that are only coming to light now. I think that’s happening here too, to lots of people eating stuff they got locally. So as much as I can I’d like to buy things from up north or from prefectures further away than Tokyo. But generally the shops only sell stuff from nearby prefectures, and that’s another worry.”
- “I’m from a farming family, and I worry tremendously about anything to do with food – I tend to get neurotic. Even if they say the [radiation] levels are “okay,” I’m the kind of person who can never really trust that – it makes me so nervous. There’s nobody around me who feels nervous like me – then I start thinking maybe it’s just me, and I start worrying that people are going to think I’m an idiot for worrying about nothing and I think I’m going to go crazy. So I sometimes just try to take my mind off it and think about something else.”
- “I measure the vegetables and rice we grow for ourselves with a Geiger counter, and we eat them because the levels are safe. We still haven’t done decontamination. It’s not like I measure all the vegetables. There are some things like leaf vegetables that we don’t grow much of, and things that we have less than a kilo of, because you need that much to do the measurement. We can’t afford to buy everything we eat, so it can’t be helped, I think. We give the same food to the small kids to eat. I worry that they might end up getting health problems when they grow up.”
- “If it’s grown in Fukushima, they say that all the stuff they sell at the

supermarkets and places in Fukushima is tested before it goes on the shelves. Not only is it safe, but actually the vegetables from the other prefectures around can have higher levels [...] I've heard. I choose vegetables that have been properly checked, but still..."

- "They can tell us all they like about how they'll restore the land we live on (house and garden) and the environment around where we live. And I sometimes imagine that kind of future, even though I know that we're never going to get it back, ever. However much they decontaminate the dirtied land, it's not like we're going to get it all back. So it looks like we're going to be checking the radiation levels on whatever we grow in the garden, and eating that. And what not."

(iii) Not satisfied with school (nursery) lunches

There were opinions on dissatisfaction with the local school lunches. The reason was that these meals were made with local foodstuffs and tap water:

- "They decided to use Fukushima Prefecture rice for school lunches, even though we're doing everything we possibly can at home to steer clear of exposing the kids [to radiation] – eating vegetables and meat from outside the prefecture, buying mineral water. But no matter how hard we try, as long as we're living in Fukushima Prefecture, we can't stop the kids from getting exposed."
- "I'm really worried about food (especially school lunches). I'd like to see this whole area drop the idea of "grow local, buy local."
- "I absolutely want them to stop using locally grown stuff in the school lunches. However much you check food, if it's been grown in soil that hasn't been decontaminated there's no way you can put it into your own mouth and feel good about it. It's children that are going to eat it, so they ought to make it safer."
- "Is it really okay health wise? Is the food safe? At the very least they should use food from outside the prefecture for things like school lunches, to avoid them taking in radiation. Because we're living here. [...] If you don't want the children to suffer further harm, it's not enough [to give them food with] low [radiation] levels. The level has to be zero."
- "I just can't believe how they can use local vegetables and rice in school lunches even if it is under the danger level or if it has not been detected. Is there a level of radiation where one can say it's okay? We're getting exposed to radiation wherever we go, just by being here. We'll have to keep on getting exposed for decades as long as we're here. At home, we choose food from far outside the prefecture to eat."

(iv) The particular features of the issue

Given the discomfort of potential internal exposure to radiation through contaminated food and drink, the respondents are avoiding local foodstuffs and tap water insofar as they can. As a result, they face increased strains on their household expenses. There are opinions that express doubts about the safety of foodstuffs from other prefectures, also. The same discomfort also gave rise to opinions that oppose the use of local foodstuffs and tap water in the prefecture's school lunches. The majority of opinions on food are along these lines, and numerous. The discomfort of potential internal exposure to radiation through the consumption of local foodstuffs and tap water is a fear both strongly and widely felt, including by those who engage in such consumption for lack of alternatives.

One reason for this is mistrust of information. For example: "Even if they say the [radiation] levels are "okay," I'm the kind of person who can never really trust that – it makes me so nervous." It follows that the stressor of potential internal exposure to radiation through consumption of food etc. has two causes, 1) the presence of radiation and 2) mistrust of information. Thus, in order to resolve the discomfort of potential internal exposure to radiation through consumption of food etc., it is not enough to simply maintain the safety of these foodstuffs and tap water; they must be distributed in such a way that the information about their provenance and so forth is transparent. By this means the stressor can be resolved, and the associated burdens on household expenses relieved. But achieving this is difficult and resolution is yet to come.

4.2 Laundry

There were opinions on not drying laundry outside. The reason for this was fear of radiation impact:

- "The gate-ball court in front of our house is a hotspot, so I can't hang the washing outside. Of course I can't air the futons either. I want them to make it like it was before, when I could hang things outside when the weather was nice."
- "Since the nuclear accident [...] I can't open up the windows every day like I used to. I just wipe down the place with water and a cloth, dry the laundry inside, and take the futons to the laundromat and put them in the drier. [...] I feel like I'm living every day hemmed in like this. It's not too bad now, but still, I'm stressed and worried. I've been called the nervous type. To be honest, I'm physically and mentally drained."
- "What comes to mind for me every day is how I'd like to be able to hang the clothes and futons outside, open up the doors and windows without a care to air out the place, take our son down to the park to play together (in the sandbox) on holidays. I want to get our old lifestyle back. I want to go back to before the day it happened (March 11 [2011]), and live then, and give him back the life he had

then.”

A particular feature of this issue is the stressor of having radioactive particles infiltrate the home when laundry hung outside to dry is taken back inside the home. Given that the radiation is difficult to disperse and clear, the only option left is drying laundry inside or taking it to the laundromat. Drying laundry inside, accompanied as it is by moldy smells and stubbornly damp garments, is a constant source of everyday stress. With some respondents also recording steep rises in their air-conditioning costs, this issue also involves increased strains on family finances for some.

5 Household Expenses

5.1 Income

There were opinions on income decreasing due to factors such as unemployment. Some pointed out the nuclear accident, while others were less clear:

- “My husband lost his job because of the nuclear accident, and he was unemployed for a while. The kids were delighted to have their dad around all the time, but at the same time we were having to spend more than we had before on this and that, and some sharp comments about money got made (by me, that is). I took it out on the kids sometimes, too.”
- “Money’s been tight ever since the nuclear power [accident]. It’s not just hard for me – child-raising’s hard [for anyone] when you’re unemployed. They really ought to do something.”
- “I haven’t found a real job since the Earthquake, and I just don’t know what to do. I have three kids in nursery school you see, and there’s no telling when they’re going to come home sick. Right now I’m getting by with some help from my parents and doing a bit of work as an office assistant, but there’s next to no money coming in. I don’t know how I’m supposed to manage when the kids start getting older.”
- “We haven’t gone anywhere these two years, since the nuclear power thing. We have small kids to take care of, so we worry every day. I managed to hang onto my job but my husband lost his (a year ago). The house (we’re renting it) is getting really rundown. I’m not sure how we’re going to get by.”

There were other opinions on losing their food self-sufficiency because their vegetable patches and rice paddies were no longer usable:

- “Before the accident we used to grow all our own vegetables and stuff at home, but since it happened we’ve been buying everything at the co-op and places.”

5.2 Spending

Opinions on spending are divided into the groupings 1) expenditures for evacuation and maintaining two residences, 2) expenditures in regard to radiation, 3) alternatives to playing outside, 4) expenditures on foodstuffs and water imported from other prefectures, 5) taxation and public-utility charges, and 6) insurance.

(i) Expenditures for evacuation and maintaining two residences

Some statements recorded respondents who had evacuated (moved) facing housing and furnishing expenses at their new location; in addition, single-parent families faced overall increases in their living expenses for the sake of maintaining two residences.

In addition to the statements given in 1 (1) (i) still under evacuation and 1 (1) (ii) evacuated but returned home above, there were others:

- “At any rate you need money to live in two places at once! Just getting there and back is crazy expensive, undoable [...].”

(ii) Expenditures in regard to radiation

Expenditures in regard to radiation include decontamination expenses, purchase of equipment such as Geiger counters, and gasoline for taking children to and from schools:

- “Our house is along the mountains, so we can’t live in peace until they do the decontamination in the mountains. They haven’t come around to decontaminate the houses in our area yet either, so we paid for it ourselves and got a company to do our house.”
- “Compensation hasn’t been properly done for all the things we have to buy for the radiation (purifiers, Geiger counters etc.).”
- “We’ve washed down the house that many times, and been taking the soil out of the fields and the garden. But nobody’s helping us to pay for it. We’re shelling out for gas to get the kids to school and back as well.”
- “We’re in the building trade for ourselves, so after the accident we got the house washed down with high-pressure equipment, and we replaced the soil in the garden out front and put a layer of concrete on it.”

(iii) Alternatives to playing outside

To make up for restrictions on their children playing outside, some respondents are taking organized short family trips away, sending their children to classes, or paying to make use of indoor play locations.

In addition to the statements given in 1 (2) (i) wants short-trip programs expanded, there were others:

- “I quit my old job so I could have the kids play outside on the weekends to their

hearts' content, and I found a job where you get Saturdays off [as well as Sundays]. I take them outside the prefecture as much as I can, but it costs an awful lot to do that every week, so I'm trying to cut down on our daily spending."

- "Our daughter still can't play outside even now, so we're sending her to swimming lessons twice every week to help with her stress. That's where we're at."
- "There's a lot of radiation, so we do go to parks far away and to parks in other prefectures, but the gas costs so much that they only get to play outside once a month or so."

(iv) Expenditures on foodstuffs and water imported from other prefectures

Purchasing foodstuffs and water from other prefectures has meant steep rises in family food budgets (see 2 (1) Food, above).

(v) Taxation and public-utility charges

There are opinions on the allocation of taxation and public-utility charges after the accident:

- "The people in [totally abandoned] areas like Futaba and Okuma – they were the ones who made their living off of nuclear power, so why should they get any more help! Why are you asking us our opinions about living in Fukushima Prefecture, when we got nothing? How about they stop charging us for medical bills and taxes?"
- "I imagine people from other prefectures come over here thinking that anyplace polluted should sell for next to nothing. I'm thinking about the land I'm trying to sell that nobody will take off my hands. And yet, the residential tax and the prefectural tax are going up 10,000 yen a month in the last half a year. And they only put down the property tax 15%. They should thank us for just living here!! That's how I feel, though I don't say so."
- "So they raise the taxes to help Tohoku recover from the earthquake, fine – but why do we have to pay the same taxes here in Tohoku as well? It makes no sense. There's other expenses involved on top of that. The years go by and let's say the next disaster comes along – what are they going to do? Raise the taxes again? I'm not so happy with the government."

(vi) Insurance

Among other points made about this area, there were opinions on enrolling to cancer insurance, and others asking for better insurance coverage for counseling. For

example:

- “You know, they should of course be giving support on the health front, and I think the most important thing there is psychological and mental care. Public health insurance doesn’t cover counseling, and that makes it really expensive, so I think there’s a need for more support there. The child psychology aspect is important of course, but then if parents end up unstable they can’t give their child the proper care they need, so there’s a greater need for some kind of place where those kinds of anxieties can be sorted out more, too.”
- “I’m totally stressed out and worried, so I’m thinking about enrolling in [private] insurance (cancer, for the kids). I’m trying to get rid of the grass and the soil in the garden. I’m just sitting here holding my head.”
- “I’m worried about the radiation impact on the children, so I’m thinking about enrolling in cancer insurance for them.”

(3) The particular features of the issues of family finances overall

In order to cope with the nuclear accident, the survey respondents are engaged a broad variety of outlays. These include, for example, outlays on evacuation (moving) and taking organized short trips away, and outlays on buying [non-Fukushima] foods and water in order to avoid potential internal exposure to radiation. In the background are discomfort involving trust in the information they are being given. Also, we can see from the survey respondents’ free comments that increased strains on household expenses are a cause-and-effect outcome of coping behaviors against radiation. Also, most of the opinions given about increased strains on household expenses are, at one and the same time, calls for more adequate compensation and other forms of recompense. “Is there no compensation to cover the actual harm we’ve suffered?” These kinds of discomfort increase the economic burdens and generate credit uncertainty on the government and TEPCO. In addition to these, the respondents face concerns on household expenses due to increase in consumption tax and enrollment on cancer insurance. There is every possibility that such economic discomfort will continue to increase in the future.

6 Child-raising

6.1 Play

Opinions on children’s play are divided into the groupings 1) children allowed to play outside, 2) children’s outside play limited, and 3) venues for playing inside. Of these, opinions on children’s outside play being limited were most numerous, followed by venues for playing inside; statements on children being allowed to play outside were least numerous.

(i) Children allowed to play outside

While most statements on children playing outside were negative or half-hearted, there were statements recording children being allowed to play outside. However, at the same time, some statements also discussed health stressors involved with allowing outside play:

- “Decontamination has been making headway at schools and kindergartens, and they have [radiation levels] much lower than around our house, low enough to let me allow the kids to play outside there [but not around the house]. We just bought them new bikes too, but that’s not really working out for them. [...]”
- “I think playing outside is an important experience for small children, so I take them for walks and things as much as I can. I think they ought to change the sand in the sand area (at the park).”
- “They have a sign up at the park saying that they’re doing decontamination, so I think it’s okay to let our children play there, and I told them so. Sometimes, though, I think to myself “What if they’re cutting corners on the decontamination? [...] And the blood just freezes in my veins.”
- “I came back to Fukushima in the spring to have a baby, and we’re here now. Now that the kid is starting to get bigger, she’s begun playing outside – sitting down on the road, pulling grass from the roadside and all. I worry about her health of course, but then I worry if I try to stop her doing that, it’s going to impact her psychologically even more – so I pretend not to notice. Sometimes I hate myself for it.”
- “At first, I couldn’t let my children play outside, and I was worried about a lot of things. But now, little by little I’m letting the kids out to run about and enjoy themselves. I think they should set up indoor play areas here and there, just to help out the kids going forward, even if it’s just a bit.”
- “Well, we had our difficult moments, but now the kids play outside, running about the place and enjoying themselves. Even though we’re living in Fukushima, I don’t feel any misgivings anymore.”
- “Personally, I don’t feel there’s any particular problem with letting the children play outside. But people are going to look at me sideways if I show no concern whatsoever, so I only let them play outside now and again.”
- “Recently I’ve started to let them play outdoors, but whenever they touch sand or fall over, I’m always worried, [...] is there any radiation sticking to them? I get stressed and annoyed about that. I end up scolding them more and more over nothing, and I’m worried that the children will get stressed out too.”
- “I worry when I think about the future – what’s going to happen to the children years from now because of the radiation? I’ve been letting them play outside freely this past six months, but I wonder if it’s really okay to let them. I’d like

them to set up places where the children of Fukushima can run around to their hearts' content."

(ii) Children's outside play limited

Most statements on children's outside play were negative or half-hearted. The reason was health concern about radiation. At the same time, some statements discussed the negative impact of not allowing children to play outside:

- "We still have to limit their play outside, even though it's been two years. We can't let the children experience nature. Isn't it unhealthy? They can't feel the wind or the air, or can't enjoy playing actively under the sunshine. I want to at least give children, who will shoulder the future, an environment where they can grow up safely and enjoyably."
- "My daughter was three when it happened – just the time kids want to play outside most. It's just right then, at that most important period, that the radiation gave us most problems. I worry about the impact on her later of not being able to play in the sand and play outside generally at such a formative period in her life. I got nervous too. I had such a hard time, only the parents of two to three-year-olds will understand what I went through."
- "Kids are very sensitive. Even though ours always used to play outside before the nuclear accident, after it happened they couldn't step out of the house for a month. I explained everything to them – everything including what they couldn't understand enough – and let them know I was sorry they couldn't get out. Our older one was always saying she wanted to play outdoors, but now she says to our younger one "It's dangerous outside, so come back in." I worried a lot about it, how they'd get stressed out about not being able to get out, and how that would affect their development of body and mind. After the accident, once things had started to calm down a bit, I wanted to make up for it. So, I take them out of the prefecture to play outside two or three times a month. It costs money, but seeing them playing puts us parents at ease as well, and the kids really enjoy it."
- "Our youngest is starting kindergarten this spring, but her environment will be completely different from our older ones'. It looks like she'll end up starting kindergarten without having previous experiences such as having friends and playing outside with them. I think it's going to have a bad effect on her physical strength, too. I intend to get her to do exercise as she grows, so I'm thinking about indoor sports. Right now, I really want the children to grow up healthy and strong."
- "People seem to have started getting a bit blasé about the radiation. I still worry about it, but as time goes by it gets harder and harder for me to tell other people

what's on my mind. In school or kindergarten, I hear people saying, well it's fine to let the kids play outside in places, where I want to limit the playing time for children. It's like other parents aren't worried a bit. So when my kid starts going to kindergarten in April, I can't very well say 'I don't know about the other children, but anyway could you keep our kid [...] outside for just a short time?' I think the local government has to keep taking appropriate measures."

- "Before the nuclear accident I used to go for walks every day with the children. We'd religiously go to the park and play. But after the accident, we stopped going for walks and to the park. One's seven and the other's four, and now they both just stay inside playing games. They can't play outside. They don't seem to want to. I'm sure it's because they haven't had the chance to get out or play outside ever since the accident. I worry about their physical inactivity. It saddens me that children have forgotten that "playing outside is fun," and that they have thought there's no place to play outside, with the radiation being so dangerous."
- "When they see snow, of course the kids want to go out and play in it, but it's not like I can let them go out without worrying about it. So I limit their play outside and in the snow. But it's so hard to explain why to the kids. They ask me 'Is it poisonous?' When these kids grow up, what's it going to be like in the future when they have kids of their own? It's heartrending."
- "We haven't started decontaminating the house yet, and I'm really getting stressed out. I want to let the kids outside to play to their heart's content, but I feel so uneasy that playing outside may have negative effects on their health. My husband was looking forward to playing soccer in the garden with the children. The lawn came up lovely, but he had to cut all the grass, saying "we have no choice". As I saw him doing so, it was a bit heartrending sight for me."
- "Our daughter couldn't play outside any more after the nuclear power [accident]. I told her there's germs out there so you can't play outside! (She was two at the time.) I got her to wear a mask as well as much as possible. I think it was tough on her mentally. Being indoors so much got on my nerves as well, and I sometimes took it out on my daughter. I was always regretting that. Right now, I can't let her out for very long, but bit by bit I'm letting her go out to play."
- "A short time after the nuclear accident, the radiation levels were four times normal even in places that had been decontaminated. (The level was 0.2 at the nursery school.) Even so, they did a survey asking if it was okay to let the children play outside and in the snow, and they got the go-ahead from most of the parents. I have my doubts about the situation."
- "They don't allow outside play yet at the kindergarten my kid is going to attend. My feeling is I'd like to see the kids get outside for even thirty minutes to run around, but that doesn't seem possible. So, I'd like to see Koriyama City government have some kind of uniform policy for all the city-run kindergartens."

When will they be able to play outside? I get the feeling that they're going to end up losing their sensitivity if they're always stuck inside all day. Let the city decide the time to play. That's what I want."

- "The decontamination isn't moving forward, so there's no playing outside. She still can't ride a bicycle, and I'd like her to be able to cycle without training wheels before she starts elementary school, so I'm getting her to practice. [...] I'm keeping her indoors mostly so as to guard her from the radiation, but I'm worried about her failing physique. (eg. when she plays rope-jumping, her lips turn purple and her breathing becomes disordered.) It's a real worry."
- "The nursery school that my son attends isn't officially registered. They use food from western Japan for the school lunches, and (once in a while) they go by bus to play outside somewhere where the radiation levels are low. Normally, they have play equipment and a big room to play in. He's going to start elementary in two years, and leave the nursery school. I'm worried about what's going to happen to him then."
- "When I was a kid I used to play outside for hours on end, but I can't give my own kids a rich natural environment to play in. People have been talking about lack of exercise being a problem for children. I feel that the trend is being accelerated."
- "The decontamination's been done at the parks near our house, but we can't get in until the grass has grown back, so there's no way the kids can play outside. We've got to take them to a play area where they have swings and rides. That's a burden on us. I tell the kids about places, 'There's radiation so you can't go there.' And I think the kids want to ask, 'Why not?' I worry about what all this is going to do to their development and their physique and so on. Their exercise levels are going down, apparently."
- "Not being able to play outside isn't normal, is it? [...] We need safe outdoor play areas. They've been giving priority to decontaminating children's facilities, and the levels have come down a good deal. But they're still high compared to other places outside the prefecture. I get down about things. I think to myself, will there ever be a day when kids can just get together and enjoy themselves gathering acorns and pinecones, and branches and leaves from all over? (I can't stop the children from wanting to play [outdoors], so I just have to let them go ahead and do it. → I am anxious about them, and also worry about what people will think of me. → It's a major stress for a parent. → So I don't let the kids play outside. → Stress and bad health for the children. This vicious cycle never ends.) Politicians can debate the pros and cons of nuclear power, but they never get to hear about these small everyday worries people have. I think there should be some kind of permanent assembly where mothers' insignificant opinions can all be pooled together to make a big impact, not just in the prefecture but

nationwide. If another three years goes by like this, they're just going to let everything slide like nothing ever happened. That's what scares me most."

- "It's stressful for parents with small children not to be able to let them play outside (stress for both parents and kids), and the children are getting weaker it seems. I think there should be more indoor play venues provided. I hope there'll be no effects on the children when they grow up, but nobody knows how things are going to turn out (for them physically and mentally). It's a major worry. I think it just stresses everybody out and worries us to go on living as if nothing happened."
- "I feel if I get too worried about everything it'll end up doing me more harm than good, so I'm not doing anything proactively about the radiation. But I'm not happy about letting the kids play in the local park (they haven't finished decontamination) and I don't let them play outside very much."
- "My kid's going to nursery school. He hardly got any chances to play outside the year after the accident and longer. But the teachers did a lot to make nursery school fun. Now, we don't really worry very much about the radiation in our everyday life."
- "Even when an earthquake occurs or when they watch a video of earthquakes over TV, no kids get nervous. But I feel so sorry that our kids don't much chance to play outside, even though they adore playing outside. So as much as we can, on holidays we take them to play at places where the radiation levels are low. But time and money are limited. I hope the decontamination goes quickly. I'm waiting for the day when we can go outside and play in the garden without a care in the world."
- "At the moment I'm working at a kindergarten. There are restrictions on how much outdoor play the children can do on any given day. I worry a great deal about the impact of this on them, in terms of both the physical and mental aspects. We're doing all we can to make up for it and we think of different ways to do that, but we're painfully aware that we can offer them no substitute for nature. I really want the children to get their old way of life back just as soon as possible."
- "After the nuclear accident, I put limits on the children's play outside without being aware of it myself. There are set times for play outside at schools and kindergartens, but they're for limited periods. Our daily lifestyles have changed completely from what they were before, and I think that children as well as adults are facing a certain degree of stress because of that."
- "When are we ever going to be able to live the same lives we used to before the Earthquake? [...] Taking a walk every day if we have time and going to play in the park. [...] I want to let the kids out to play in the open without having to think about it. Even at nursery school, even though they get 30 minutes' play

outside and they've done the decontamination, it just makes me so sad to think of them cooped up inside. However many indoor play venues they build, it doesn't feel the same as playing outside.

(iii) Venues for playing inside

Some statements recorded respondents' hopes and dissatisfactions in regard to venues for playing inside. Concerns included the number and location of facilities, the kinds of play available, prices, and standards of hygiene:

- “Having more inside play venues is a good idea, but for ball pits and places, the hygiene aspect is a really big concern for me. Fall and winter is a time when you get a lot of infections like norovirus and influenza going around. I'm very concerned, for example, if a baby licks a ball and it's just left there [in the ball pit] covered in drool. So it's all very well to build more of them, but I don't think it's enough to say that the children have a place to play, and that's all fine and dandy. I don't see any place at all that does thorough disinfection. They don't have enough parking spaces either.”
- “There are a number of places where small children can play indoors, but my oldest daughter is six and she says they're boring. So it's real hard for us to go there as a whole family, I think. They ought to build big places where kids can run around [indoors] (where senior children at elementary school can play, too.)”
- “Since the accident, we haven't had as many chances to let them play outside. At the city level, they've set up indoor spaces with play equipment. They ought to have them for each area in the city; it's OK that they are small.”
- “There aren't many indoor play spaces around Nihonmatsu City, and no pools either. I'm not worried about the radiation personally, and I'd love there to be some place for winter play as well.”
- “It's such a shame that we have fewer chances to play outside, but it's a really big help that Koriyama City [administration] set up the indoor play space Pep Kids Koriyama. Now I think, however, it is the play spaces only for the cold months.”
- “They should send out questionnaires and so on asking ‘How should Fukushima City go about creating indoor play venues?’ They're just setting up spaces with toys and play equipment as they think best themselves. In fact, children and parents have their own opinions and they should listen to us more. The prefecture's never even done a single survey. [...] The indoor play spaces are all aimed at babies. We need play spaces for two to five-year-olds to run around in. Not just somewhere they can rummage around in the sand – children want to run, you know. They don't need swings and slides. They just want to run as hard as

they can. Give the kids places to run.”

- “Rather than a place where people can meet up and talk, what Nihonmatsu City needs is to build a space where kids can play their hearts out. I heard that the indoor play facility at Adachigahara has a temperature of ‘minus 1□’ – so I don’t want to go. There are some other places if you go as far as Motomiya City, but driving there every day would be a real pain. Actually, if they deliberately didn’t build a place where people can meet up and talk but instead they set up a place where kids can play, then the parents would naturally get together there and talk, right? That’s what I think.”
- “In Fukushima right now, there are lots of places that are just for [pre-school] children. Elementary kids and so on can’t play at them. I think small kids have enough places to play. They need to set up facilities where elementary kids and up can play. (I know it’s hardly possible [...]) The kids have so much stress bottled up inside. I’d like to know how to resolve that.”
- “When I moved to Koriyama City, I was surprised to find that there was no children’s center. There are indoor [play venues] where small children can go, but there’s no place where elementary school [kids] can feel free to meet up together. Where are they supposed to play when the weather’s bad? [...] I used to live in Sendai City, where every school district had a hall, a library and a children’s center. It was so convenient for everybody. Since the nuclear accident, I’ve very often thought that we should at least have a children’s center. I really want them to set one up.”

(iv) The particular features of the issue

Among the opinions respondents had about children’s play, there was widespread discussion of the following kinds of stressors:

Allowing children to play outside: impairments to health by radiation
Not allowing children to play outside: adverse impacts on physical abilities and personality formation, stress for children and parents, etc.

Most of the survey respondents are forced to choose between one of these two kinds of distress. The cruel outcome is that either choice they make comes with its attendant stressors. Most of the respondents’ statements expressed their feelings of stress as parents, as they were caught between the interrelated blades of these interlocking scissors.

As a means to escape this dilemma, there was a strong degree of interest in venues for playing inside. Parents look to venues for playing inside as an alternative to playing outside and as a way of thus relieving their children’s stress. For example, statements expressing hope for indoor facilities as a venue for physical movement can be seen as

attempts to preserve [their children's] physical abilities from the adverse impacts assailing them. Thus, numerous different needs and hopes for the number and nature of such facilities were voiced, given that venues for playing inside play a role as an alternative to playing outside.

However, because there are some experiences that can only be achieved outside, some statements pointed out the limits of venues for playing inside. For example, "Playing outside is an important thing. There are grasses and trees and flowers, insects and birds – all sorts of interesting things. They set up indoor play spaces for us, but they're so crowded that you end up worrying about [the kids] catching something, rather than having a good time. The amount of toys is limited as well, and toys can't beat living, moving things." Statements like these point out the limitations of indoor play. Thinking about children's play from this point of view only serves to reinforce the truth that the stressors involved have yet to be resolved.

Moreover, many parents suffer anguish at the thought that they are making their children feel cooped up and confined. For example, "It's really eating me up that I can't let them play outside (play in the sand, go for walks etc.) at this, the most sensitive and formative period of their lives." Statements such as this are a direct expression of this kind of anguish.

6.2 Responses to radiation

Opinions on children's responses to radiation are divided into the groupings 1) check-ups for children and 2) accumulators ("glass badges").

(i) Check-ups for children

Concerns about check-ups for children included distrust of the examination per se, stressors involving the examination results, and hopes in regard to the examinations:

- "We have four children. The oldest is a girl, in first grade in high school. The next is a boy in first grade in junior high school. They both had their thyroids examined, and they found growths in both. [...] Their next examination is in two years, but I'm really wondering if it's okay to just leave things as they are. For example, let's say you had a breast cancer check for adults, and they found growths or something like that. I don't think you'd just leave it for two years."
- "For about a year after the nuclear accident, I knew so little about the harm caused by radiation that I didn't really think about it all that deeply. But when the children's thyroid echo results came back with A2 results, and we found out that they had cysts, I gradually started to get scared. And I took it out on my stupid, ignorant self. Why didn't we run away at the time? Why did I let the children outside that time? I think I'm going to carry this regret with me till the day that I die."

- “Our kids are still small, only four and two years old. I think I want to get them checked as they grow up right into adulthood, thyroid examinations and whole-body counts and that.”
- “I’d like to know about radiation doses and thyroid tests not just for Fukushima, but in places like Tokyo and Osaka, and compare them with Fukushima to see how different they are. They should tell us.”
- “The other day we got our oldest son’s thyroid results back at A2. He was diagnosed with growths but it’s okay, they said. Still, as a parent I think it’s anything but okay. I wanted another examination, but I was told they basically don’t do it, and you have to pay expensive medical fees out of your own pocket. The rumor is that all the hospitals are in it together. What I want people to know is that we just don’t know who or what to believe.”
- “They did thyroid examinations for the nuclear accident. The thing is, I’d like them to do slightly more thorough checks, regular ones, and for other things too. I get so stressed thinking what’s going to befall the children however many years from now. If they develop something then, how is the government going to take care of them and all? I get the feeling that there’s less and less information to be had about nuclear power. I just want the kids to be well, and be able to bring them up healthy.”
- “We got the results for the examination on potential internal exposure to radiation, and they said, it’s okay now, and if there’s anything strange, even if the results look bad, there’s no problem. What was the whole point of doing the check? I took time off work to go, and even if the results show up at whatever numbers, they say there’s no problem right now – all right then, what’s the point in doing it? I asked them things but they didn’t tell me what I wanted to know, just mumbled this and that. They ought to pay attention to what we really want. They needn’t bother just going through the motions.”
- “We’ve just started getting whole-body count checks and thyroid examinations. The response is too slow. Maybe the government is leaving it up to the local authorities too much.”
- “[I want to see] continuous tests on internal exposure and thyroid examinations, and ongoing reporting of the results of all tests to the public. In particular, they ought to set up websites you can check any time whenever you want to find something out, and databases by area.”
- “I want them to carry out regular children’s health exams. Thyroid examinations and so on. I think we need compensation if they find any irregularities or anything”
- “My oldest and second daughters in elementary school were tested at A2 in their thyroid examination, so I’m a bit worried. I’d like them to examine children in other prefectures so we can compare them with Fukushima children.”

- “In their thyroid examinations, my oldest son and second daughter were given A2 (growths of 20 mm or under, no need for re-examination). My second daughter started getting bald spots on her head from around last October, and I found a white hair on my youngest daughter [...] so the impact of the nuclear power [accident] keeps giving us stress every day.”
- “I really want them to do earlier health exams (thyroid examinations, whole-body counts) on evacuees (children) outside the prefecture.”
- “All of our three kids got good results in their whole-body count examinations, so that’s a relief. But in their thyroid examinations, the older two (14 and 8) got an A2 result. We got a letter saying that this often happens during kids’ growth period, but it’s been quite a shock. I was already just starting to get a bit psychologically depressed, so this really got me down as a mother tremendously. After the accident we couldn’t agree as a family what to do, so we didn’t evacuate or move anywhere. Is that why things have turned out like this, I wonder? After the results, there’s going to be a re-examination in two years, but when you think about how fast the children are growing, you have to wonder if that’s really all right. I want to get out of here right now, but then there’s our jobs, their schools, the money, the house, our parents – I’m at my wits’ end. Anyway, I don’t know who to go and talk to about the A2 results. I just fret constantly. I’m kind of calming down, simply because I’ve half given up on the whole situation.”
- “I was pregnant when the Earthquake happened, and I worry about whether I should get a thyroid examination for the child I was carrying. (The checks now only cover children born before the Earthquake happened.)”
- “After the nuclear accident, I’ve had to take a lot more pointless (paid) days off work. For example, the kids needed examinations for their thyroids and potential internal exposure to radiation and so on. So I’ve had to take them to a lot of checks that you normally wouldn’t have to bother about, and all these days off (to be with the kids) means I’m running low on holidays. I have three children, and their examinations are all on different days. [...]”
- “They ought to have a system where people can get thyroid examinations and whole-body count examinations anytime. And you should be able to get the results on the spot, and be able to get them explained to you and talk over them with specialists. I imagine I could have a chat with the other moms there while I’m waiting, and the whole thing ought to be free.”
- “I’m burning with anger at the government and the local government, that won’t give you a second examination even if they find growths in your thyroid. Don’t do anything until your next examination in two years’ time, they tell you. I don’t know if I should just swallow that and think it’s all right. I don’t know what to do with this anger I feel. [...]”

- “The city does the exposure checks and the thyroid examinations, and then there’s the prefectural health survey and what not. But I don’t know a single person who believes the results that they’re giving us. All I believe is that I got exposed when the nuclear accident happened.”
- “Every locality is doing thyroid examinations and stuff, but that won’t change the uneasiness we feel all the time, I think. If there was some easy way we could check our level every day at home, and some way we could often check how our thyroid glands are doing, I think that would go some way toward easing the tension we feel. I think everyone who has small kids has misgivings and fears, and I want them to be answered insofar as that’s possible.”

(ii) Accumulators (“Glass badges”)

Some respondents voiced dissatisfactions with their accumulators, and a desire to get different equipment:

- “It’s hard to always keep the glass badge on yourself. They should think about making it something more like a watch (bracelet, pouch). If you have it hanging around your neck, I don’t like the way that when you go to other prefectures – or out and about – people look at you like you’re begging them to pay attention to Fukushima. I’m sick of walking around with it.”
- “I honestly don’t know what’s safe and what’s not safe. I think it’s a parent’s responsibility to protect their children and bring them up, but there’s no precedent for what happened to us in the nuclear accident, so we just have to keep going as best we can I suppose. [...] We go around every day wearing the glass badges, and get thyroid examinations and whatever, but I end up feeling like we’ve turned the kids into guinea pigs or something. [...]”

(iii) The particular features of the issue

Overall, there were numerous expressions of distrust and further needs in regard to check-ups for children. It can be concluded that there are strong concerns about impairments to children’s health from radiation. We will explore further needs in regard to check-ups for children in our discussion of the particular features of the issue of social security; here, let us outline the particular features of respondents’ distrust of both examinations per se and their results.

In their statements, respondents in large numbers recorded stressors involving their mistrust both of examinations per se, and the results of such examinations. The reasons for this can be found both in the failure of those parties carrying out the examinations to adequately explain the process, and in the failure of the mothers involved to properly apprehend the accurate information they were being given about the examinations. This constitutes, we may say, one type of mistrust of information. The

upshot is wavering credence both in the examinations as such and in the results they yield; this wavering credence in turn ties in with stressors involving impairments to health. These stressors in their turn constitute stressors involving children's future health. Furthermore, these stressors are intractable, because they are of a nature such that the children subject to them will, on attaining adulthood, pass them on to the following generation. It follows that, in order to resolve the stressors discussed above, there is a need for long-term and ongoing initiatives to make sure that the examination process for each individual is accompanied by clear and sufficient explanation [on the part of those conducting it].

6.3 Childbirth

Opinions on childbirth are divided into the groupings (i) pregnancy and (ii) miscarriage.

(i) Pregnancy

Respondents stated that they were subject to the stressors involved in being pregnant and in spending their pregnancy in Fukushima:

- “Right now, I’m pregnant. I know a lot of friends and acquaintances who gave up on the idea of getting pregnant because of the nuclear accident. It makes me feel truly sad.”
- “I was living in Sendai when the Earthquake happened, and we came back to Fukushima in June 2011, after my husband got transferred. After we heard about the transfer, we were just about to move when I realized I was pregnant...I spent every day worrying about the effects of the radiation. Wouldn’t it be better to stay in Sendai for the sake of my child?”
- “I was pregnant when the Earthquake happened, so I was very worried indeed about our little children, along with the little one that was about to get born. But our circumstances meant we couldn’t evacuate to somewhere else, so I was certainly stressed. But the thing is, you can’t just keep on worrying all the time. If the mother’s uneasy, I think that makes the children even more uneasy. I don’t know what’s going to happen to us in the future, but I intend to keep living in this town and bring up my children here. There’s no point I worrying. Maybe I’m being over-optimistic, but I think that not worrying too much is better for you mentally and physically in the long run.”
- “I was pregnant when the Earthquake happened. Even though I was very worried, I stayed working at my job and living at our place. Given the circumstances, I can’t deny that I took more childcare leave so as to spend more time with the kids. Even though we’ve chosen to live in Fukushima, I can’t shake off my fears. Is it really okay to keep on living here? Will the children’s

future be okay? The only thing we can do is to keep going in the belief that we haven't made the wrong choice. Because there was no other way but for us to make this choice. [...] Even if we change our minds in the future, right now we're doing absolutely everything we can to stick with the decision we made then."

- "Even while I was pregnant, I didn't give too much thought to things like food (from inside the prefecture). But, at the back of my mind, I was always thinking 'We've been exposed to radiation ever since the Earthquake.' And I've been worried about it constantly all the time since!"

(ii) Miscarriage

There were some respondents who recorded how they will have to spend the rest of their lives with the pain of wondering if the radiation played a part in the miscarriage that they suffered:

- "I got pregnant after the nuclear accident (the Earthquake). It was a stillbirth. I can't tell anyone this, but just after the nuclear accident I didn't realize just how dangerous radiation was. We'd just moved in to a new house, and to make the surroundings nicer, we used to harvest trees in the woods and climb right up the hillocks to cut the grasses and branches. I did this for a few weeks with my husband and with our child, who was still just two at the time. God knows how much external exposure I got those days. [...] It's possible that maybe that's why I had a stillbirth. [...] I have to live with that possibility for the rest of my life. Not just the pain of having had a stillbirth, which I sometimes feel. But also the regret that wells up inside me at the same time."

(ii) The particular features of the issue

In regard to childbirth, respondents were subject both to the stressors involved in pregnancy and the stressors involved in being pregnant in Fukushima. The latter consists of the stressors of worrying about the adverse effects of radiation on unborn children. The effects were major; some respondents recorded hesitations about [going through with] childbirth. It is possible that these stemmed from stressors involving trust in information.

There were also statements discussing the psychological damage of being unable to dispel suspicions that radiation had played a role in the respondent's miscarriage (stillbirth). It is possible that these also stemmed from stressors involving trust in information.

(4) Other stressors involved in child-raising

The stressors involved in child-raising cover a wide and varied range:

- “You know, I want people to understand what it’s like, raising a child while still trying to cope with all this stress and fear. It’ll never go away, either.”
- “All parents living in Fukushima and raising kids here are facing a lot of worries and uneasiness about the nuclear accident. That’s a fact. But at this point, people get annoyed whenever you try to bring up the subject of nuclear power or radiation. You can’t really say what’s on your mind in this situation.”
- “My child-raising life ended up stressful after the nuclear accident. I don’t have a lot of money but I’ve lived here all my life. However, [if I stay here] I worry that I’m going to put my child through more than she’s ever had to deal with before, both physically and mentally.”
- “If parents feel afraid, the children get stressed, so I just want to go on positively and keep raising my kids.”
- “I’m so fearful. Raising kids when you have no idea of how things are going to turn out – God knows how much the children are going to be affected in the future.”
- “Ever since the nuclear accident, I’ve been going more to the child-raising support center. I can’t let the kids play outside, so I take them to the center to play. At the same time, I get a chance to chat with other moms in the same situation as me. I find that helps me relax. So I go there more.”
- “It was me who decided to spend my life here in Fukushima, but really you know, there are times when I wonder if I made the right decision. Would it not have been better to move outside the prefecture? I hate myself for thinking so, but I find that I can calm down by spending time with other people raising kids in Fukushima in the same circumstances as me. Going outside the prefecture [for short trips] costs money, but we just took a little excursion recently.”
- “We don’t measure the radiation levels at our house any more. (We used to at the old house we tore down.) The reason we don’t is that it doesn’t make any practical difference if you follow the levels or not. What good is it knowing the levels if you have to keep on living here anyway? All you get is worry. (We’re still going to try to keep the kids indoors as much as possible, anyway.)”
- “After the nuclear accident, I evacuated with the kids to Yamagata [Prefecture] for a while. Our family was split up, and I was responsible alone for three children, and about to have my fourth. I think it was really tough on the kids, too. There was no-one around I could ask for help, so I was stressed out every day.”
- “I think pretty much everything ended up changing for us when you compare before and after the Earthquake – our way of thinking, dealing with the kids. Especially about the children (child-raising), when I think about all the things

we aren't able to do any longer, I feel so frustrated and low. Even now, every day. I'm worried about the kids' health in the future, too. I'm stressed out by having to choose my kids' vegetables and food, water and places to play every day. But I can't show them how uneasy I feel, so I try to somehow keep my cool and just keep going and try to cheer them up. There are nights I can't sleep I'm so mentally exhausted doing this over and over again. But! There's nothing for us parents to do to take care of our kids but to suck it up, keep our eyes open, and do what we have to do consciously to make it possible for them to live here, you know? I think if we had someplace where we could talk things over with people who have different values, it would be a really great support and a great help."

- "If children are our national treasure, the government ought to take the children of Fukushima's problems more seriously. The Earthquake happened when I was eight months pregnant with my third. I've never felt more stressed, having and raising my third. Raising three kids is physically and mentally draining. And then you have the stress of the radiation on top of that. [...] It's very, very hard on me."
- "When you talk about the difficulty of child-raising, you get people from the same area who think about things differently. Some people say that if you don't feel safe here you should go and live outside the prefecture, but then other people insist that they haven't got a care in the world. There's a kind of groupthink here that makes it hard to speak up and tell people what you're worried about. Is it really just a minority of people that are worried? I sometimes wonder. I want the government and the administration to step up quickly and do something to take care of our worries about decontamination and our children's health."
- "They did a survey on us, and I circled an answer saying that compared to just after [the Earthquake], on the whole I don't feel the same degree of stress and worry now (and in fact that is the case, in a sense). The thing is, if I didn't do that, if I didn't try to keep on thinking that, then I wouldn't be able to keep my resolve to go on living in this place. You can't raise children always worrying, and that [in itself] gets me down. So I sometimes check about the effects of low-level radiation on the net and on TV, and I watch interviews with people who've evacuated far away. That really gets me down seriously and stresses me out. I feel okay again the next day, but the way my feelings go up and down like that gives me an answer [to my concerns] [...] in the sense of looking at the overall picture."
- "We've evacuated outside the prefecture. All in all, we're still not happy with the idea of raising our child in Fukushima. The money's tight, but we decided to go so we wouldn't look back and regret things in the future. We plan to stay

outside the prefecture at least until he starts elementary. Then we'll decide what to do.”

- “They have events for ‘free discussion about your concerns on the nuclear accident and child-raising’ and such, but I think that the people who go to things like that are the ones who are desperately worried. For people like me – people who go, ‘Well, I’m worried, but at the same time I’m kind of okay maybe,’ [...] us folk who are kind of in between – it’s not at all easy to turn up at that kind of thing. I keep thinking things over and over and yet I still can’t break through all the contradictions in my head. Sometimes I’m like, ‘Well, what’s the point in worrying about things?’ and then at other times I say to myself, ‘Even thinking there’s no point in worrying is going to land us big trouble.’ And on it goes.”
- “People round here have never been very much into hanging out with their neighbors anyway, and I wish we could have the kind of community where people were more open with each other. [...] It’s not just about people getting together to discuss child-raising after the nuclear accident. I think it’d be easier to raise children here if we could develop better communication in the community all round.”
- “I truly love Fukushima, and it’s such a disappointment to me that I can’t raise my kids here without having to worry about them. Not a single day passes that I’m not aware of the radiation. It’s the same with my children’s health. I worry about them every single day.”
- “Sometimes I find it hard to tell my husband what’s really on my mind. We’ve been five years here in Fukushima. I haven’t put down roots or made any friends here, what with having no job and getting pregnant and raising our child. There’s nobody I can talk to about my concerns about the nuclear accident and the radiation.

(Even if there was, it might be kind of hard to do, given the atmosphere here in Fukushima right now. [...]) The accident’s a fact of life now, and there’s no turning back the clock. I understand that, and I know that there’s no point in turning things over and over in my mind. But still, I can’t stop constantly asking myself ‘Why...?’ and ‘How come...?’ I can’t move forward. [...] Then there was a thing on the news the other day about ‘Fukushima children tending to be overweight.’ That’s yet another stress for us mothers. We moms here in Fukushima are doing our very best to give our children exercise. I’m afraid what the media’s going to say from now, when the children here get their physical checks [at school] and the results come out [on TV etc.]. What more is there that we can do for our kids?”

7 Personal relationships

7.1 Husband and wife/parents and children

Husbands and wives, parents and children had different takes on their situation. Stress was generated as a result, in some cases leading to deteriorating relationships:

- “My husband and I had big arguments about leaving here. He said there was nothing for it but to go. But our daughter was just about to start elementary school, and I thought the change in environment would be too much for her. So I said we should stay put. Then he called me ‘unfit to be a mother.’ Even now, we still can’t see eye to eye about it. We’re not really getting along very well as a couple, and that’s ended up stressing out the kids, too.”
- “There’s nothing I can say to get my father-in-law and mother-in-law to understand the danger of nuclear power. So I can’t really talk to them about anything right now.”
- “We left our children with our parents and got them out of here. But they had their own ideas about nuclear power, and they were sick, so they came back with the kids fairly soon.”
- “Right after the nuclear accident, I had big problems because I didn’t agree with my husband and in-laws about the situation.”
- “My husband and my in-laws couldn’t agree if radiation was safe or not. They had a different take on things. That was really tough on me.”
- “I worry so much if we’re really okay or not. But the people here in Fukushima have gradually stopped worrying. So I end up worrying ‘Is it just me? Am I being paranoid?’ My husband has no intention of leaving this place, and he says he’ll divorce me if I go. So here I am still, unable to go anywhere.”

7.2 Neighbors and acquaintances

Neighbors, friends and acquaintances had different takes on their situation. Stress was generated as a result, in some cases leading to deteriorating relationships:

- “We all come from the same Fukushima Prefecture, but people can be really warm or cold to mothers depending on where they lived before, where they’re living now, and who they are. That goes for me, too.”
- “I think that an awful lot of mothers in Fukushima have been going through really rough times ever since the Earthquake. I’m one of them. Then again, there are moms who’ll tell you ‘There’s no point in looking back,’ and they hate even the mention of radiation. People over time have built up relationships as parents and children, friends and friends. But these disagreements are tearing us apart.”
- “People’s opinions on radiation are so all over the place; you end up just keeping your mouth shut if you’re worried about things. You can’t tell people what’s on your mind”
- “We moved into the area because my husband got transferred, and I have to say that we look at things a little differently from the people around here. As well as

that, everyone has their own opinion about the impact of the nuclear power accident (on children), so one can't really discuss things too deeply. And one mustn't impose one's own opinion on others, either. It's only been two years since we moved here, but I do feel that being in Fukushima = having a sense of belonging."

- "The other day some moms were getting together, and some of them were okay with things, and some of them were worried but still living here because they'd no other choice, and then some other moms were planning on moving out, and it all ended up in a massive row."
- "After the accident, every family had their own take on radiation and the harm it could do, so I've often been unsure what to say or do. Should I worry about this or not? Should I eat that or not? [...] Everybody has their own way of raising children, and then on top of that you have radiation. Even now I get nervous about bringing the subject up. I was especially reluctant to discuss it in the year following the accident. I don't think I'll ever shake off my misgivings."
- "Everyone thinks differently about the nuclear accident, and everyone has their own concerns. Still, after the accident, I'd see locals out there in the fields burning the stubble like they'd never heard of such a thing as radiation in their lives. [...] It'd make you sick to look at them."
- "As time has passed since the nuclear accident, I've come to feel more and more strongly that there are lots of ways of looking at anything, and that you can't satisfy everybody. The most important thing is being considerate and finding the middle ground if we can, and not pointing the finger at each other if that can't be done, but rather telling yourself that there's also the other person's way of looking at the problem. We have to try hard on that, I think. It really does take all types. I've had an awful lot of food for thought since the Earthquake."
- "You'll often hear people saying they've lost friends because of arguments about the nuclear accident. Happens all the time."
- "The hardest thing for me was when you'd get fallout between the kids when their moms took a different stance on something. (The kids would go up to their friends and ask, 'Why are you wearing a mask when you haven't got a cold?' and so on.) Community life certainly had its difficulties."

7.3 Unrelated other people

Some respondents recorded stressors involving discrimination and prejudice against people from Fukushima. Many statements expressed worry about the family's future marriage and job prospects being compromised:

- "Somebody from Tokyo or around there saw my husband's Fukushima license plate at work and went 'He's gonna give us radiation poisoning!!' I had such

- unpleasant feelings because of it that I still can't trust people from other prefectures. I hate them. [...]"
- "The other day it occurred to me that when my daughter gets old enough to marry, the boy's family might not want the wedding to go ahead because of the nuclear power [accident] and her being a Fukushima girl and all. Not that thinking about the problem is going to do much to solve it. [...]"
 - "I'm always looking at the kids and interrogating myself: 'Are we okay living as we are? What else should I be doing? What kind of future do they have? Will nobody want to marry them because of the radiation? Am I a responsible parent?' Round and round it goes."
 - "What I worry about with our children is, when the time comes for them to find jobs or go to college or get married, what kind of problems will they have? There's no big difference between living in Fukushima and living anywhere else [in Japan]. We just live a normal life here. Well, people might say that we've stopped caring about anything and thrown caution to the winds just because we live here. Still, I reckon if you worry too much you'll just get stressed out, and that'll do no good for body or mind. I hope both of our kids can find people to marry here in our city (lol)."
 - "Right now we're all putting a brave face on things, but when you think about twenty or thirty years' time from now, that's when the children [...] will want to get married. If their partners have no strong connections with Fukushima, they might worry about whatever children they're going to have, and the other parents might oppose the match, I imagine."
 - "I wanted to find out more about radiation, so I went online. There were loads of comments saying 'The children living in Fukushima are going to die young, or not be able to marry when they grow up, they'll be sterile.' That made me so mad. At the same time, I was filled with dread."
 - "The thing I'm most frightened of is the way that the rumors [about Fukushima people] take on a life of their own. Our health problems are bad enough, but it's the prejudice that really does mental damage."
 - "Every family gets the same amount of compensation, so when I'm out with our child, I can feel people looking at me and calculating, and thinking to themselves 'Oh, they're really raking in the cash.' They say so to my face sometimes. It was extremely unpleasant."

7.4 Other unrelated people who have different evacuation and compensation treatment

Some statements recorded the respondents' resentment towards suspected favoritism in the allocation of compensation and damages by bodies such as the government and

TEPCO, and their anger at the people allegedly reaping the benefits:

- “I kind of get the feeling that (by and large) people from Fukushima Prefecture are shouting at TEPCO too loudly – ‘we want reparations, we want compensation.’ There they are in Iwate Prefecture and Miyagi Prefecture, they didn’t get a penny of compensation, but they’re working to rebuild their areas with their own hands. To be honest, it makes my blood boil when you go past the pachinko parlors on a weekday and you see how there are more and more cars with license plates from [the coastal Fukushima city of] Iwaki. We don’t want any compensation. Compensate us for our children’s future!! That’s all.”
- “I think the people from the [coastal] evacuation areas [of Fukushima Prefecture] have a nice racket going, living off their compensation. There are [other] parts of Fukushima where the radiation levels are higher. I’m sorry for them of course that they can’t live in their homes any longer, but that doesn’t give them the right to hang out at amusement arcades and pachinko parlors all day. They ought to find themselves jobs. As a Fukushima person, I’m ashamed of them.”
- “Ever since the nuclear accident, we’ve always believed the government and the experts when they tell us that ‘The [radiation] levels aren’t high enough to affect your health.’ So we can’t help thinking that the people who moved out of the prefecture in voluntary evacuation are only taking care of themselves.”
- “I think that the people from the tsunami nuclear power [accident] evacuation areas are the lucky ones. They’re rolling in money, killing their time gambling at the pachinko parlors. But us, we’ve still got our houses so everything’s A-OK for us apparently. We don’t need any help. Even though we’re the same Fukushima people. I know [the people from the coastal areas] lost their homes, lost family, and nothing could be worse than that. But the difference in the way they get treated compared to us is a complete scandal in my opinion.”

(5) The particular features of the issue

The nuclear accident caused important changes in personal relationships. The causes were: 1) differences in people’s opinions about matters such as the nuclear accident and radiation, and 2) concerns about partiality in the allocation of compensation. Firstly, differences in opinion about matters such as the nuclear accident and radiation impacted personal relationships between people discussing and debating, for example, whether or not to adopt coping behaviors such as evacuation after the nuclear accident. In cases where differences in opinion with neighbors and acquaintances are acknowledged, it is generally possible to handle them by agreeing to suspend such discussions and debates. However, even in this case, respondents were faced with the stress of biting their tongues and suppressing their real feelings and fears.

In the case of husbands and wives/parents and children, by contrast, there were cases in which it was difficult to suspend such discussions and debates. For cohabiting husbands and wives in particular, discussion and debate are unavoidable. Relationships between couples were thus often liable to deteriorate or collapse under the stress of conflicting opinions about what best to do. Some respondents' statements indicated that such breakdowns went so far as to result in actual divorce. The process and outcomes of breakdowns in personal relationships produce major stresses, and in addition secondary effects are generated whereby economic stressors are amplified in certain [more vulnerable] households.

Secondly, the specter of contamination generated a stigma among what we may call the "unrelated other people" who were not subjected to exposure to radiation, and there are concerns that this process may well generate discrimination and prejudice [in the future]. That is to say, the mere fact of coming from Fukushima triggers stressors involving apprehensions of future difficulties in the areas of marriage, work and education. A considerably large number of statements discussed such concerns. The issue of how people are treated by others they do not know also has a bearing on the process of the formation of children's personalities, and because the objects of potential mistreatment in this regard are children, their parents, who wish for their children's future happiness, may be subjected to stressors involving their children's future in general, in the same way that they are subjected to stressors involving their children's future health.

In regard to concerns about partiality in the allocation of compensation, some respondent's statements recorded slighted feelings of animosity and contempt toward people they considered to have enjoyed unfair advantages over the respondents themselves in the allocation of compensation. While these feelings of resentment were harbored in individual hearts and minds, they would not have arisen if the nuclear accident had not happened, and so they can be seen as yet another adverse outcome of the overall catastrophe.

8 Information

8.1 Information-gathering

Opinions on information-gathering were divided into the groupings 1) mistrust of information and 2) waning interest.

(i) Mistrust of information

Statements on mistrust of information discussed matters such as the contradictions in the information being disseminated, and distrust of bodies such as the government and

TEPCO:

- “Sometimes the TV, newspapers and radio say ‘It’s all okay!’ and sometimes they say ‘Things have got to change!’ and I don’t know which to believe. Still, it’s our job as parents to take care of our children. I want them to tell us the truth.”
- “So many different people are coming out with so many different opinions about the nuclear accident and radiation; I have no idea who we’re supposed to believe.”
- “The government, TEPCO and the local authorities are all just putting on a show to make themselves look good. I don’t think they actually give a damn about us people here in Fukushima. On top of that, the Speed 1 system [for relaying information on radiation] broke down without leaving us any the wiser. When they did the decontamination wrong and put us all here in danger, how come nobody was asked to take the blame? I’ve stopped being able to trust people since the nuclear accident.”
- “However safe they say we are, the politicians have been spinning us lies since right after the nuclear power thing happened. There’s no way of knowing what’s true and what’s false any more. Some specialists say that the radiation is all right. Others say it isn’t.”
- “The things the experts say totally contradict each other. Listening to them, I have no way of knowing if we made the right decision when we moved outside the prefecture. But my honest opinion is that since they decided before the accident that the amount of exposure should be 1 milli [sievert], they really ought to have done their job and kept it at that.”
- “This was on TV the other day anyway, but the answer I want to hear isn’t ‘Everything’s fine, don’t worry.’ Rather, I want them to tell us about what happens in the worst-case scenario (that is, tell us clearly about the worst that could happen in terms of sicknesses and [radiation] impact). This is an accident that blows away all the data they ever had up till now, so you can’t expect even the experts to know what’s going on. So how can they come out and say that things are all right? [...] Why don’t they tell us the full story about Chernobyl – that the children exposed there developed other diseases at a higher rate than cancer? They ought to tell us that kind of information”
- “Even though the radiation levels in the place where I live are high, the government and TEPCO keep on telling us it’s okay. I’m ashamed I ever believed them. I still regret that we didn’t get out of here right after the accident. Even now I sometimes worry if we’re doing the right thing, and whether I made the right decision when I chose for us to stay.”
- “Certainly they’ve been doing decontamination and what not, but you have to wait too long for them to come around to do it, and I hear people wondering

what's the point at this stage. I don't know what numbers mean we're safe, and to be quite honest with you I don't know if the numbers they give us can be believed."

- "Wherever I go, all the stuff I hear about how things have changed before and after the Earthquake are just too complicated to understand! They talk in technical language that I can't catch the gist of. They have no idea how to explain things to people like me that don't know anything. I don't think they even realize that we're scared. I mean, the way they explain things is just too hard. What's okay, how much radiation was there flying about before, what's not okay, what should we do – medical checks and blah blah test results and that – I can't even catch the basics of what they're going on about!! Are they aware at all of regular folk like us? [...] Are they thinking about the children? [...] It really stresses me out."
- "I want them to stop going on about how we're safe, how everything is okay, how we should relax, even though they haven't got a shred of evidence to back themselves up. If it's dangerous, they should just tell us straight that it's dangerous. They should think up the best policy for protecting children and families, and get everyone around to chip in and play their part. When they cover things up and try to palm off half-truths on us, that's when we lose trust in them, and they can't get people on board."
- "There are almost no places in the world that have experienced radiation contamination and related health impacts like here. Then the experts weigh in with different opinions, so the more you try to find out the more confused you end up, don't you think? Of all the info out there, it's the stuff on the internet that's the least reliable, a lot of it anyway. I feel that there are lots of people out there who just believe what they want to believe and live inside their own bubble. It's a hard job no doubt, but I'd like to see them put together the right information and reliable information, and put it out there for the public, using the internet and other means."
- "I hear they found some irregularities in the thyroid glands of the children living in the vicinity of the nuclear power [plant]. They say it's got nothing to do with the accident, but I don't really believe that. We're going to see more and more of that kind of thing, and I think the headlines are going to end up saying it was 'Just like Chernobyl.' We didn't leave Fukushima, so that's another thing I'm going to have to face going into the future."

(ii) Waning interest

Interest in matters such as the nuclear accident and radiation is waning. The reasons given for this include desensitization due to the passage of time, and checks acting on

the relevant stressors (i.e., people deciding to forget things that are stressful to think about):

- “Two years have passed since the accident, and I have to say that none of my fears about the future have changed. Only the fear itself remains the same. And that being the case, I’d like if anything to forget about the accident. I just want to put it in the corner and leave it there.”
- “Nothing’s changing, but I worry about allowing myself to get used to this situation. Because if I do, I’ll end up calming down (getting a sense of security) – and suddenly there I’ll be. Every day I wonder what I should be doing.”
- “Right now we’re living in Fukushima City, and as time goes by one tends to forget about the radiation despite one’s best intentions. Sometimes you end up letting your guard down, and thinking things are all right as they are. I feel that having to think about things all the time has deprived me of the joy of child-raising to some extent. [...] But whatever the environment, the essentials of child-raising (what’s important for the children) never change. So now, I want to give our child the same lifestyle as we had before the Earthquake insofar as possible (because we were quite traumatized immediately after the Earthquake). [...] To be quite honest, I still feel uneasy. But I try not to take too tragic a view of things, and I feel that I’m now ready to make the best of our circumstances as they are.”
- “It’s a thing we must never forget about, and there are problems down the line that we will just have to face. It stresses me out when I remember things, when I start thinking about things, when I can’t see the way ahead. I get the feeling that recently we’ve all decided to stop thinking about things, basically.”
- “We’ve all been living under stress since the Earthquake, but gradually we’ve gotten used to our new lives. We don’t worry too much about the radiation, and we let the kids play outside. We don’t worry about food either – we eat plenty of things grown inside the prefecture.”
- “The time goes by, and now, to be quite frank with you, I’ve gotten numb to so many things. I’m also starting to forget about it, just very slightly. Because I know that no matter how much I turn things over in my mind, I’ll never come to a conclusion. I just hope that our kids will grow up healthy and suffer no harm in the future from the nuclear accident. [...] At the moment, I’m doing all I can anyway (food, water [...] etc.).

(iii) The particular features of the issue

Because behavioral choices are predicated on information, having access to reliable information is an important issue for the survey respondents. Given its importance for their children’s health, information on matters, such as the nuclear accident and

radiation attracted the highest levels of interest.

However, most of the survey respondents were subject to stressors involving mistrust of the information they were being given. The reasons included disparities in the various opinions given by specialists (contradictions in the informational content), and inability to trust bodies such as the government and TEPCO (distrust of the bodies providing information). Under these circumstances, resolving the issue of mistrust of information is no easy task. This issue is indeed deep-rooted.

8.2 Providing information

Some statements recorded respondents' desire that the public at large should be better informed of the plight of Fukushima:

- "I'd like to see people outside the prefecture better informed about what's going on here in Fukushima – how we always have to live with stress, how it's dangerous for us no matter where we live. I'd like us all [nationwide] to think things through and get over this together."
- "These days you look at the news, and there's so little coverage of Fukushima that you wonder if they've forgotten about the nuclear accident. You don't see what's really going on here. I can't shake off my misgivings about how things are going to turn out."
- "We are going to live right here in this place for the rest of our lives. That's who we are. Nothing's finished as far as we're concerned, and you can't tell us it is either. But I feel that Fukushima (the nuclear accident) is being forgotten."
- "We can't see the physical impact right now, but I really want people not to forget that we and our children have to live together with a fear we cannot see."
- "I know that it's been really tough for the people who left and the people who had to be evacuated, but I also want people [nationwide] to remember that we are still living here in Fukushima Prefecture, exposed to radiation every day and living lives of mental distress."

The particular feature of the issue in this case is the stressor involving concern that the plight of Fukushima will be forgotten. The majority of the survey respondents are subject to this stressor. One senses that the respondents' pleas that Fukushima not be forgotten are addressed to the people of Fukushima as much as to people living outside the prefecture.

9 Compensation and damages

9.1 Compensation

(i) Dissatisfaction with the discontinuation of compensation, and

compensation for children's damages in the future

The respondents recorded stressors involving dissatisfaction with TEPCO's discontinuation of compensation, and concerns that compensation for future impairments to their children's health might not be properly carried through:

- “The compensation we got last time from TEPCO was the final payment. The thing is, we have to go on dividing our lives between Fukushima Prefecture and our other place [rented for evacuation]. Even if they don't give us money, they should think up of a liveable environment for us.”
- “If anything should happen to the kids in the future, I want the government to make sure that they won't get told that there's no clear link with the accident or something and then lose their compensation and treatment.”
- “The compensation money came through far too late. Most of my savings are gone. [...] Living in Fukushima takes more money than it used to. I think we're going to need to keep on getting compensation until the kids have grown up – not much, but regular. And they should give us compensation for future expenses. And if our children develop any health problems, they absolutely have to get full treatment!! I want them to go about it properly and get things back to the way they were.”
- “I'm angry about TEPCO's handling of things. We washed down our house time and again, took out the soil from our fields and garden, and we didn't get a penny from anywhere to cover the costs. Taking the kids to school and back by car has driven up our gasoline budget, too. Every time I got together with other moms and the nuclear power problem came up, we couldn't see any light in the situation. Talking about it made us so sad and angry that it was exhausting for us, and now I feel we just avoid the topic. At the very least they ought to cover us for the half-life of cesium.”
- “I think people need to speak up more about the TEPCO compensation payments as well. We can't just allow ourselves to slip into complacency as time goes by, and I think we have to let people in other prefectures know that our sufferings are still ongoing! When you still have people wanting to do 'voluntary evacuation' or take short trips away, of course that = the pain of Fukushima hasn't gone away yet.”
- “Up to now, we'd been getting compensation, so we were able to take the kids outside the prefecture to play. But now the payments have stopped, I don't think we'll be able to keep on doing that like we used to.”
- “TEPCO's said that they're going to stop paying psychological compensation, but for parents with children, nothing about the situation we're in has finished. Children born after the accident and children yet to be born are among those affected, too.”

(ii) Dissatisfaction with the availability and scope of compensation

Some respondents expressed dissatisfaction at not having received compensation despite suffering actual harm, along with dissatisfaction at the scope of allocation of compensation:

- “The one thing I just can’t agree with is the compensation payments. We were living in the [western Fukushima] Aizu area, so we get half of what the people living in Koriyama get. Even though I think that’s better than nothing, [...] our address was in Tadami, so we spent a lot of time in Koriyama, so you’d think we’d get the same treatment. Even in Tadami, you get people with addresses in Nakadori [central Fukushima Prefecture] because their husbands have been transferred there or whatever, and they get the same treatment as people from Nakadori. I felt we were being discriminated against. I think they should have treated us all the same. And for the additional compensation, too. When the additional compensation came through, even though I was living in Koriyama by then, they said I wasn’t there when it [the Earthquake] happened, so I couldn’t get anything.”
- “Even though the radiation levels are basically high, my area wasn’t listed as an evacuation zone. It makes me sick that other families near us have filed as evacuation households, and they can get 100,000 to 300,000 yen a month per person in compensation. We can’t borrow money, and we’re getting the same compensation as people in low-radiation-level areas. I think it’s a damn disgrace.”
- “I sometimes can’t help being jealous of the evacuees, seeing how they’re very well taken care of on the compensation and support fronts. We’re not in a listed evacuation area, but our area has definitely been contaminated, so they ought to pay a bit more attention to people in our kind of situation.”
- “The people who evacuated are getting all sorts of care and support, but us people who wanted to evacuate but couldn’t in the end, for whatever reason, get nothing. Even though we’re the ones who have to suffer on every day, living with the worries we have about nuclear power.”
- “We’d been waiting too long for them to decontaminate our house and garden, so we paid out of our own pockets to get rid of the topsoil. We paid a lot of money for the decontamination, but there was no compensation to be had wherever we went. The TEPCO phone staff members are useless as well. It makes me bloody sick.”
- “People who were living in places like Minamisoma City and Haramachi, within the 30-kilometer [exclusion] zone (people just living normal lives) got very substantial compensation from TEPCO. But in Fukushima City the compensation (compensation amount) has been nothing in comparison, even though the radiation levels here are high. The difference is scandalous.”

- “Our family moved here in April, after the accident. (After that I stayed with the kids until September at my parents’.) So we can’t get any compensation from TEPCO. We’d already decided to move to Fukushima when the accident happened, and the new job was set up, so there was nothing for it but to come here. I think they shouldn’t limit the compensation to people who were living here “at the time.” They should cover people who came here later as well. But we’re going to get zero compensation for our future. Nothing. I feel like people are telling me ‘There’s no need for you to stay here in Fukushima.’ I feel like I’m being excluded.”

(iii) The particular features of the issue

“I’m facing a whole range of tangible and intangible harm, like increased strains on our family finances and psychological damage. These all stem from having to deal with the nuclear accident and the stress that goes with it, and I should be compensated for them. However, the compensation paid by TEPCO does not cover the full range of harm people have suffered. Are they not going to give us any more compensation?” The clamorous complaints respondents made about the discontinuation of compensation by TEPCO may be understood as expressions of stressors like those expressed above. These stressors include awareness that the respondents will have to face enhanced economic stressors in the absence of compensation to cover the increased strains on their family finances. As the economic stressors become more intense, not only does the scope of daily life contract; there are also concomitant adverse impacts on the life and health of the family. Many parents are also confronted with the anguish of not being able to offer their children a full range of lifestyle options.

The following has also been discussed as a more serious stress factor: “They haven’t even compensated us to cover the damage we’ve suffered already, so how can we expect them to compensate our children for any damage to their health that might happen in the future?” This stressor, for example, is expressed here also: “I worry that if anything happens to [our or our children’s] health in the future, they’re bound to feel that it’s not linked to the nuclear accident. They’re going to end up trying to fob us off with what little compensation money they’ve already handed out.” Such statements directly express such stressors. One can even read a sense of despair into them. This is a favorable set of circumstances for the parties obliged to provide compensation. One cannot but feel the seriousness of the situation when one thinks that these circumstances may well have been contrived by the obliged parties themselves.

9.2 Social security

(i) Children's health

In regard to impairments to their children's health, some statements recorded respondents' hopes and calls for the appropriate handling of prevention and early detection of problems, along with compensation and damages for them. Along with the statements given above in 4 (2) (i) check-ups for children, there were statements such as the following:

- "If anything should happen to the kids in the future, I want the government to make sure that they won't get told that there's no clear link with the accident or something and then lose their compensation and treatment."
- "Right now, even if they have a clear picture of the amounts [of radiation] that the children have been exposed to, and even if they understand the internal damage, long-term they don't know what's going to happen as they grow up. I want the government and TEPCO to tell us clearly what they intend to do if any problems arise!!"
- "I want them to guarantee monitoring, treatment and medical care for the children's health on a semi-permanent basis."
- "When the children have grown up, I want them to get proper treatment if any problems arise because the influence of something or other. It would be best to have a consultation center in place if and when that happens."
- "I want the children to get health checks and examinations over the long run in the future. I don't want to hear things like 'It's not such a big deal' or 'We can't be sure that this is related [to the accident].' They should be ready to take action at the slightest change in their condition, and the children should get that support right through their lives. It's enough if the system just covers the children (including financial supports).
- "Is the government going to compensate the children properly when they end up getting thyroid cancer? Are they going to issue them with special pass-books like they did for the A-bomb survivors in Hiroshima and Nagasaki? I don't get the impression that the government gives a damn about the kind of future our children are going to have to face."
- "TEPCO is paying us compensation at least for the time being, but it would be a big help if we could get free cancer treatments and so in in the long term going forward."

(ii) Burdens on household expenses

Against a backdrop of increased strains on respondents' household expenses, some opinions were expressed regarding their hopes and calls for social security and other benefits in order to cope:

- "Of course the people living in temporary shelters should get support, and

people who lost their homes, but the radiation levels are high here in Koriyama, too. We have children, so I think we should be given benefits and compensation to make our lives easier, too.”

- “We’re getting nothing, even though the radiation doses in Fukushima City are higher than places nearer the nuclear power [plant] like Haramachi. The kids still can’t play outside. We take them swimming twice a week. We’re nearly destroyed with the stress. They’ve set up indoor play venues all right, but they’re all packed. We have to take care of the house and garden, so we can’t go on trips anywhere far on weekdays, but every weekend we go outside the prefecture. It’s really costly. Whatever about us adults, I think the fair way to go about things would be to pay some kind of child benefit – like the children’s allowance – for every child living in the prefecture.”
- “The way I’m trying to do my job properly as a parent is getting the kids away on short trips. It takes money. It’s really hard. I’d love to see some kind of support system in prefectures with low radiation levels, to save the children of Fukushima Prefecture. * (E.g., toll-free highways, amusement facilities, etc.)
- “I want them to put up the children’s allowance.”

(iii) The particular features of the issue

In relation to possible future impairments to their children’s health, respondents placed heavy emphasis on compensation and other forms of care after the fact, but even more emphasis on prior prevention and early detection. Given that parents do not wish their children’s health to be taken lightly, this is a perfectly natural reaction on their part. A number of statements discussed the need for regular examinations such as monitoring. This seems to be the more appropriate approach in consideration of children’s health.

However, the provision of free regular examinations would entail massive expenditures. In reaction to this, in fulfilling its obligations to provide compensation for future impairments to children’s health, the government for its part can contest the linkage of such health impairments to the events that took place in Fukushima in 2011. It can be predicted that even if the courts were to rule that the government was in fact liable, the people affected would be at an advanced age at that point, and that the actual amounts of compensation to be paid out would be smaller than the kind of sums envisaged above.

A number of statements also recorded respondents’ desires and calls for benefits to offset increased strains on their family finances. Having such benefits available would certainly go some way toward easing the economic stressors to which they are subject. However, while there are aspects of the situation that should properly be addressed through compensation, there is also the risk that people will use such benefits simply to

“blow off steam.”

9.3 Taxation

Some respondents expressed dissatisfaction with the burden of taxation after the nuclear accident (see the material on taxation and public-utility charges in 3 (2) (v) above).

The particular features of this issue are concerns regarding the irrational nature of property and residential taxes, and fears of further rises in the consumption tax.

9.4 Overall response

(i) Dissatisfaction with the government’s handling of the situation

There was dissatisfaction with the government’s handling of the situation. For example, some statements discussed the lateness, incompleteness and irrationality of the measures taken:

- “We don’t really know if it’s safe or not inside our house. That’s the situation. It’s been more than a year and a half since the Earthquake, and yet I still don’t feel that the prefecture or Tokyo or the city are doing anything, and I especially don’t see our local council doing anything to get us back on our feet. They’ve been so slow to get moving that honestly I’m past being annoyed at this point – I almost feel like giving up.”
- “I have nothing at all good to say about the way they’ve handled the situation – the government, TEPCO, the prefecture, the city. None of them.”
- “I’m not satisfied with how slow the national and local governments have been in their response. And they’re wasting money in the way they do the spending on the decontamination and whole load of other projects. I want them to listen to us more, and do the things that need doing first properly in order.”
- “I’m well aware that the local authorities did quite a lot of different things for us after the nuclear accident, but even so they were slow in doing what they did, I think.”
- “I feel uneasy that the various local governments are all taking action at different speeds. Why are the slow ones so slow? I feel stressed and dissatisfied.”
- “When the government was slow to get on the ball, I thought that they must be going through some kind of preparation period. But now I see that they’ve still done nothing for the children, I just feel disgusted with them from the bottom of my heart.”
- “At the end of last year, I went home temporarily to clean up the place. But the moss in the parking lot and the gutters were at over six microsieverts, and I

realized that bringing up a child in a place like this is impossible. [...] I called the city and prefectural governments time and again, telling them that the radiation levels are so high here it should be listed as an evacuation area, but they actually shouted at me – ‘It’s safe. Are you crazy?!!’ And I felt there’s absolutely no need for me to stay in Fukushima to the point of being talked to in such a horrible way.”

Some respondents’ statements also recorded dissatisfaction with individual mayors:

- “In today’s Fukushima, the mayor’s done nothing but he walks around with a smug look on his face like everything’s been taken care of. I tell you, Fukushima people don’t count on him for anything at all.”

(ii) Dissatisfaction with TEPCO’s handling of the situation

There was dissatisfaction with TEPCO’s handling of the situation. For example, some statements discussed respondents’ reluctance about the decontamination process, and concerns about run-offs of contaminated water, among other points:

- “My husband’s in the Self-Defense Forces, so he was doing decontamination and the like. He said he was really annoyed about the way TEPCO was just going through the motions. Nothing’s changed even though two years have gone by.”
- “I really, truly hate TEPCO. They’re a bunch of scumbags. There are people who lost their homes – why don’t they step into their shoes! They ought to come over here on their days off and work on decontamination.”
- “They still don’t really have any policy to sort out the Fukushima nuclear power [problem], so we’re having a hard time here. You get run-offs of contaminated water and things like that. [...]”
- “TEPCO’s just trying to by their way out of trouble by giving people compensation. I don’t feel that they really care about us at all. I don’t need their money. I just want them to get on with the decontamination and give us our old lives back.”
- “We get compensation payments from TEPCO every now and again, but if they have that kind of money I’d like to see them taking the lead in the decontamination of Fukushima Prefecture. It’s meaningless if they just throw money at us.”

(iii) The pros and cons of nuclear power, taking the nuclear accident into consideration

Given respondents’ experience of harm from the nuclear accident, there were statements expressing critical opinions in the discussion on the pros and cons of nuclear power:

- “I want to see decommissioning as soon as possible, even if it’s just by a day. I

want my child to be able to play outside and play in the sand like we used to before the nuclear accident.”

- “Now if we don’t have nuclear power, we may not be able to go on living the kind of lives we’ve always had, I suppose. But still, I want them to find the next form of energy as soon as possible, for the sake of the children of the future. We don’t want to see any more people fall victim to nuclear power.”
- “Living a safe life in peace and content is the most important thing, more important than money. I only pray that Japan will never have to go through any more nuclear accidents.”
- “I want us to go no-nuclear soon, for the sake of the children.”

(iv) Doubts about how donations are being used

There were statements of doubt about how donations are being used:

- “I haven’t got a clue about where the money they collect for donations actually goes. I can’t see it, I can’t feel it.”

(v) The particular features of the issue

Both the government and TEPCO were subject to wide-ranging expressions of discontent about their handling of matters after the nuclear accident ((i), (ii)). This discontent was “The dissatisfaction of being in this situation where rebuilding isn’t really happening and compensation isn’t getting paid enough, even though we’ve lost our freedom in all areas of our lives because of the nuclear accident,” producing feelings of stress, unease and distrust in the people affected.

Statements calling for the decommissioning of nuclear power plants were also visible (iii). One might think that the debate on nuclear power revolves around questions of policy, at first glance removed from issues such as the life environment and stressors. However, the statements on the pros and cons of nuclear power as given in this survey were made after the nuclear accident, and made by respondents who had experienced the government’s and TEPCO’s handling of events for themselves; the points they made thus reflected their awareness of the issues as reached on the basis of their thinking about their experiences. This is to say that [for them], the impact of the nuclear accident was to be either intensified or ameliorated by the approach taken by the government and TEPCO after the accident. The statements above, in effect, express the opinion that “The government and TEPCO’s response was so bad that decommissioning of the nuclear power plants has to be called for. = The impact of the nuclear accident was too great to bear.”

10 Health

10.1 Children

While the nature of the relationship with the nuclear accident is as yet unclear, respondents discussed a range of complaints – thyroid lumps (growths), nosebleeds, exposure to radiation, lack of movement and physical strength, overweightness and obesity, lack of sleep, conditions indicative of intense stress, asthma, sore throats and fevers:

- “Their atopic dermatitis has gotten terribly bad.”
- “Our child has Down syndrome, and they told us he had a large thyroid to begin with; now I worry he’s been getting so much radiation at that point.”
- “My daughter got A2 for her thyroid echo results, so she has cysts. I’ve been getting gradually more and more frightened since I found that out.”
- “They’ve been coughing like they have asthma ever since the nuclear power [accident], so I do reckon they’re getting stressed in the way that kids do. They can’t play outside the way they want to, so I really feel sorry for them.”
- “I’m the same way myself, but my three-year-old daughter gets jumpy any time there’s a slightly big tremor. She sometimes looks like she’s going to cry. My heart pounds and my hands start shaking.”
- “We already had sleep disorders since before, so I don’t think the way we get tired easily – mother and child – and get in bad condition (after the nuclear accident) is all the result of the Earthquake.”
- “My daughter (14) has developed bullous tumors or something on her neck.”
- “The Earthquake happened when she was two years and one month, and I think it still affects her even now in lots of ways. – She suddenly started stuttering. (It gets really bad on days when there are aftershocks.) She starts and shrinks in fear any time she hears anything that sounds like the emergency earthquake siren.”
- “Since the accident, our oldest boy (aged 6) has started to get these copious nosebleeds. It’s such a worry. One nosebleed was really intense, with the blood spurting out for a good fifty minutes or so. I was beside myself, thinking I should call an ambulance. I took him to the hospital later, but they couldn’t find out what was wrong with him. [...] They said it might be an allergy, but I can’t shake the fear.”
- “Her thyroid examination came back with ‘Growths of 20.0 mm or under.’ [...] Maybe it’s because she’s in the house all the time, but her physique is getting weaker. (eg. when she plays rope-jumping, her lips go purple and her breathing becomes disordered.) I’m worried.”
- “Our oldest boy got his thyroid exam, and the results came back A2. That meant he has cyst, but he is all right.”
- “Our youngest has been in and out of the hospital four times with bronchitis and pneumonia since last year, and our oldest has started getting a cough. He is

diagnosed as asthma. I'm worried that the nuclear power thing might have something to do with it."

- "Our oldest boy (8) has been in the house ever since he couldn't play outside (getting really stressed), so he just sits around eating and playing video games. His weight has gone up since he doesn't get the chance to move around. Now we're able to play outside a little bit longer and longer, but, because he is diagnosed as obesity, if he keeps up the same weight, I'd like to do something about it."

"We found lumps on the children's necks (both of them) after the nuclear accident. On the left side, about as big as a bean, I don't know about the right side. So we went to see the pediatrician, and she said it looked like swelling of the lymph glands, and it would take a while to go down. So they've been getting medicine and checks, and waiting and seeing, but the lumps are still there. Then they got whole-body counting and thyroid tests. They've found cysts."

- "Our daughter's diarrhea, crying at night, tantrums...the black lines that came out on her fingernails, her eczema getting worse. [...] I'm not saying it's all down to the radiation, but then again maybe it is. There's nobody I can go to. Everything's just grey, I feel listless. I'm sure I'm not the only mom like that."
- "From March 11 to July 11 [2011], the radiation level for me and our son was 2.2 millisieverts, and 2.0 for my husband. We were exposed to that much in just four months, so I worry if there may have been some damage to our health."
- "I took the three kids and we went outside the prefecture. [...] But then my eight-year-old got a high fever. He'd never spent the night anywhere he didn't know before. So I'll never forget the day he went into the University hospital. [...] After I took the eight-year-old and the five-year-old back here, they started to complain of headaches and stomach cramps. As a parent I was worried of course, but I think right now we're able to enjoy our lives sometimes and worried really only sometimes."
- "Our oldest son was terribly bullied at school, and he looked for help, but the school just treated it as horseplay, and before long he'd developed a psychosomatic illness. [...] Our second boy got lumps in his thyroid, and I realized that he'd gotten internal exposure."
- "In their thyroid examinations, my oldest son and second daughter were given A2 (growths of 20 mm or under, no need for re-examination). My second daughter started getting bald spots on her head from around last October, and I found a white hair on my youngest daughter [...] so the impact of the nuclear power [accident] keeps giving us stress every day."
- "We moved to Tokyo for a while after the nuclear accident, and the family was split up. Our son got emotionally unstable. I went to lectures and so on, because I thought I had to do something for him. But the more I learned, the more

oversensitive I became about my child's behavior. He may have reached breaking point, because then he got ill. Ever since then I've had a silent resolution not to get too worked up about things as long as we're living in Fukushima."

- "We sent our kid to my parents' place outside the prefecture, but we couldn't go because of work, so we were apart for over a month. However, she got bad teeth (not that she'd ever had a single one before) and she lost some of the back ones. Apparently she won't grow them back until she's in junior high. The dentist told me it's going to make her teeth uneven."
- "Since the accident, our oldest (seven) has started to often get nosebleeds, so I'm really worried. Some weeks she gets them four times. At the very least you can't say the accident has nothing to do with it, so I'm very uneasy about it."
- "A lot of people got A2 results in the thyroid tests that Fukushima Prefecture carried out. The thing is, they can't tell us at the moment whether that's normal or abnormal because they have insufficient data. That really is something to worry about."
- "Our two oldest got A2, 20 mm or under, but that means they have some kind of lumps or cysts, and that's a real concern. For about six months after the accident, more and more kids at school and our relatives' kids started to get nosebleeds. Our youngest got a fever and couldn't shake it, nobody knows why, and she went into the hospital. Her older sister is the same – she was hospitalized because her white blood cell count was extremely low. The two of them went into the hospital at the same time (3 months after the accident).
- "Emotionally I've been all over the place since our daughter's been getting her results back recently. They're estimates, but it looks like she was exposed to 1.9 millisieverts over four months. I had no idea it would be that much."
- "As soon as my son says 'My throat hurts' or 'I don't feel well' I immediately think – 'Is it something to do with the radiation?'"

10.2 Parents

Many respondents discussed medical complaints and poor condition that would appear to stem from stressors and feelings of unease:

- "I worry tremendously about anything to do with food – I tend to get neurotic."
- "I got pregnant after the nuclear accident (the Earthquake). It was a stillbirth. I can't tell anyone this, but just after the nuclear accident I didn't realize just how dangerous radiation was. We'd just moved in to a new house, and to make the surroundings nicer, we used to harvest trees in the woods and climb right up the hillocks to cut the grasses and branches. I did this for a few weeks with my husband and with our child, who was still just two at the time. God knows how

much external exposure I got those days. [...] It's possible that maybe that's why I had a stillbirth. [...] I have to live with that possibility for the rest of my life. Not just the pain of having had a stillbirth, which I sometimes feel. But also the regret that wells up inside me at the same time."

- "I'm the same way myself, but my three-year-old daughter gets jumpy any time there's a slightly big tremor. She sometimes looks like she's going to cry. My heart pounds and my hands start shaking."
- "I was worried sick the entire six months after the Earthquake. I was drinking more and not getting enough sleep. That might be the reason I lost hearing in my left ear. The doctor told me it was Meniere's disease. I've suffered from depression on and off since then because of that."
- "We're living together [with his parents], so I can't come out on the spot and express my own opinions straight. I haven't laughed once since the Earthquake. I've gotten so nervous in myself. I often feel bad, and I get grumpy and easily annoyed."
- "For the year after the accident, I thought through so many things I could hardly write them all down here. Worries about our kids' health in the future. Prejudice. Is it all right to stay on here and not evacuate? Are we going to be all right like this? So dissatisfied with the government. Distrust. After the accident, I lost a good seven kilos."
- "When I was pregnant with our second child, I was taken into the hospital because we were about to lose her with imminent, and that's where I experienced the Earthquake. My husband was away at work, and I'd left our older daughter with her grandparents. So we couldn't be with her just when a child needs her parents the most, just when they're most afraid. We weren't able to evacuate like so many others did, either. I still cry when I look at my daughter's photo that they e-mailed me that time. And when I look at the images of the earthquake and the nuclear power [accident] on TV, indeed the tears roll down. I wonder is that what they call PTSD? [...] Even so, right now, I don't think I'm in an unstable condition."
- "We went to Hokkaido in the first half of the summer holidays last year. We came back for [the] o-Bon [festival in mid-August] just to show our faces to the relatives, and then we went straight off again on a trip to the Kanto area. So we spent the summer taking short trips away like that; I was really worn physically and mentally out at the end. Just then, our boy got ill with a high fever, and then the illness was passed on to me. I had pains from my shoulders to my back, I was so sore couldn't move my head. The pain and noxious fever lasted on and on for days."
- "The anxiety caused by the Earthquake gave me mental disorders. But there I was, finally, back in society for the first time since giving birth, doing a job I

liked and that I'd found for myself. But my illness left me unable to cope in society, and a year or so later I'm back here again, running down my savings even more."

- "My parents had a hard time, too. My mother got cold sores on her face, and couldn't stand for dizziness. [...] The nursery school was closed, and it was just us, so I had no friends to count on around. The office phoned me up, going 'Everyone's back at work. Why aren't you here?' That was very hard on me. I explained to them, 'There's nowhere I can leave my children,' and they told me that was no form of excuse. Even though there was no gasoline to be had, I somehow got the kids to my parents' home, and went back to work. Everybody there ignored me. It was so awful I developed panic disorder. It was so truly painful, even now when I look back on that terrible time I can't breathe well, I get a panic attack."

(3) The particular features of the issue

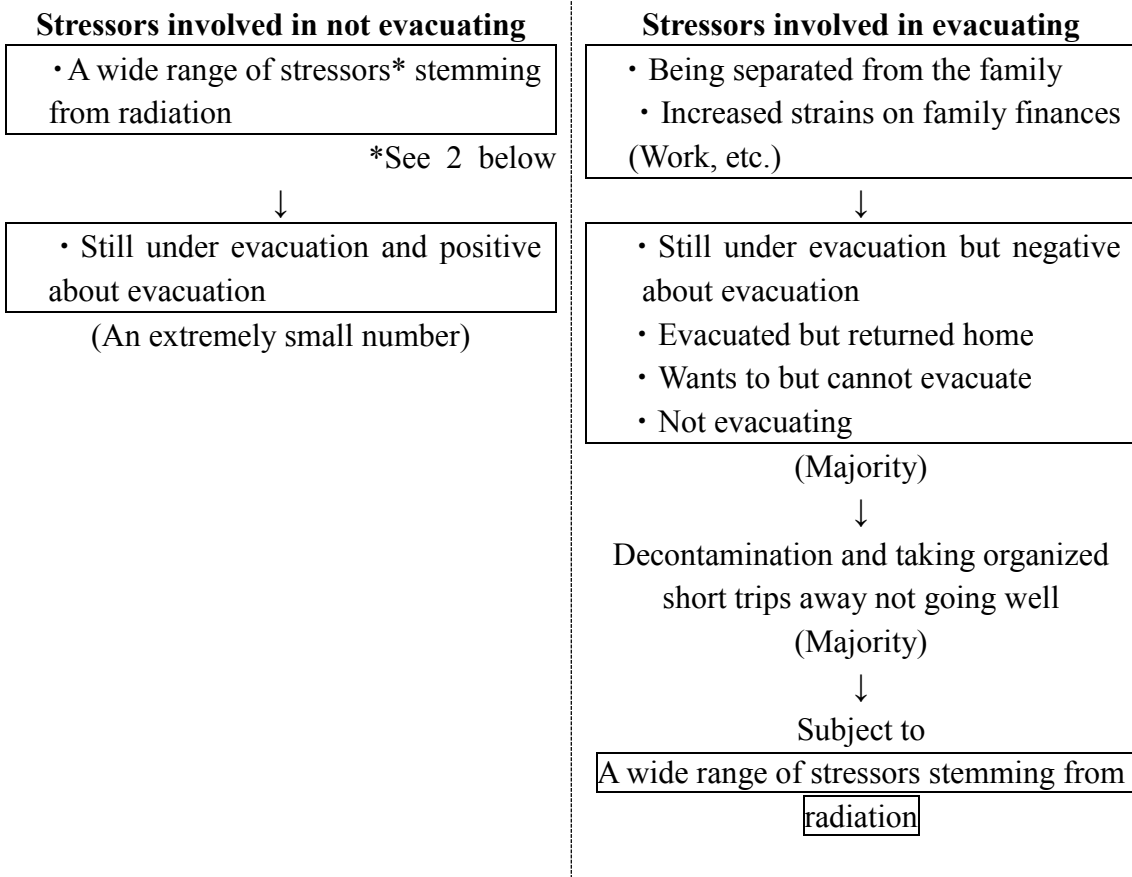
In regard to children, restrictions on outside play have been linked as potential factors in physical weakness and lack of exercise, overweightness, obesity and lack of sleep. Apart from the fact that the loss or decrease of opportunities for physical exercise constitute direct causes of physical weakness and lack of exercise, they can also be a cause for overweightness and obesity. This is because autonomic nerve disorders may also cause lack of sleep. It is possible that stress conditions for children are influenced by stress factors such as being separated from parents (particularly the father), and that stressors acting on parents and others may have a knock-on effect. For parents, it was apparent that there were health impacts, such as panic attacks, stemming from stressors.

11 Discussion

In this section, let us separately discuss the eight categories above, making use of schematic diagrams.

11.1 Dwelling

Because the dwelling space is subjected to radiation, evacuation (moving elsewhere) is considered as an option.



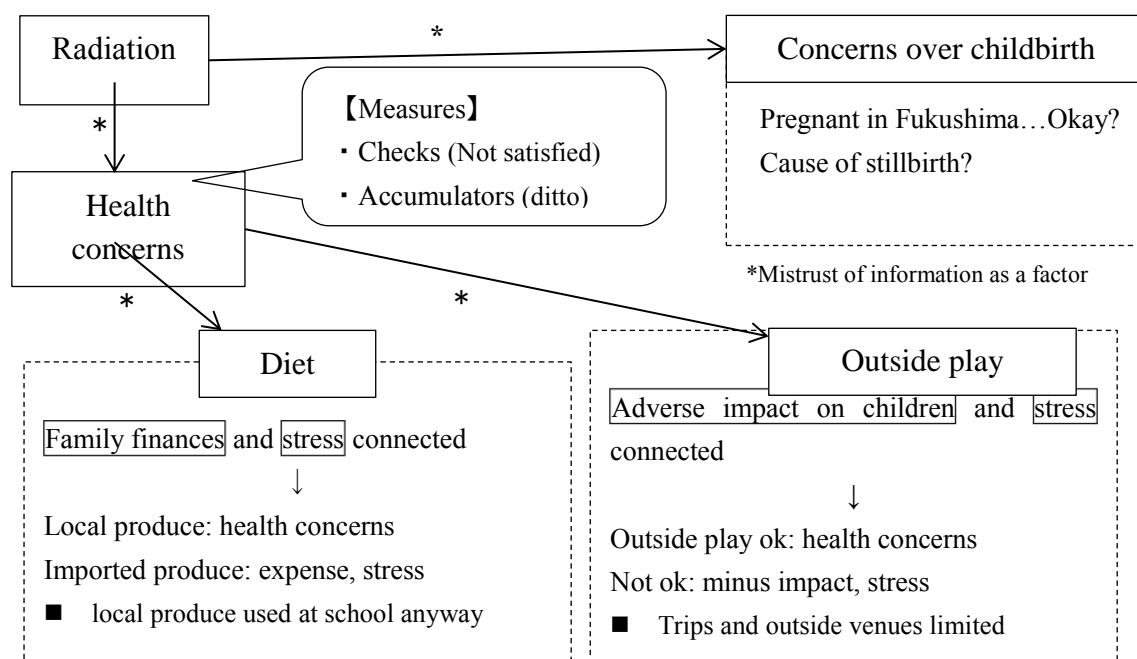
While the way and degree to which “a wide range of stressors stemming from radiation” was felt varied from family to family, in most cases we must expect that they were of an intensity such that they were impossible to ignore. We can see just how intense were the psychological and economic stressors of “being separated from the family” and “increased strains on family finances.”

In cases where “evacuation” did not go well, respondents considered ridding their dwelling of radiation through “decontamination.” However, decontamination is not proceeding apace. Even households whose decontamination had been completed had remaining dissatisfactions. The achievement of a life free of radiation through decontamination is a difficult proposition.

The approach of “taking (organized) short trips away” is by its very nature a temporary solution, and puts heavy strains on family finances. While such trips can go some way toward relieving the stresses of everyday life, they do nothing to resolve the underlying problems of radiation.

11.2 A wide range of stressors stemming from radiation

(1) Children's health



In order to avoid harmful impacts on children's health through radiation, respondents considered avoiding local foodstuffs and restricted children's outside play.

(i) Diet

Numerous households bought foodstuffs and water from other prefectures. In these cases, they faced heavy stressors, including increased strains on their household expenses and the stress of choosing foodstuffs. Some of these stressors appear to have no end in sight.

In other cases, respondents ate local foodstuffs because they were unable to bear the pressure on their family finances; local foodstuffs were also being used to prepare school lunches. With no room for choice available, the health stressors were intense.

(ii) Outside play

Health stressors were at work if children were allowed to play outside, and equally there were stressors involving adverse effects on such areas as physical abilities and personality formation if play outside was restricted. The choice of one triggered the stressors involved in the other, and they were thus connected.

While taking (organized) short trips away and availing of venues for playing inside may offer a means of temporary escape, the costs involved render them inaccessible to the average family on an everyday basis. Also, given the fact that they do not offer access to the natural world (among other shortcomings), venues for playing inside do not amount to a true alternative to playing outside.

(iii) Examinations and check-ups

Whatever the case, the situation is one in which the health stressors involving children can never be completely resolved. For this reason, large numbers of respondents hoped and called for check-ups for children.

However, the dissatisfactions respondents felt about the methodology of the examinations already being carried out have produced doubts about the reliability of the examinations as such. As well as increasing the severity of health stressors involving children, [the examination system] seems to have mistaken its priorities.

Some of the things that the respondents have called for would seem to be a matter of course – that examinations be carried out properly, and that the process and results be fully explained to people insofar as is possible.

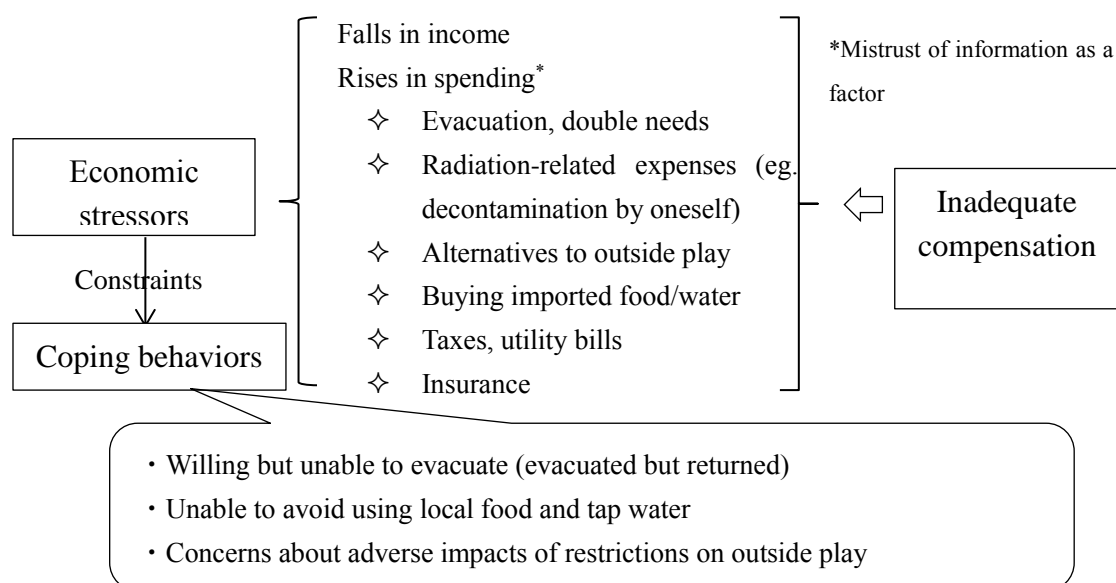
Also, we can expect that the respondents will deal with daily radiation by attempting to avoid it [there and then] to the maximum extent possible. In fact, there were statements to the effect that Geiger counters were needed more than accumulators.

(iv) Unborn children's health

Stressors involving childbirth (health stressors involving unborn children) resembled the stressors involving children's health. Also, some of the stressors involved in becoming or being pregnant in Fukushima resembled or were connected with those involving evacuation.

On the other hand, there is no way of resolving the stressors involved in a respondent being unable to shake off their suspicions that the radiation may have been a factor in a miscarriage (stillbirth) they have endured. The respondent's doubts will linger even in the face of claims that no linkages have been scientifically demonstrated.

(2) Respondents' financial circumstances



Priorities need to be set in order to get anything done. Families also need a certain degree of financial leeway if they are to evacuate (move) or choose expensive foodstuffs for their daily meals.

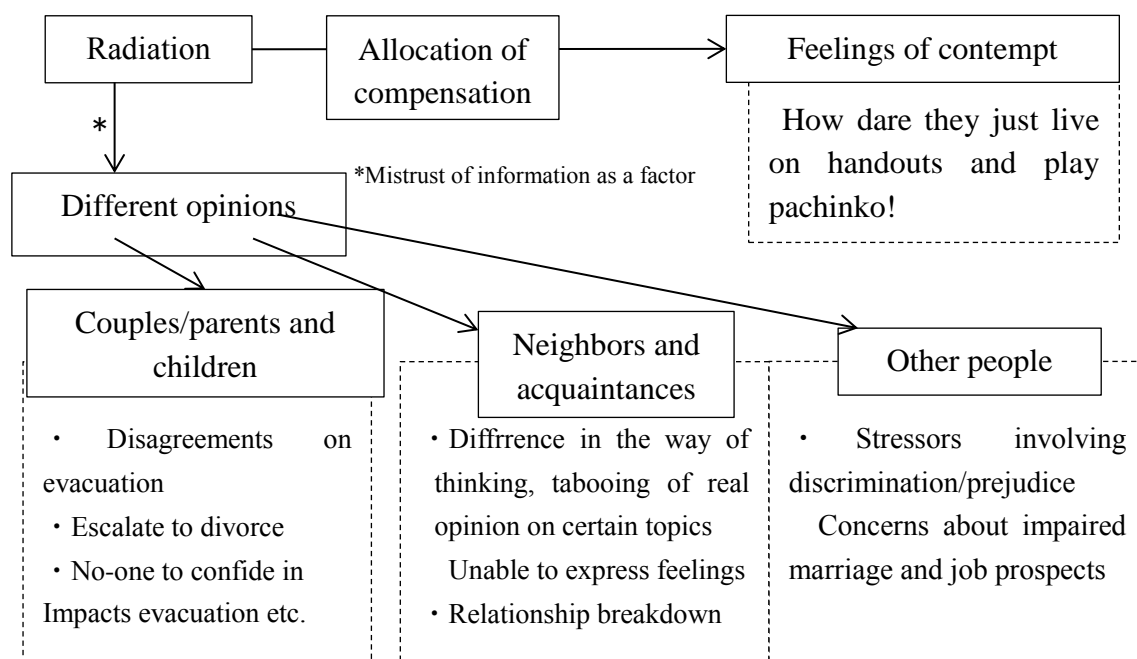
Thus, on the economic and family-finance front, while we can see that the nuclear accident has necessitated striking rises in family spending needs, this increased spending has not been matched with compensation to cover it. This also included families whose incomes have shrunk. Some of the expenditures involved are indeed one-off, but others (expenditures on foodstuffs, for example) are repeated and continuous. There is no prospect of any compensation for them in the future. The consumption tax will be raised. The economic stressors acting on the respondents are only set to become increasingly intense.

Under these circumstances, there were limitations on the degree to which evacuation (moving) to other prefectures and buying foodstuffs from other prefectures were viable options. In fact, even if they wanted to evacuate, there were households which could not do so due to the situation of their family finances, and others who had evacuated but were forced back to Fukushima for the same reasons. The same holds true in regard to the use of local foodstuffs and tap water, with households forced to consume them for reasons of cost.

In fact, even if families were able to avoid these constraints on their behavior, they still faced risks to their health through the stressors involved in trying to hold their family lives together in the face of such strains on their limited finances, and doing so while simultaneously subject to stressors involving their children's health.³ Also, the stressors to which parents were subject were passed on to their children in a knock-on effect, generating the risk of adverse impacts on the children's development and health.

³ One respondent stated: "I worry tremendously about anything to do with food – I tend to get neurotic." However, these worries may very well prove all too real.

(3) Personal relationships

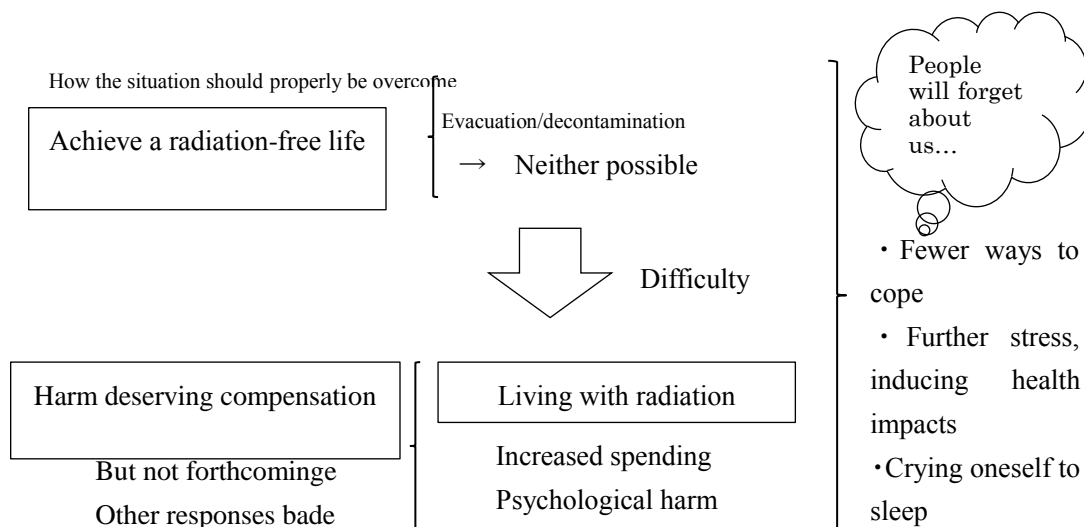


The stressors involving discrimination and prejudice from (unrelated) other people were quite striking. For marriage, will our child face opposition from their partner's family simply because their parents are from Fukushima? Will they get turned down in the job market for coming from Fukushima? Since these stressors involve the child's future happiness, we may presume that they act with similar force to those stressors involving children's health.

In the context of relationships between husband and wife/parents and children, decisions on issues such as whether to evacuate or not were unavoidable, and differences of opinion easily led to conflict. In some households, conflict led on to serious deteriorations in family relationships. Such deterioration in turn could impact decisions such as whether to evacuate or not. Meanwhile, with neighbors and acquaintances, apprehensions about just such deteriorations in relationships may have brought about the tabooing of certain topics of discussion. Unable to voice their true feelings to each other, respondents were precluded from finding release thereby from the stressors affecting them.

A certain number of statements voiced dissatisfaction with the allocation of compensation. However, these sentiments were not necessarily confined to the actions of TEPCO and the government [i.e., the bodies providing the compensation]. Not a few respondents recorded resentments against those receiving (or appearing to receive) more than themselves, in some cases to the point of voicing feelings of discrimination. Not only do such negative feelings compromise the dignity of those against whom they are expressed; they also exert a baneful influence on the personality formation of those expressing them.

(4) Overcoming the situation



The most basic way to overcome the situation is to achieve a life free of radiation. However, “evacuation” – i.e., moving elsewhere – is left up to the individual or individual family, and decontamination is not proceeding apace.

Most households are thus forced into living with radiation. It should follow, then, that the increases of household expenses and the psychological damage to which this subjects them requires compensation. While compensation does not amount to a fundamental solution, it can go some way toward relieving economic worries, broadening the viable range of choice of coping behaviors, and preventing the impairments to health which stem from the stressors in play.

However, the compensation provided by TEPCO was only doled out on a formal basis and in miniscule quantities, and its provision has effectively come to a halt. This means that the viable range of choice of coping behaviors may well narrow; impairments to health which stem from the stressors in play may be facilitated; individuals may still be forced to bear that;⁴ and the vulnerable, who have no means to resolve their own plight for themselves, will continue to face the brunt of the tragedy. Given the concerns that the respondents discussed concerning the stressor that their plight will be forgotten if nothing changes, it would be desirable to see information on Fukushima (in its present state) being communicated [more widely and forcefully].

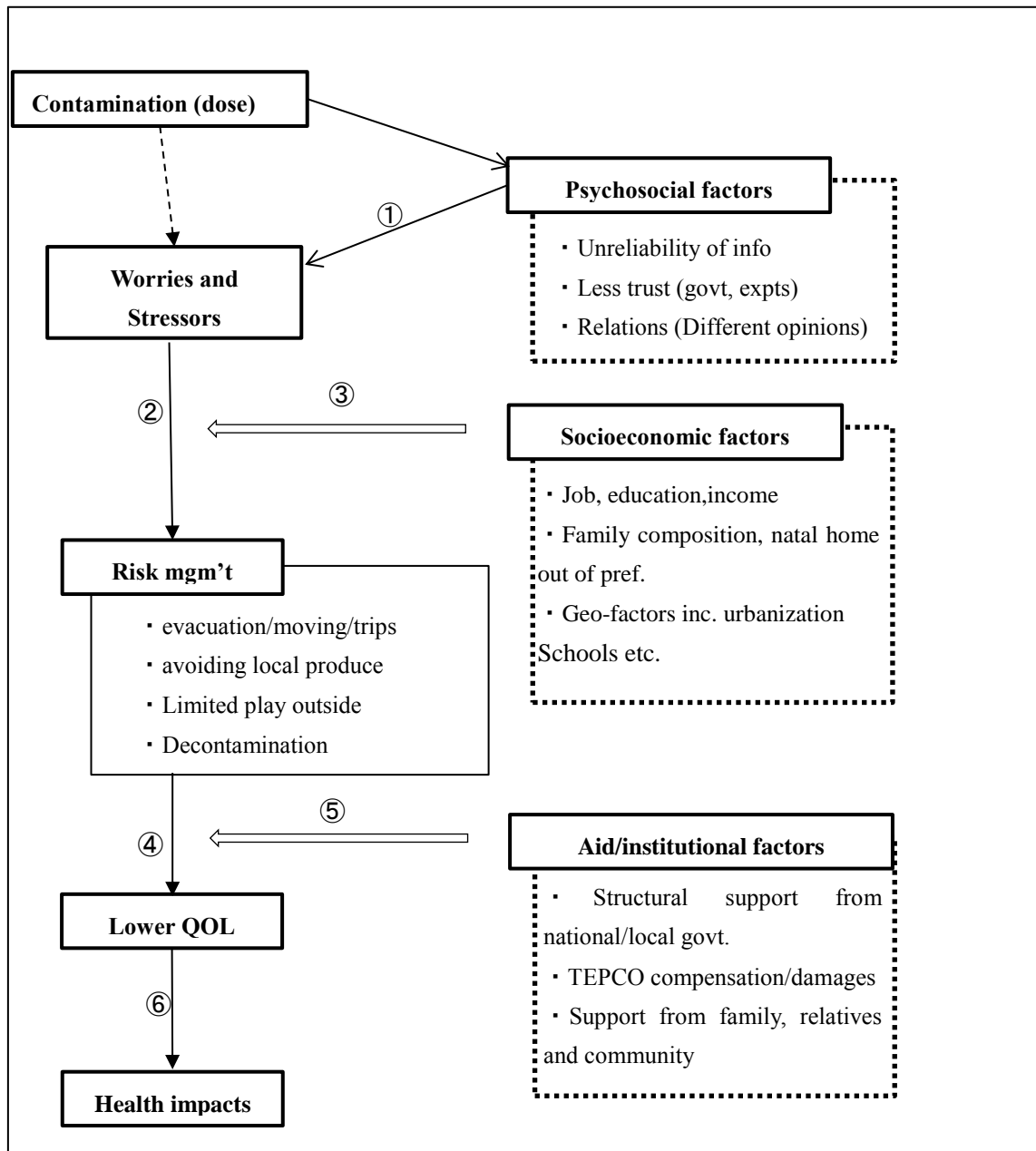
Apart from dissatisfaction about compensation, another striking aspect of this collection of statements was the level of discontent expressed in regard to the handling of the situation by bodies such as the government and TEPCO. Drawing on this discontent, there were statements which dismissed the need for nuclear power as such.

⁴ Their awareness that compensation has not been forthcoming even for harm that their children have suffered up to now fuels respondents’ concerns that none will be made available for any future adverse impacts on their children’s health. This generates anxiety and even resignation.

In the unlikely event that a nuclear accident should occur, one should expect calls for the situation to be handled appropriately. The respondents' statements are rich in suggestion that if such an accident cannot be dealt with properly, then the nuclear power project should end.

11.3 Relational diagram of the free comments as a whole

As a result of the nuclear accident, radiation rained down on the homes, streets, fields and schools in which mothers and their children in nine localities in central Fukushima Prefecture had hitherto lived their everyday lives. This event triggered major changes for these individuals and families. While radiation has brought about major changes in the lives of these mothers and their children, at the same time the unreliability of the available information on the health impacts of the radiation has brought major stressors to bear on them, regardless of whether the radiation doses to which they are being subjected are high or low. For example, they face the appalling situation in which they do not know what information about radiation to believe, and from who. The backdrop to these circumstances is a decline in trust in bodies and individuals such as the government, TEPCO, specialists, and medical professionals. Also, differences in opinions about and awareness of radiation have acted as a source of stress and unease for the mothers and their children. In the face of such stress and unease, the families involved have engaged in a range of risk-management behaviors, such as: evacuation; moving house; taking short trips away; sending their children on organized short trips away; avoiding local foodstuffs; restricting children's outside play; and undertaking decontamination on their own initiative. However, a wide range of factors have contributed to the differences in approach available to these families in responding to the radiation. These include: their work and level of affluence; the socioeconomic factor of access to knowledge; the family structure; whether or not their original homes [pre-marriage] lie outside the prefecture; the degree of understanding afforded by their families and others around them [to the course of action they intend to undertake]; and geographical factors such as the degree of urbanization [of their localities]. Changes in the lives of these mothers and their children depended on such factors as those listed above, as did deteriorations in their quality of life. Numerous and varied health impacts were also generated from the same discrepancies. The diagram below is intended to present these interrelated factors in a simplified form.



1 About ①

Factors intensifying stressors stemming from radiation

(1) Unreliability of information

- “The government and the prefecture and the city keep going on about how we’re ‘safe,’ but I don’t know what evidence they have for saying that. So I don’t trust them. What’s going to happen to the children of Fukushima in a few years? That’s all I worry about, whatever else.”
- “The government and the prefecture and the city all come out with different

answers when they get asked about the cesium and whatnot from the nuclear accident, and what it's going to do to the kids. I haven't got a clue which of them is giving us the proper information, and that stresses me out even more. They ought to give us the right answers properly."

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(2) personal relationships

- "I couldn't agree with my husband and my in-laws if radiation was safe or not. They had a different take on things. That was really tough on me." My parents felt like me about it, so I often went back to my family home. The children weren't at nursery school, and there were no other moms around how I could call friends, so I didn't have a chance to just chat casually with anyone about the radiation. I used to spend whole days looking up about it on the internet. About a year after the nuclear accident, they set up a play group for parents and children who couldn't play outside for fear of the radiation in the city, and the parents could get counseling sessions with a clinical psychologist. I think that helped me come out of my shell a little bit. The clinical psychologist told me about the radiation limits (for example, it's okay to play outside if it's $2\mu\text{Sv/hr}$. or lower, but over that is no good.) And she said things like 'You need to carry your own yardstick for making decisions,' and 'Take things easy.' The things she told me really helped me out. Around the same time, there was a program on the local TV station with a professor talking about the radiation, and at long last this was someone I could really trust. Even now, I go by what he said. But even so, I sometimes hear things that tell me 'Yeah but at the end of the day, it is actually dangerous [to be here], isn't it?' – and then I start feeling down. There are hotspots around where I live. It's beside Iitate Village, which was totally evacuated. So when I say that I live in _____, people ask me 'Oh, is it actually okay?' Then I feel, I don't know how to describe it – dejected, disappointed, and let down."

The second half relates to ①.

2 About ②

Risk-management behaviors stemming from stressors

(1) Evacuation

- "We've evacuated out of the prefecture. I still really don't feel good about the idea of raising a child in Fukushima. It's hard on the family finances, but we decided to move so we wouldn't have any regrets later about not doing it. We're going to stay out of the prefecture until this child's ready for first grade. Then

we'll see what the situation is, and decide.”

(2) Decontamination

- “We’re in the building trade for ourselves, so after the accident we got the house washed down with high-pressure equipment, and we replaced the soil in the garden out front and put a layer of concrete on it. And we had to keep on buying our drinking water for ages after the nuclear power [accident] as well. It would be great if they could help us out on the financial front or give tax exemptions or something.”

(3) Taking (organized) short trips away

- “ Since recently, the city administration has been talking about decontamination (residential areas), but I end up thinking that we’ll never get back the safe and secure lives we used to have before the Earthquake, whatever decontamination they do. I want the government, TEPCO and the prefecture working for the sake of the children of Fukushima Prefecture in a way that I can see. The way I’m trying to do my job properly as a parent is getting the kids away on short trips. It takes money. It’s really hard. I’d love to see some kind of support system in prefectures with low radiation levels, to save the children of Fukushima Prefecture. * (E.g., toll-free highways, amusement facilities, etc.)”

(4) Diet

- “In terms of our diet, even if people say [local food] is safe, if possible I always buy goods from other prefectures, even if they’re more expensive, and always our (drinking) water. “We’re a single-parent family, so we don’t have much money and it’s a big problem for us. But thinking about my child’s health, there’s just no way around it. So of course I worry about our future. I just couldn’t face myself if my child were to get sick. I’d be like, why didn’t I do this, why didn’t I do that? [...]”

(5) Outside play

- “The radiation is a worry every day. We don’t play with the kid’s outside, either. I’m worried about the children’s declining physique. They’re losing their strength, and they get tired immediately.”

3 About ③

Factors hindering risk-management behavior

(1) Evacuation

- “Even though it makes me sick to think that we couldn’t move away even though we wanted to, the very thought of leaving my hubby behind and living somewhere else – not having enough money and that – the very idea’s enough to make you lose your appetite. So we’ve stayed right here in Fukushima.”
- “We just don’t have the money to move. We have a small child, and so there’s a lot for us to worry about, but we still don’t have the money to go anywhere else. We can’t get by. Help! We want to move but we can’t.”

(2) Decontamination

- “They ought to do the decontamination faster. The place where we live, they’re going to get around to us in three years’ time at the earliest I hear, given the order they’re doing the decontamination in. There’s only so much you can do for yourself when it comes to decontamination. Who would want to let a child out to play in that kind of environment?”
-

(3) Taking (organized) short trips away; play

- “I’d like us to be able to access regular short trips away, but there’s less and less groups taking people, and the costs have become pretty steep for people like us.”
- “I’d like there to be more free places and facilities for people to get away for short trips. We can’t go places very much, given the cost of travel and the parking fees. Anyway, I’d like them to lose their stress and anxiety and grow up fine and healthy.”

(4) Diet

- “I actually want to buy produce from Fukushima Prefecture at a reasonable price, but I worry about our little kid. So, I get produce from other prefectures, but it’s real expensive so I buy half local. Our kid will die earlier than most, maybe.”
- “They decided to use Fukushima Prefecture rice for school lunches, even though we’re doing everything we possibly can at home to steer clear of exposing the kids [to radiation] – eating vegetables and meat from outside the prefecture, buying mineral water. But no matter how hard we try, as long as we’re living in Fukushima Prefecture, we can’t stop the kids from getting exposed.”

4 About ④

Deterioration of the life environment stemming from risk-management behaviors

(1) Evacuation

- “We took our kids out of here to relatives in Yamagata the night before the hydrogen explosion, even though we were very frightened and worried about the neighbors we were leaving behind. And I think that’s when our struggles really started. We came back here from Yamagata after about two weeks. [...] After that, I wanted us to move to my parent’s place (in Sendai), but my relatives told me “We don’t want you coming here bringing your radiation with you.” [...] In the fall of 2011, they finally came around, so we were able to move to (my parents in) Sendai. We started my sons in another school – they were in first and fourth grade at elementary – and we planned on staying away for three years. But my eldest son got terribly bullied at school [...] and he came down with a psychosomatic illness. He wanted to try and stick it out, but I decided to move us back to Fukushima because of his illness, and now we’re living in Fukushima City.

(2) Taking (organized) short trips away

- “I quit my old job so I could have the kids play outside at the weekends to their hearts’ content, and I found a job where you get Saturdays off [as well as Sundays]. I take them outside the prefecture as much as I can, but it costs an awful lot to do that every week, so I’m trying to cut down on our daily spending.”

(3) Diet

- “All the water, rice and vegetables we use come from outside the prefecture. It’s an increase of the household expenses compared to before. I’m sure that the increased stress I feel as a mother is being passed on to my children in some form as a psychological burden on them.”
- “Before the Earthquake we used to eat the vegetables and rice that grandma grew, but after the nuclear accident I say “No thanks” even to gran, and I don’t take anything from her. I feel I’m being a bit mean to her, and above all, since we’re buying expensive vegetables and rice from outside the prefecture, it’s not good for us moneywise. Granny’s eighty-four and she enjoys growing vegetables. I feel so sorry for her that she’s lost her pastime now. I’m worried that she’ll start going senile.”
- “Fukushima didn’t have any particular famous specialties for food, but the mountains and rivers were nearby, there were lakes and the sea, and you could get all kinds of food for yourself by the season. And the produce was so fresh and tasty. But since the accident, we’ve lost all of the things we used to enjoy. We such a rich natural environment around us, but it’s hard to go out and enjoy it freely, and eat

from it as we like. The soil we took up for the decontamination – even if we have to pile up around the house.”

(4) Outside play

- “Our [oldest] is at just the age kids want to play in the sand, and I’m so sorry for her that she hardly ever gets the chance. She can only play outside for short spells, and then if it gets even a bit windy she has to come inside to play in case the sand gets into the house. Even when I let her out into the garden to play, I always have to be on the lookout to make sure she doesn’t touch the sand or the grass, or put anything in her mouth. I have another daughter who’s turning two next month, and she’s basically never had a chance to play in the sand. The poor little thing! It’s so sad that she can’t experience nature while she’s a small child. Last year, the kids got sent gingko leaves from a nursery school in another prefecture. I was pleased, but at the same time it brought me to tears to think that the only way they’ll get a chance to touch plants is like this. The radiation levels are low in our neighborhood, so they (TEPCO and them) don’t worry much about us. But the fact is we need to be careful about lots of things, and we worry too. It’s not actually about the money, but I’m very unhappy that this compensation payment is the last. When I think about the number of times we’ve had to take the kids to other prefectures to play. [...] The money’s only getting tighter, and our spending’s only getting higher. I really cannot forgive TEPCO for what they did. I want them to give children back their freedom. I want the kids to be able to play freely every day. It breaks my heart to see the kids say the word ‘radiation’ like it was the most natural thing in the world.”

5 About ⑤

External support to prevent the adverse effects of risk-management behavior

- “The compensation we got last time from TEPCO was the final payment. The thing is, we have to go on dividing our lives between Fukushima Prefecture and our other place [rented for evacuation]. Even if they don’t give us money, they should think up of a livable environment for us.”
- “There are people who want to move away but can’t. Why are they not getting any help?”
- “Why is the TEPCO compensation finishing after just two payments? I think every family is spending a lot – worrying about foods, getting away for spells to safer places for a change of air, doing decontamination and so on. Things like the toll-free highway scheme and the Fukushima Kids’ Project wound up last March, but I’d like to see them kept going, for the kids.”
- “I want to take them on short trips away, buy [safe] water, get them doing sports. But we haven’t got the money. There’s no way we can do all that without help.”

- “Compensation on its own isn’t enough. In my opinion, they ought to be giving more support for putting up infrastructure, like more indoor play venues. I know it costs money, but still. [...]”
- “I want people in other prefectures to know that the best way they can help us is to not forget about the Earthquake.”

6 About ⑥

Health impacts stemming from the deterioration of the life environment

(1) Children

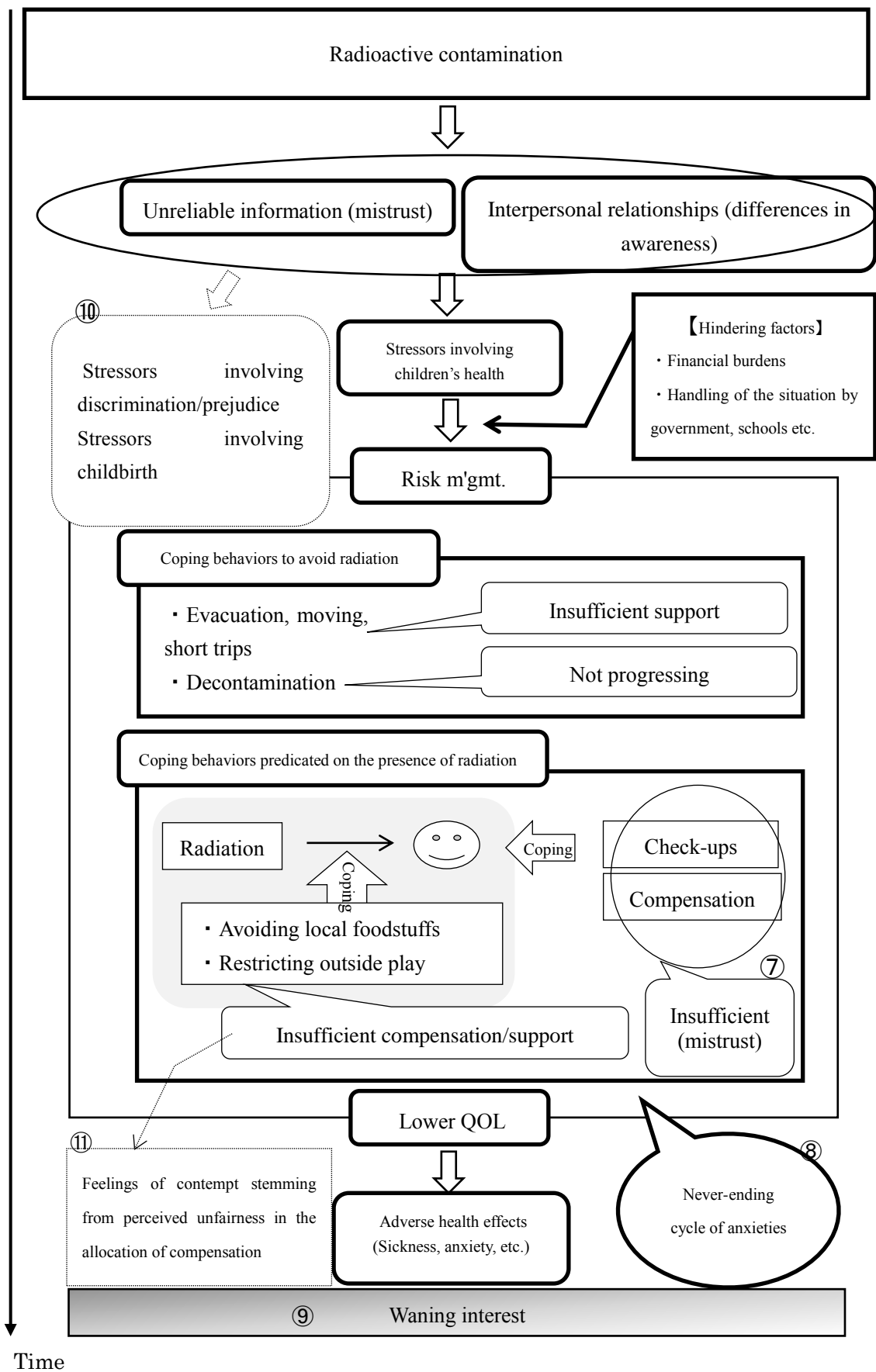
- “We moved to Tokyo for a while after the nuclear accident, and the family was split up. Our son got emotionally unstable. I went to lectures and so on, because I thought I had to do something for him. But the more I learned, the more oversensitive I became about my child’s behavior. He may have reached breaking point, because then he got ill. Ever since then I’ve had a silent resolution not to get too worked up about things as long as we’re living in Fukushima.”
- “It’s the little things I miss from before the accident – playing in our own garden, hanging out with the kids around, taking walks near our house, things like that. I feel sorry for our boy, too, now he can’t do those things either. He looks like he’s losing his strength quite a bit. He says ‘I’m tired’ the minute he does anything.”
- “Our oldest boy (8) has been in the house ever since he couldn’t play outside (getting really stressed), so he just sits around eating and playing video games. His weight has gone up since he doesn’t get the chance to move around. Now we’re able to play outside a little bit longer and longer, but if he keeps the same weight they’re going to check him for obesity, so I’d like to do something about it.”

(2) Parents

- “Compared to others, our area wasn’t all that badly hit by the earthquake, and the major worry for us is the radiation contamination. I’m from a farming family, and I worry tremendously about anything to do with food – I tend to get neurotic. Even if they say the [radiation] levels are “okay,” I’m the kind of person who can never really trust that – it makes me so nervous. There’s nobody around me who feels nervous like me – then I start thinking maybe it’s just me, and I start worrying that people are going to think I’m an idiot for worrying about nothing and I think I’m going to go crazy. So I sometimes just try to take my mind off it and think about something else.”
- “The boys aren’t able to play outside like they used to before, and I’m in poor condition too. Nothing good. [...] But when I’m with them, I try to keep a cheerful

face on for the boys.”

- “I was worried sick the entire six months after the Earthquake. I was drinking more and not getting enough sleep. That might be the reason I lost hearing in my left ear. The doctor told me it was Meniere’s disease. I’ve suffered from depression on and off since then because of that. But I was greatly encouraged when I came across [the writer and Buddhist monk] Gen’yu Sokyū’s phrase ‘Most of the harm people suffer from radiation is psychological.’ It isn’t TEPCO or the Earthquake that’s to blame for me losing the hearing in my left ear, but rather my own weak self. When I realized that, I started being able to think more positively, little by little. My ear has improved a lot now, and I’m having a nice life every day here in Fukushima.”



7 About ⑦

Feelings of distrust about examinations (check-ups) and the inadequacy of compensation, etc.

(1) Examinations

Insufficient:

- “Even if the results for your thyroid examination show high levels, they say it’s no problem to wait a year or two until the next check. Is it really all right to just leave things be that long?”
- “Every locality is doing thyroid examinations and stuff, but that won’t change the uneasiness we feel all the time, I think. If there was some easy way we could check our level every day at home, and some way we could often check how our thyroid glands are doing, I think that would go some way toward easing the tension we feel. I think everyone who has small kids has misgivings and fears, and I want them to be answered insofar as that’s possible.”

Distrust:

- “Our child got a thyroid echo [test] last November, they didn’t one show us – his guardians – the test screen or any image of the echo. Just a sheet of paper, where they put in ‘A1’ or ‘A2’ or whatever. I’m so consumed with distrust about it all. I don’t know what to believe. Apparently, most hospitals in the prefecture will turn down a second opinion request on ‘A2’ (Dr. Shunichi Yamashita at Fukushima Medical University put out a circular telling medical institutions to turn down any requests for this). There’s no other way to interpret this situation than people of Fukushima Prefecture being used as a data sample for exposure to radiation. At the very least they ought to help the children anyway if they can’t help the adults.”
- “The other day we got our oldest son’s thyroid results back at A2. He was diagnosed with growths, but it’s okay they said. Still, as a parent I think it’s anything but okay. I wanted another examination, but I was told they basically don’t do it, and you have to pay expensive medical fees out of your own pocket. The rumor is that all the hospitals are in it together. What I want people to know is that we just don’t know who or what to believe.”

(2) Compensation:

Insufficient:

- “I think I just have to face the fact that I’m going to live with worries every day. The biggest worry is about our child’s future. I don’t know what’s going to become of her. Is it really okay to stay on living here? What will happen to her if she gets sick? I suppose when you think about it there are lots of things that the government and TEPCO could do, but then when you see that the compensation

payment this time round is going to be the last, I ask myself what's going to happen when she grows up? How much money is her treatment going to take? I don't know. If by any chance she got sick, and she needed money, I think the treatment and the hospital time and hospital visits and so on would cost a lot more, and she wouldn't have enough!! They haven't even done the decontamination for our place yet, and even if we wanted to do it ourselves how are we supposed to pay for it?!! I really wonder is it all right to let things go on like this.

- “It's been almost two years since the accident and the nuclear accident is still costing us money (buying food they say is good for getting rid of radiation, getting hold of rice and vegetables from outside the prefecture, driving the kids to parks and places an hour there and back, paying for the gas, and we had to keep two places going for a while because we were evacuated). However much compensation we get (about 800,000 yen for the entire family), we won't get back the savings we had before the Earthquake, and we'll still be in the red. The anxiety caused by the Earthquake gave me mental disorders. But there I was, finally, back in society for the first time since giving birth, doing a job I liked and that I'd found for myself. But my illness left me unable to cope with it in society, and a year or so later I'm back here again, running down my savings even more. Right now, sometimes I'm all right and sometimes my illness flares up again. But I've been trying to restart my life right up to now. Even two years after, the ground around our house (before we did the decontamination ourselves as a couple) was still 20 microsieverts. The prefecture and city have started doing the decontamination at long last, but public facilities come first. They still haven't gotten around to us. Right now we're down to about 5 msv, but that's not a level you'd call normal, is it? Even though they're starting to get things back together in the areas that were hit by the tsunami, in our locality here we get treated like some kind of grey zone even though the radiation levels are so high (more or less the same as you get at hotspots). The subsidies we're getting from the national government and the prefecture, and the compensation from TEPCO – they don't compare to the worries we local people have.”

Distrust:

- “I worry that if anything happens to [our or our children's] health in the future, they're bound to feel that it's not linked to the nuclear accident. They're going to end up trying to fob us off with what little compensation money they've already handed out.”

8 About ⑧

Blocked in all directions:

- “After the accident, I often used to get together with the other moms and talk about things. We used to cry. I'd go to lectures and ask the lecturers questions. I

tried hard to rid myself of my fears. More and more of my friends and others I knew started leaving Fukushima, and I've thought so many times that I'd like to go myself – but there's my parents and my job. I've already given the idea up. No matter who I talk with, the discussion just goes round in circles. A place where we can talk about our worries? Now they're asking us? Do we need such a place, I wonder. I'd like to see them do something more positive, more fun – something that gives us the feeling that the future is going to be dazzling.”

- “Of course we have our worries about going on living here in Fukushima. I think if we leave we'll just run into another set of problems. So I just keep on going, not knowing what best to do. And that's giving me a lot of mental stress.”

9 About ⑨

Waning interest:

- “We've all been living under stress since the Earthquake, but gradually we've gotten used to our new lives. We don't worry too much about the radiation, and we let the kids play outside. We don't worry about food either – we eat plenty of things grown inside the prefecture.”
- “I'm no different myself, given the days and months that have passed since the nuclear accident, people are just living their normal everyday lives, and the7Re forgetting about the radiation. The whole nation should really come together as one to do the decontamination. I'm worried for the health of the children who aren't allowed to play outside very much. Our eldest boy has put on a lot of weight since the Earthquake. I've had him play softball at a youth sports club, but then I sometimes get worried, wondering is it all right to leave him out there practicing all the time without thinking about the radiation levels.”

10 About ⑩

A wide range of stressors other than those involving children's health

(1) Stressors involving discrimination and prejudice

- “Just after the Earthquake happened, the main damage I was worried about was the damage to our reputation. I thought the children had come through the Earthquake very well indeed, but then you'd hear stories about people writing ‘Go back home!’ on cars with Fukushima license plates,’ or being told ‘Don't bring you radiation here’ by people from outside the prefecture and so on. And in fact, when we went anywhere outside the prefecture, we were careful to hide our Fukushima accents. But if the children were to hear about what I've just written above, I don't know how I'd be able to explain it to them. [...]”
- “The main thing is our child's future. All I hope and pray for is that her future isn't

limited. In the future, she'll fly the nest, and maybe go to live outside the prefecture now and again. And I'm sure she'll have many chances to get to know people from outside the prefecture. I get so stressed out imagining her then, maybe getting singled out because she was born and raised in Fukushima, or her having to feel indebted [for the aid and support the prefecture has been given], or being the victim of prejudice, and getting hurt by that. To avoid that kind of thing happening, I hope and pray with all my heart that children outside the prefecture – and of course our own, too – will get the proper education and knowledge as they grow.”

(2) Stressors involving childbirth

- “I was pregnant when the Earthquake happened. Even though I was very worried, I stayed working at my job and living at our place. Given the circumstances, I can't deny that I took more childcare leave so as to spend more time with the kids. Even though we've chosen to live in Fukushima, I can't shake off my fears. Is it really okay to keep on living here? Will the children's future be okay? The only thing we can do is to keep going in the belief that we haven't made the wrong choice. Because there was no other way but for us to make this choice. [...] Even if we change our minds in the future, right now we're doing absolutely everything we can to stick with the decision we made then.”
- “Is it really okay for us to go on living our lives here? We've still got a mortgage, so we can't just pack up and leave. [...] But what happens then in the future if we look back and wish we had left? [...] I have friends with two kids and my older sister too. I'd actually like to have one more myself, but they tell me it's scary to get pregnant [now]. [...] I'm tired out. ”

11 About ⑪

Feeling of contempt toward others enjoying perceived favoritism in compensation

- “I think the people from the [coastal] evacuation areas [of Fukushima Prefecture] have a nice racket going, living off their compensation. There are [other] parts of Fukushima where the radiation levels are higher. I'm sorry for them of course that they can't live in their homes any longer, but that doesn't give them the right to hang out at amusement arcades and pachinko parlors all day. They ought to find themselves jobs. As a Fukushima person, I'm ashamed of them.”
- “I think that the people from the tsunami nuclear power [accident] evacuation areas are the lucky ones. They're rolling in money, killing their time gambling at the pachinko parlors. But us, we've still got our houses so everything's okay for us apparently. We don't need any help. Even though we're the same Fukushima people. I know [the people from the coastal areas] lost their homes, lost family,

and nothing could be worse than that. But the difference in the way they get treated compared to us is a complete scandal in my opinion.”

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References

- Adams, R.E, E.J. Bromet, N. Panina, E. Golovakha, D. Goldgaber and S. Gluzman, 2002, "*Stress and well-being in mothers of young children 11 years after the Chernobyl nuclear accident*", *Psychological Medicine*, 32: 143-156.
- Asada, Takashi, 2012, “Construction of post-disaster psychological support systems and the creation of disaster psychological support studies”, *Psychiatria et Neurologia Japonica* 114(3): 227-232. [in Japanese]
- Baker, Earl J, 1991, "*Hurricane Evacuation behavior*", *International Journal of Mass Emergencies and Disasters*, 9(2): 287-310.
- Barton, Allen H, 1969, *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*, Garden City, New York: Doubleday. (trans. 1974, Abe, Kitao, Gakuyo Shobo.)

- Branshaw, John and Joseph Trainor, 2010, "Race, Class and Capital Amidst the Hurricane Katrina Diaspora", David L. Brunson, David Overfelt, J. Steven Picou eds., *The Sociology of Katrina: Perspectives on a Modern Catastrophe*, Rowman and Littlefield Publishers Inc., 91-105.
- Bromet, Evelyn J, 2011, "Lessons Learned from Radiation Disasters", *World Psychiatry*, 10(2): 83-84.
- , J.M. Havenaar and L.T. Guey, 2011, "A 25 Year Retrospective Review of the Psychological Consequences of the Chernobyl Accident", *Clinical Oncology*, 23(4):297-305.
- Cutter, Susan R and Kent Barnes, 1982, "Evacuation behavior and Three Mile island", *Disasters*, 6(2): 116-124.
- , J. Voruff Bryan and Lynn Shirley, 2003, "Social Vulnerability to Environmental Hazards", *Social Science Quarterly*, 2003, 84(1): 242-261.
- Douglas, M and A. Wildavsky, 1983, *Risk and Culture: An Essay on the Selection of Technological And Environmental Dangers*, Berkeley: University of California Press.
- Erikson, Kai T, 1976, "Loss of Communitas at Buffalo Creek", *American Journal of Psychiatry*, 133(3): 302-305.
- , 1991, "Radiation's lingering dread", *The Bulletin of the Atomic Scientists*, 34-39.
- , 1994, "A new species of trouble", W.W. Norton & Company, New York-London.
- Gill, Tom, 2013, "When the relationship between the person and the place is broken: the meaning of the nuclear accident at Fukushima Daiichi and the hometown", Tom Gill, Brigitte Cittiga, David Slater, eds., *Anthropology of the Tohoku Earthquake: the Tsunami, the Nuclear Accident and the Aftermath for the Victims*, Jinbun Shoin, 201-238. [in Japanese]
- Naono, Akiko, 2011, *Radiation Exposure and Compensation: Hiroshima, Nagasaki, and Fukushima*, Heibonsha. [in Japanese]
- Havenaar, Johan M, Julie G, Cwikel and Evelyn J. Bromet, eds., 2002, *Toxic Turmoil: Psychological and Societal Consequences of Ecological Disasters*, Springer.
- , E.J. de Wilde, J. van den Bout, B.M. Drottz-Sjoberg and W. van den Brink, 2003 "Perception of Risk and Subjective Health among Victims of the Chernobyl Disaster", *Social Science & Medicine*, 56:569-572.
- Iijima, Nobuko, 1985, "Chapter 6: Harm and the Social Structure", Ui Jun, ed., *The Opening of Technology and Industry to the Public*, United Nations University, [in Japanese]
- , 1993, *Environmental Problems and Movements by the People Affected* (Revised Version), Hosei University Press, 147-171. [in Japanese]
- , 1995, *An Invitation to Environmental Sociology*, Maruzen Library.
- Ikeda, Yoko, 2013, "Contamination and 'safety': the construction of the concept of

- risk after the nuclear accident and the power of the reconstruction of Fukushima”, Tom Gill, Brigitte Cittiga, David Slater, eds., *Anthropology of the Tohoku Earthquake: the Tsunami, the Nuclear Accident and the Aftermath for the Victims*, Jinbun Shoin, 165-200. [in Japanese]
- Ishihara, Kunio, 2004, *Family Stress and Support*, Open University of Japan. [in Japanese]
- Imai, Akira, 2012, “How are we to think about the rebuilding of lives in Fukushima?: from a survey of the actual situation of the refugees from the nuclear power disaster”, *Kikan Seisaku Keiei Kenkyu*, 2:41-69. [in Japanese]
- Study Group on Traumatic Stress-Related Impacts, Kim Yoshiharu, ed., 2006, *The Understanding and Care of Mental Trauma*, (2nd ed.) Jiho. [in Japanese]
- Kaneko, Isamu, 2011, “From environmental collapse to societal regeneration: a sociological analysis of communal stress”, *Bulletin of the Graduate School of Letters, Hokkaido University*, 135:89-137. [in Japanese]
- Kirkbride, J.B, J. Boydell, G.B. Ploubidis, C. Morgan, P. Dazzan, K. McKenzie, B.M. Murray and P.B. Jones, 2008, "Testing the Association between the Incidence of Schizophrenia and Social Capital in an Urban Area", *Psychological Medicine*, 38: 1083-1094.
- Konishi, Takako, 2011, “Traumatized victims with no hopes for the future” *Japanese Journal of Clinical Psychiatry*, 40 (11): 1431-1437. [in Japanese]
- Lifton, Robert J, 1968, *Death in Life: Survivor of Hiroshima*, New York: Random House. (trans. 2009, Masui Michio, Yuasa Nobuyuki, Ochi Michio, and Matsuda Seishi, Iwanami Shoten.)
- Luhmann, N., 1991, *Soziologie des Risikos*, Walter de Gruyter. (trans. 1993, Barrett, R., *Risk: A Sociological Theory*, New York: Aldine De Gruyter.)
- Matsutani, Mitsuru, Sung, Woncheol, Ushijima, Kayo and Sakaguchi, Yusuke, 2014, The socially determining factors of “voluntary evacuation” in the wake of the Fukushima nuclear accident: as seen from a survey of mothers and their children in central Fukushima Prefecture”, *The Asia-Pacific Review*, 12, (in press) [in Japanese]
- • Ushijima, Kayo and Sung, Woncheol, 2013, “The socially determining factors of health stressors and risk-management behaviors in the wake of the Fukushima nuclear accident”, *Chukyo University Faculty of Contemporary Sociology Bulletin*, 7(1): 89-108. [in Japanese]
- • Ushijima, Kayo and Sung, Woncheol, 2014, “Awareness and behavior in the wake of the Fukushima nuclear accident, by local authority: 2013 survey findings from the Fukushima Children’s Health Project”, *Chukyo University Faculty of Contemporary Sociology Bulletin*, 7(2): 151-174 [in Japanese]
- Morioka, Rika, 2013, “Mothers standing up: women struggling between the passive masses and a paralyzed government”, Tom Gill, Brigitte Cittiga, David Slater, eds., *Anthropology of the Tohoku Earthquake: the Tsunami, the Nuclear Accident and the Aftermath for the Victims*, Jinbun Shoin, 239-268. [in Japanese]

- Norris, Fran H, Melissa Tracy and Sandro Galea, 2009, "*Looking for resilience: Understanding the longitudinal trajectories of responses to stress*", *Social Science & Medicine*, 68: 2190-2198.
- Ohta, Yasuyuki and Mine, Mariko, 2012, "Long-term progress of and psychological effects on radiation victims in Nagasaki City", *Psychiatry* 54(9): 871-880. [in Japanese]
- Picou, Steven J, Brent K. Marshall and Duane A. Gill, 2004, "*Disaster, Litigation and the Corrosive Community*", *Social Forces*, 82(4): 1493-1522.
- Raphael, Beverley, 1986, *When Disaster Strikes: How individuals and Communities Cope with Catastrophe*, New York: Basic Books, (trans. 1989, Ishimaru Tadashi, Misuzu Shobo.)
- and P. Maguire, 2009, "Disaster Mental Health Research: Past, Present, and Future", Y. Neria, S. Galea and F.H. Norris, eds., *Mental Health and Disasters*, Cambridge University Press.
- Rubin, G. James, Richard Amlot, Simon Wessely and Neil Greenberg, 2012, "*Anxiety, Distress and Anger among Nationals in Japan following the Fukushima Nuclear Accident*", *The British Journal of Psychiatry*, 201: 400-407.
- Saito, Tamaki, 2012a, *The Moment of Disaster: What March 11 Asks Us*, Chuko Shinsho. [in Japanese]
- , 2012b, *The Psychological Structure of Dependence on Nuclear Power: Why do Japanese People "Like" Nuclear Power?*, Shinchosha. [in Japanese]
- Sampson, Robert J, 2012, *Great American City: Chicago and the Enduring Neighborhood Effects*, Chicago: The University of Chicago Press.
- , 2003, "Neighborhood-level Context and Health: Lessons from Sociology", I. Kawachi & L.F. Berkman, eds., *Neighborhoods and Health*, New York: Oxford University Press.
- , S.W. Raudenbush and F. Earls, 1997, "*Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy*", *Science*, 277: 918-924.
- Sorokin, Pitirim A, 1942, *Man and Society in Calamity*, Dutton (trans. 1998, Oyane Junko and Fujita Hiroo, Bunka Shobo Hakubunsha.)
- Sung, Woncheol, 2014, "The wellbeing of children under the impact of radiation: as seen from a survey of the lives and health of parents and children in the Nakadori region in the wake of the Fukushima nuclear accident", *Bulletin of the Tokai Sociological Society*, 6: 7-24. [in Japanese]
- Ushijima, Kayo, Matsutani, Mitsuru and Sakaguchi, Yusuke, 2014, "Determining factors of the wellbeing of children under the impact of radiation: as seen from a survey of the lives and health of parents and children in the Nakadori region in the wake of the Fukushima nuclear accident", *Kankyo to Kogai*, 44(1): 41-47 [in Japanese]
- Ushijima, Kayo and Matsutani, Mitsuru, 2013, "A time of never-ending

- victimhood: health levels, risk-management behaviors and stressors for parents and children in nine localities in central Fukushima Prefecture after the nuclear accident”, *Chukyo University Faculty of Contemporary Sociology Bulletin*, 7(1): 109-167. [in Japanese]
- Beck, Ulrich, Suzuki, Muneori and Ito, Midori, eds., 2011, *Japanese Society at Increasing Risk: A Dialog with Ulrich Beck*, Iwanami Shoten [in Japanese]
- Ushijima, Kayo and Sung, Woncheol, 2013, “Comparative Japan-Korea research on child support networks and mothers’ health”, *Chukyo University Faculty of Contemporary Sociology Bulletin*, 7(1): 59-88. [in Japanese]
- Sung, Woncheol and Matsutani, Mitsuru, 2014, “Persistent related primary stress factors in the average day of child-raising mothers in central Fukushima Prefecture: as seen from a survey of the lives and health of parents and children in the wake of the nuclear accident”, *Stress Research*, 29 (in press). [in Japanese]”
- van den Berg, Bellis, Linda Grievink, Joris Yzermans and Erik Lebet, 2005, “*Medically Unexplained Physical Symptoms in the Aftermath of Disasters*”, *Epidemiologic Reviews*, 27: 92-106.
- Wada, Akira, Kunii, Yasuhito, Matsumoto, Junya, Itagaki, Shuntaro, Miura, Itaru, Masuko, Hirofumi, Yabe, Hirooki, and Niwa, Shin’ichi, 2011, “The situation of new psychiatric patient admissions in Fukushima Prefecture in the aftermath of the nuclear power plant accident”, *Clinical Psychiatry* 40 (11): 1423-1429. [in Japanese]
- Yoshioka, Touken, 2011, 2012, *If Only the Nuclear Accident Had Never Happened News*, Issues 1 to 4. [in Japanese]
- Yamakawa, Mitsuo, 2013, “In the nuclear disaster, and the pain of Fukushima’s recovery”, *Gakujutsu no Doko* 18 (2): 52-7. [in Japanese]