

# **Outline of Mental Health and Lifestyle Survey**

## **Reported on 7 February 2014**

### **1. Mental Health and Lifestyle Survey for FY 2013**

#### **1.1 Purpose**

The Great East Japan Earthquake on 11 March 2011 and the following accident at the Fukushima Daiichi Nuclear Power Plant brought the residents of Fukushima Prefecture psychological distress or Post-traumatic Stress Disorder (PTSD) caused by anxiety, evacuation, loss of property, and fearful experiences. The survey started in FY 2011 to assess the residents' mental health and lifestyle, and provide them with appropriate care.

As mental health services should involve medium- and long-term support, we will continue to conduct the survey to convey a strong message of ongoing care and support to the participants. Additionally, further support is needed based on understanding the changes in their situation that have occurred as well as the causes of these changes.

For the survey respondents requiring support, we will provide effective and efficient support by offering over-the-phone or other support services, as well as by promptly sharing participants' information with municipal governments and the Fukushima Center for Disaster Mental Health.

#### **1.2 Target population**

Residents of Evacuation Zones (when the 2011 survey was sent) as of 15 January 2014

(212,618 people)

[Evacuation Zones]

Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao, Iitate

Minamisoma, Tamura, Kawamata, part of Date (the area with a specific spot recommended for evacuation)

#### **1.3 Implementation Plan**

Survey forms (to be filled out by self or parent/guardian) are sent to the target population from early February 2014.

### 1.3-1 Classification

| Category           | Age Criteria                               | Method                      |
|--------------------|--|-----------------------------|
| Adults             | Born before 1 April 1998                   | Self-administered           |
| Middle school age  | Born between 2 April 1998 and 1 April 2001 | Partially self-administered |
| Primary school age | Born between 2 April 2001 and 1 April 2007 | Completed by parents        |
| 4-6 years          | Born between 2 April 2007 and 1 April 2010 | Completed by parents        |
| 0-3 years          | Born between 2 April 2010 and 1 April 2013 | Completed by parents        |

### 1.3-2 Survey Items

- Mental and physical health
- Lifestyle (diet, sleep, smoking, alcohol and exercise)
- Activities
- Living environment and relationships (for adults)

### 1.3-3 Support after the survey

- Doctors and other professionals at FMU will evaluate and analyse the survey responses. The Mental Health Support Team consisting of clinical psychiatrists, public health nurses and other professionals will provide phone or other forms of support to respondents determined to require counselling or support for mental health or lifestyle problems.
- Participants determined to require examination by a doctor will be referred to a registered physician (\*see next section) at a medical facility in the prefecture. Those requiring continued support will be connected to the municipal government of the area to which they evacuated and the Fukushima Center for Disaster Mental Health, where their support needs will be investigated and met.
- At the registered doctor's discretion, participants determined to require further professional mental health care will be handled by FMU and cooperating institutions in the normal course of treatment. Specifically, children will be handled at the Children's Mental Health Treatment Center and all others will be handled in the Department of Psychosomatic Medicine at FMU.

- The Mental Health Support Team will offer information and advice about radiation to participants, and those participants determined to require assistance from a particular relevant specialist will be handled by the Radiation Health Consultation Team comprised of professors from the medical university. If an individual inquiring about the health effects of radiation or some other issue needs to have a medical examination, specialist doctors and other professionals will determine the course of action.

## **2. Participants of the Interview Survey for FY 2013 (as of 31 December 2013)**

- 28 out of about 30 respondents of the Mental Health and Lifestyle Survey for FY 2012
- 4 out of 20 patients of psychiatric hospitals or clinics within the prefecture

## **3. Registered Physicians**

Registered physicians are psychiatrists or pediatricians who provide services to participants determined to require healthcare services based on the Mental Health and Lifestyle Survey.

To be eligible for registration, a psychiatrist or a pediatrician needs to attend the accredited workshops held by FMU. The number of registrants is 145 from 84 medical institutions as of 31 December 2013.

# Mental Health and Lifestyle Survey for FY 2012

## 1. Purpose

The survey responses were analyzed by doctors and other professionals at FMU. A Mental Health Support Team consisting of clinical psychologists, public health nurses and others performed consultations to those determined to require counseling or support for mental health or lifestyle problems.

## 2. Methods

### 2.1. Target for support

Targets of the FY 2012 survey were residents of nationally designated evacuation zones, who were born before 1 April 2012. Based on the criteria below, 1,474 children were eligible for support and 674 of them were offered telephone counseling, and 800 were sent written support materials. Among the 800 children, 41 were determined to require telephone counseling based on the completed written materials.

The number of adult respondents requiring support was 16,242. Of these, 6,074 required telephone counseling and 10,168 required written support materials. Based on the completed written materials, 701 respondents were determined to require telephone counseling, whereas 2,657 met only the CAGE criteria for identification of alcoholism.

If the participants could not be reached for telephone support (except for the deceased) due to absence, information was provided by sending booklets: *Mental Health Support for Disaster Victims and Their Families*, *Lifestyle Checklist*, and *Prevention of Nursing Care*. To those who only met the criteria of CAGE test scores, *Drinking and Mental Health* was distributed.

### 2.2 Criteria for Support

#### Telephone Counseling

Respondents who required support were identified on the basis of the survey results. Members of the mental health support team selected the candidates based on the scores or the content of free-answer questions.

Respondents who required support (A):

- Children with SDQ score  $\geq 20$ , adults with K6 score  $\geq 17$  or PCL score  $\geq 61$ .

Respondents who required support (B):

- Children and adults identified based on the content of free-answer questions.
- Adults with a previous history of hypertension or diabetes who have not received treatment

with a BMI  $\geq 30$  (calculated from weight and height written in the survey) and a weight gain of  $\geq 3$  kg after the disaster.

- Adults with a history of mental disorders who are not currently visiting a clinic.

### **Written materials**

Respondents requiring support were sent written materials including a response card. In accordance with their will or free-answer question content, telephone counseling was provided.

Respondents who required support (A):

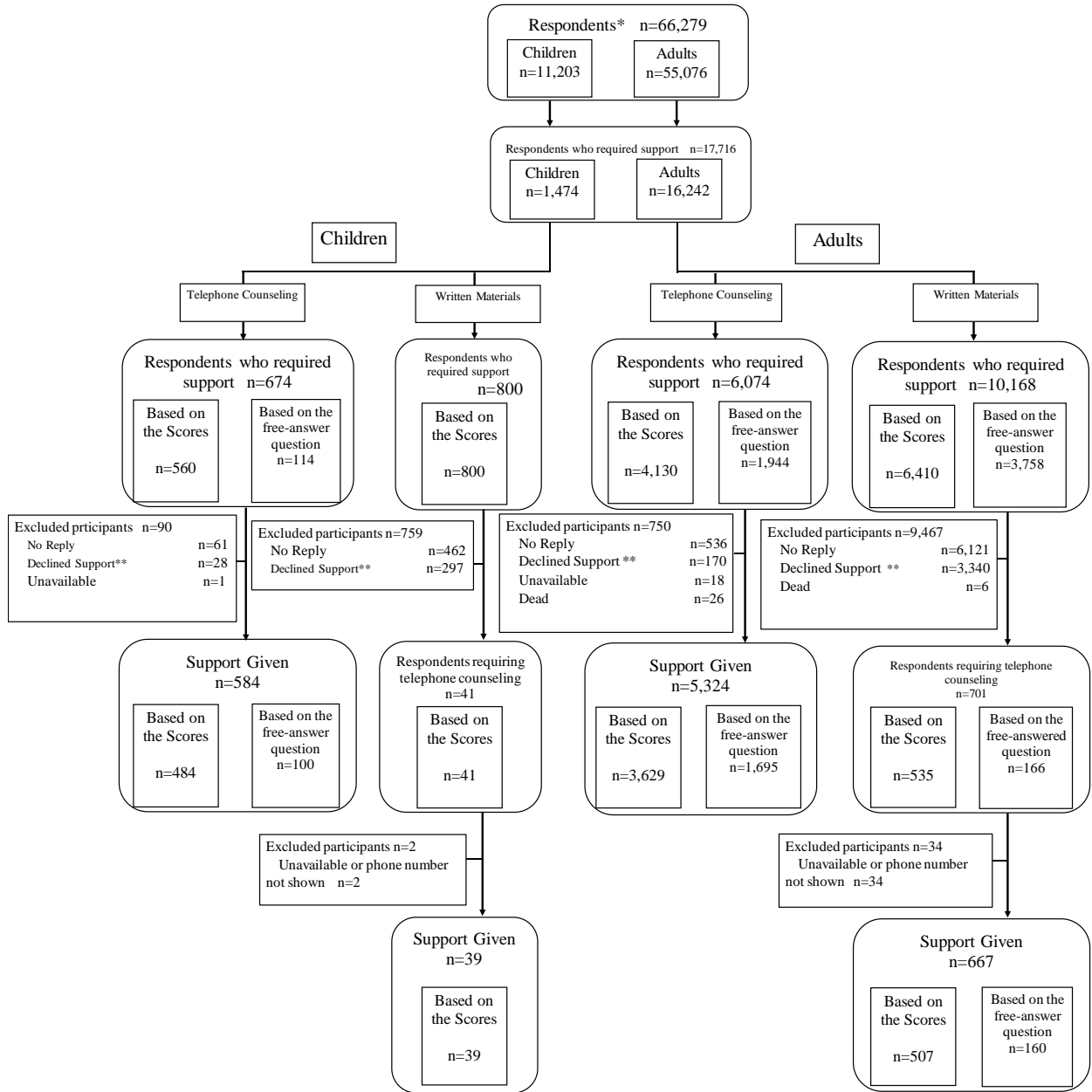
- Children with SDQ score  $\geq 16$  and adults with K6 score  $\geq 13$  or PCL score  $\geq 44$ , who did not meet the criteria for telephone counseling.

Respondents who required support (B):

- Children: No criteria.
- Adults who neither meet the above criteria nor receive medical treatment with sleep disorder, depression and decreased activity.
- Adults with CAGE score  $\geq 2$  out of 4.

### 2.3. Numbers of respondents requiring support and the support provided

The figure excludes participants who only met the criteria of CAGE test scores.



\* As of 31 October 2013

\*\* Participants who declined support in the response card.

Figure 1: Number of participants required support and the support provided

## **2.4. Categories of Results and Continued Support**

The results of the telephone counseling were categorized into four groups: Follow-up 1, 2, 3, and 'Declined support'. Those requiring continued support were given telephone counseling or information by FMU, municipal governments and Fukushima Center for Disaster Mental Health. Participants determined to require examination by a doctor were referred to a registered physician.

### **Categories of results**

Follow-up 1: Participants confirmed to be improving or self-managing their problems.

Follow-up 2: Participants not recovering from health problems, the emotional aftermath, adjustment problems etc.

Follow-up 3: Participants whose status could not be confirmed.

Declined support: Participants clearly conveyed that they did not need support.

### **Continued Support**

Follow-up: Participants requiring continued telephone counseling.

Municipal government: Participants required to be connected to municipal government.

Referral: Participants sent a referral to registered doctors.

Sent list of registered doctors within Fukushima:

Participants sent information of registered doctors.

Sent information of medical institutions outside prefecture:

Participants sent information of institutions outside prefecture for support.

Handled by other departments:

Participants required to be handled by the departments of Basic Survey, Thyroid Ultrasound Examination of FMU Radiation Medical Science Center.

## **3. Results (Children)**

Since SDQ is for children aged 4 years and older, children aged 0-3 years old were determined on the basis of the free-answer question and not included in the participants requiring written support materials. Because few participants who had been sent written materials had telephone counseling (12 of age 4-6 years, 19 of primary school age, 8 of middle school age), the following result combines participants requiring telephone counseling with the number determined to require phone support based on the written materials.

### 3.1 Status of Respondents Requiring Support

A total of 715 children required support; 674 of them needed telephone counseling and 41 were determined to require support on the basis of the written support materials. Of these, 406 (56.8%) were male and 309 (43.2%) were female. Phone support was successfully provided to 623 (87.1%) of the total.

Respondents living within Fukushima were 408(65.5%) and 215(34.5%) were living outside Fukushima. (Table 1)

Table 1 Status of children requiring support (By sex and area)

| Participants requiring support | Total<br>715 | 0-3 years<br>21 | 4-6 years<br>161 | Primary school age<br>367 | Middle school age<br>166 |
|--------------------------------|--------------|-----------------|------------------|---------------------------|--------------------------|
| Male                           | 406 (56.8)   | 8 (38.1)        | 89 (55.3)        | 227 (61.9)                | 82 (49.4)                |
| Female                         | 309 (43.2)   | 13 (61.9)       | 72 (44.7)        | 140 (38.1)                | 84 (50.6)                |
| Support Given                  | 623          | 19              | 138              | 317                       | 149                      |
| Within Fukushima               | 408 (65.5)   | 13 (68.4)       | 94 (68.1)        | 194 (61.2)                | 107 (71.8)               |
| Outside Fukushima              | 215 (34.5)   | 6 (31.6)        | 44 (31.9)        | 123 (38.8)                | 42 (28.2)                |

Values in the table are expressed as n (%).

Because there were few children required written support materials, the breakdown is not shown.

The number of support given includes participants who were provided telephone counseling.



### 3.2 Participants' state of health

We asked participants over the phone about their physical condition, sleep, and the medical institutions they are treated.

Table 2 Participants' state of health

| Number of support given                             | Total<br>623 | 0-3 years<br>19 | 4-6 years<br>138 | Primary school age<br>317 | Middle school age<br>149 |
|---|--------------|-----------------|------------------|---------------------------|--------------------------|
| <b>Physical condition</b>                           |              |                 |                  |                           |                          |
| Improved  | 119 (21.8)   | 3 (18.8)        | 24 (19.5)        | 59 (21.5)                 | 33 (24.8)                |
| No change   | 216 (39.6)   | 7 (43.7)        | 49 (39.9)        | 105 (38.4)                | 55 (41.3)                |
| Worse   | 24 (4.4)     | 0 (0.0)         | 3 (2.4)          | 16 (5.8)                  | 5 (3.8)                  |
| Have not had problems                               | 187 (34.2)   | 6 (37.5)        | 47 (38.2)        | 94 (34.3)                 | 40 (30.1)                |
| Unclear   | 77 -         | 3 -             | 15 -             | 43 -                      | 16 -                     |
| <b>Sleep disorders</b>                              |              |                 |                  |                           |                          |
| Improved  | 60 (11.7)    | 2 (13.3)        | 14 (11.9)        | 25 (9.8)                  | 19 (15.2)                |
| No change   | 186 (36.2)   | 6 (40.0)        | 40 (33.9)        | 84 (32.8)                 | 56 (44.8)                |
| Worse   | 10 (1.9)     | 0 (0.0)         | 2 (1.7)          | 4 (1.6)                   | 4 (3.2)                  |
| Have not had problems                               | 258 (50.2)   | 7 (46.7)        | 62 (52.5)        | 143 (55.8)                | 46 (36.8)                |
| Unclear   | 109 -        | 4 -             | 20 -             | 61 -                      | 24 -                     |
| <b>Clinic treatment</b>                             |              |                 |                  |                           |                          |
| Departments of psychiatry or psychosomatic medicine | 50 (10.1)    | 0 (0.0)         | 16 (14.3)        | 20 (7.9)                  | 14 (10.9)                |
| Other   | 105 (21.3)   | 2 (100.0)       | 24 (21.4)        | 58 (23.0)                 | 21 (16.4)                |
| None  | 339 (68.6)   | 0 (0.0)         | 72 (64.3)        | 174 (69.1)                | 93 (72.7)                |
| Unclear   | 129 -        | 17 -            | 26 -             | 65 -                      | 21 -                     |
| <b>Contact with institutions for counseling</b>     |              |                 |                  |                           |                          |
| Yes   | 112 (24.1)   | 9 (69.2)        | 25 (24.8)        | 43 (18.5)                 | 35 (29.7)                |
| No  | 353 (75.9)   | 4 (30.8)        | 76 (75.2)        | 190 (81.5)                | 83 (70.3)                |
| Unclear   | 158 -        | 6 -             | 37 -             | 84 -                      | 31 -                     |
| <b>Depression</b>                                   |              |                 |                  |                           |                          |
| Yes   | 99 (20.8)    | 0 (0.0)         | 9 (9.0)          | 48 (20.0)                 | 42 (34.1)                |
| No  | 376 (79.2)   | 12 (100.0)      | 91 (91.0)        | 192 (80.0)                | 81 (65.9)                |
| Unclear   | 148 -        | 7 -             | 38 -             | 77 -                      | 26 -                     |
| <b>Reaction to earthquake</b>                       |              |                 |                  |                           |                          |
| Severe  | 72 (16.0)    | 1 (8.3)         | 26 (24.8)        | 35 (15.8)                 | 10 (9.0)                 |
| Mild  | 126 (28.0)   | 1 (8.3)         | 33 (31.4)        | 70 (31.5)                 | 22 (19.8)                |
| None  | 252 (56.0)   | 10 (83.4)       | 46 (43.8)        | 117 (52.7)                | 79 (71.2)                |
| Unclear   | 173 -        | 7 -             | 33 -             | 95 -                      | 38 -                     |
| <b>Adjustment disorder</b>                          |              |                 |                  |                           |                          |
| No symptoms   | 467 (90.0)   | 4 (80.0)        | 102 (95.3)       | 254 (93.7)                | 107 (78.7)               |
| Symptoms present                                    | 52 (10.0)    | 1 (20.0)        | 5 (4.7)          | 17 (6.3)                  | 29 (21.3)                |
| Unclear   | 104 -        | 14 -            | 31 -             | 46 -                      | 13 -                     |

Values in the table are expressed as n (%).

The participants who did not mention the issue go to 'Unclear' category.

Proportions do not include the number of 'Unclear'.

Comparing participants' physical condition with 1 year ago, 119 (21.8%) saw improvement, 216 (39.6%) saw no changes, 24 (4.4%) became worse, 187 (34.2%) have not had problems so far.

Asked about their sleep, 60 (11.7%) saw improvement, 186 (36.2%) saw no changes, 10 (1.9%) became worse, 258 (50.2%) have not have problems so far.

As for medical institutions, 50 (10.1%) were treated by psychiatrists or psychosomatic medicine specialists, 105 (21.3%) were treated by other specialists, and 339 (68.6%) did not see a doctor.

### 3.3 Telephone counseling

The results of the support were categorized into 'Follow-up 1', 'Follow-up 2', 'Follow-up 3', and 'Declined Support' as was the case in FY 2011. The breakdown below shows the criteria of 'Follow-up 2'. The proportion is the ratio to 'Follow-up 2'.

Table 3: Results of Support given (Children)

| Number of support given                             | Total<br>623 | 0-3 years<br>19 |         | 4-6 years<br>138 |        | Primary school age<br>317 |        | Middle school age<br>149 |        |
|---|--------------|-----------------|---------|------------------|--------|---------------------------|--------|--------------------------|--------|
| Follow-up 1   | 528 (84.7)   | 19              | (100.0) | 128              | (92.8) | 267                       | (84.2) | 114                      | (76.5) |
| Follow-up 2   | 82 (13.2)    | 0               | (0.0)   | 9                | (6.5)  | 41                        | (12.9) | 32                       | (21.5) |
| Follow-up 3   | 7 (1.1)      | 0               | (0.0)   | 1                | (0.7)  | 5                         | (1.6)  | 1                        | (0.7)  |
| Declined support                                    | 6 (1.0)      | 0               | (0.0)   | 0                | (0.0)  | 4                         | (1.3)  | 2                        | (1.3)  |
| <b>Continued Support</b>                            |              |                 |         |                  |        |                           |        |                          |        |
| Follow-up   | 27 (4.3)     | 0               | (0.0)   | 6                | (4.3)  | 10                        | (3.2)  | 11                       | (7.4)  |
| Municipal government                                | 0 (0.0)      | 0               | (0.0)   | 0                | (0.0)  | 0                         | (0.0)  | 0                        | (0.0)  |
| Referral  | 0 (0.0)      | 0               | (0.0)   | 0                | (0.0)  | 0                         | (0.0)  | 0                        | (0.0)  |
| Sent list of registered doctors                     | 6 (1.0)      | 0               | (0.0)   | 1                | (0.7)  | 3                         | (0.9)  | 2                        | (1.3)  |
| Sent list of medical institutions outside Fukushima | 3 (0.5)      | 0               | (0.0)   | 0                | (0.0)  | 0                         | (0.0)  | 3                        | (2.0)  |
| Handled by other departments                        | 5 (0.8)      | 1               | (5.3)   | 0                | (0.0)  | 2                         | (0.6)  | 2                        | (1.3)  |

Values in the table are expressed as n (%).

Table 4: Breakdown of ‘Follow-up 2’

| Number              | Total     | 0-3 years |         | 4-6 years |          | Primary school age |           | Middle school age |  |
|---------------------|-----------|-----------|---------|-----------|----------|--------------------|-----------|-------------------|--|
|                     | 82        | 0         | 0       | 9         | 9        | 41                 | 32        |                   |  |
| Physical Problems   | 16 (19.5) | 0 (0.0)   | 0 (0.0) | 2 (22.2)  | 2 (22.2) | 7 (17.1)           | 7 (21.9)  |                   |  |
| Mental Problems     | 47 (57.3) | 0 (0.0)   | 0 (0.0) | 4 (44.4)  | 4 (44.4) | 23 (56.1)          | 20 (62.5) |                   |  |
| Emotional aftermath | 11 (13.4) | 0 (0.0)   | 0 (0.0) | 2 (22.2)  | 2 (22.2) | 3 (7.3)            | 6 (18.8)  |                   |  |
| Adjustment disorder | 27 (32.9) | 0 (0.0)   | 0 (0.0) | 2 (22.2)  | 2 (22.2) | 9 (22.0)           | 16 (50.0) |                   |  |
| Isolation           | 10 (12.2) | 0 (0.0)   | 0 (0.0) | 2 (22.2)  | 2 (22.2) | 5 (12.2)           | 3 (9.4)   |                   |  |

Values in the table are expressed as n (%).

After the telephone counseling, 528 (84.7%) were designated as ‘Follow-up 1’, 82 (13.2%) as ‘Follow-up 2’, 7 (1.1%) as ‘Follow-up 3’, and 6 (1.0%) as ‘Declined Support’. For continued support, 27 were designated as ‘Follow-up’, 6 were sent list of registered doctors within Fukushima, 3 were sent list of medical institutions outside Fukushima, and 5 were handled by other departments. (Table 3)

The reasons for ‘Follow-up 2’ were categorized into the following: 16 for physical health problems, 47 for mental health problems, 11 for emotional sequelae, 27 for adjustment problems, and 10 for isolation. (Table 4)

### 3.4 Problems faced by participants

Since the Mental Health and Lifestyle Survey in FY 2011, we have used analytic induction to investigate problems faced by participants. They fall into four broad categories: child’s reaction, parent/guardian and family problems, school and neighborhood relationships, and environment. Child’s reaction and parent/guardian and family problems divide into subcategories. Figure 2 is the revised conceptual diagram of those problems.

The content of the respondents’ problems mentioned for the FY 2012 survey were categorized based on the categories from the survey for FY2011. Frequently mentioned problems were reaction to earthquake and radiation, impact on school, parent/guardian’s problems, and family relationship.

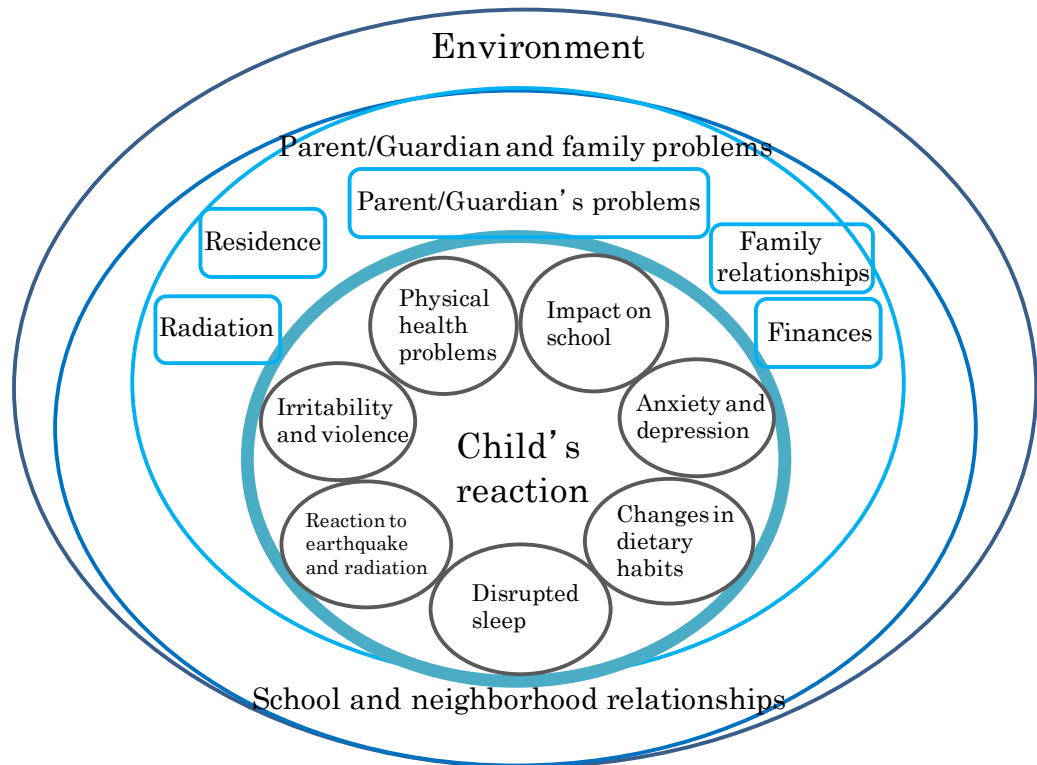


Figure 2: Conceptual diagram of problems faced by participants (children)

## 4. Result (Adults)

### 4.1 Status of Respondents Requiring Support

#### Telephone Counseling

A total of 6,074 required telephone counseling. Among the 4,130 participants identified on the basis of the scores, 1,595 (38.6%) were male and 2,535 (61.4%) were female. 1,944 participants were determined on the basis of free-answer question. Of these, 688 (35.4%) were male and 1,256 (64.6%) were female. (Table 5)

The support was provided to 5,324 (87.7%). Among the participants, 4,277 (80.3%) lived within Fukushima and 1,047 (19.7%) lived outside Fukushima. (Table 6)

Table 5: Participants requiring telephone counseling (By sex and age group)

| Age group | Based on the scores |              |              |  | Based on the free-answer question |            |              |  |
|-----------|---------------------|--------------|--------------|--|-----------------------------------|------------|--------------|--|
|           | Total               | Male         | Female       |  | Total                             | Male       | Female       |  |
| 15-19     | 82                  | 33 (40.2)    | 49 (59.8)    |  | 36                                | 12 (33.3)  | 24 (66.7)    |  |
| 20-29     | 191                 | 65 (34.0)    | 126 (66.0)   |  | 128                               | 33 (25.8)  | 95 (74.2)    |  |
| 30-39     | 366                 | 142 (38.8)   | 224 (61.2)   |  | 273                               | 75 (27.5)  | 198 (72.5)   |  |
| 40-49     | 344                 | 148 (43.0)   | 196 (57.0)   |  | 239                               | 89 (37.2)  | 150 (62.8)   |  |
| 50-59     | 550                 | 219 (39.8)   | 331 (60.2)   |  | 365                               | 127 (34.8) | 238 (65.2)   |  |
| 60-69     | 893                 | 376 (42.1)   | 517 (57.9)   |  | 442                               | 185 (41.9) | 257 (58.1)   |  |
| 70-79     | 1,125               | 423 (37.6)   | 702 (62.4)   |  | 286                               | 106 (37.1) | 180 (62.9)   |  |
| 80-       | 579                 | 189 (32.6)   | 390 (67.4)   |  | 175                               | 61 (34.9)  | 114 (65.1)   |  |
| Total     | 4,130               | 1,595 (38.6) | 2,535 (61.4) |  | 1,944                             | 688 (35.4) | 1,256 (64.6) |  |

Values in the table are expressed as n (%).

Ages as of 1 April 2012

Table 6: Participants requiring telephone counseling (By area)

| Area of residence | Support given | Based on the scores |  | Based on the free-answer question |  |
|-------------------|---------------|---------------------|--|-----------------------------------|--|
|                   | 5,324         | 3,629               |  | 1,695                             |  |
| Within Fukushima  | 4,277 (80.3)  | 2,912 (80.2)        |  | 1,365 (80.5)                      |  |
| Outside Fukushima | 1,047 (19.7)  | 717 (19.8)          |  | 330 (19.5)                        |  |

Values in the table are expressed as n (%).

The number includes participants who were provided telephone counseling.

## Written Materials

Among the participants requiring written support materials, a total of 701 required telephone counselling. Out of the 535 participants identified on the basis of the scores, 242 (45.2%) were male and 293 (54.8%) were female. 166 participants were determined on the basis of the free-answer question. Of these, 92 (55.4%) were male and 74 (44.6%) were female. (Table 7)

The telephone counseling was provided to 667 (95.1%). Of these, 533 (79.9%) lived within Fukushima and 134 (20.1%) lived outside Fukushima. (Table 8)

Table 7: Participants requiring written materials (By sex and age group)

| Age group | Based on the scores |            |            | Based on the free-answer question |           |           |
|-----------|---------------------|------------|------------|-----------------------------------|-----------|-----------|
|           | Total               | Male       | Female     | Total                             | Male      | Female    |
| 15-19     | 1                   | 1 (100.0)  | 0 (0.0)    | 1                                 | 1 (100.0) | 0 (0.0)   |
| 20-29     | 14                  | 4 (28.6)   | 10 (71.4)  | 2                                 | 1 (50.0)  | 1 (50.0)  |
| 30-39     | 33                  | 12 (36.4)  | 21 (63.6)  | 12                                | 6 (50.0)  | 6 (50.0)  |
| 40-49     | 35                  | 11 (31.4)  | 24 (68.6)  | 20                                | 7 (35.0)  | 13 (65.0) |
| 50-59     | 53                  | 27 (50.9)  | 26 (49.1)  | 24                                | 15 (62.5) | 9 (37.5)  |
| 60-69     | 127                 | 59 (46.5)  | 68 (53.5)  | 47                                | 29 (61.7) | 18 (38.3) |
| 70-79     | 180                 | 88 (48.9)  | 92 (51.1)  | 36                                | 21 (58.3) | 15 (41.7) |
| 80-       | 92                  | 40 (43.5)  | 52 (56.5)  | 24                                | 12 (50.0) | 12 (50.0) |
| Total     | 535                 | 242 (45.2) | 293 (54.8) | 166                               | 92 (55.4) | 74 (44.6) |

Values in the table are expressed as n (%).

Ages as of 1 April 2012

Table 8: Participants requiring written support materials (By area)

| Area of residence | Support given | Based on the scores |            | Based on the free-answer question |  |
|-------------------|---------------|---------------------|------------|-----------------------------------|--|
|                   | 667           | 507                 |            | 160                               |  |
| Within Fukushima  | 533 (79.9)    | 403 (79.5)          | 130 (81.2) |                                   |  |
| Outside Fukushima | 134 (20.1)    | 104 (20.5)          | 30 (18.8)  |                                   |  |

Values in the table are expressed as n (%).

The number includes participants who were provided telephone counseling.

## 4.2 Participants' state of health

### Telephone Counseling

We asked participants about their physical condition, sleep, and the medical institutions where they are treated.

Table 9: Participants' state of health

| Number of support given                             | Total |        | Based on the scores |        | Based on the free-answer question |        |
|---|-------|--------|---------------------|--------|-----------------------------------|--------|
|   | 5,324 |        | 3,629               |        | 1,695                             |        |
| <b>Physical condition</b>                           |       |        |                     |        |                                   |        |
| Improved  | 1,095 | (21.3) | 630                 | (18.0) | 465                               | (28.3) |
| No change   | 2,982 | (58.0) | 2,105               | (60.3) | 877                               | (53.3) |
| Worse   | 686   | (13.4) | 570                 | (16.3) | 116                               | (7.1)  |
| Have not had problems                               | 373   | (7.3)  | 187                 | (5.4)  | 186                               | (11.3) |
| Unclear   | 188   | -      | 137                 | -      | 51                                | -      |
| <b>Sleep disorders</b>                              |       |        |                     |        |                                   |        |
| Improved  | 1,076 | (21.4) | 673                 | (19.8) | 403                               | (25.0) |
| No change   | 3,241 | (64.6) | 2,279               | (67.0) | 962                               | (59.5) |
| Worse   | 265   | (5.3)  | 212                 | (6.2)  | 53                                | (3.3)  |
| Have not had problems                               | 436   | (8.7)  | 239                 | (7.0)  | 197                               | (12.2) |
| Unclear   | 306   | -      | 226                 | -      | 80                                | -      |
| <b>Clinic treatment</b>                             |       |        |                     |        |                                   |        |
| Departments of psychiatry or psychosomatic medicine | 555   | (11.1) | 442                 | (13.0) | 113                               | (7.1)  |
| Other   | 3,346 | (67.1) | 2,426               | (71.3) | 920                               | (57.9) |
| None  | 1,090 | (21.8) | 534                 | (15.7) | 556                               | (35.0) |
| Unclear   | 333   | -      | 227                 | -      | 106                               | -      |
| <b>Contact with institutions for counseling</b>     |       |        |                     |        |                                   |        |
| Yes   | 859   | (21.5) | 370                 | (13.6) | 489                               | (38.8) |
| No  | 3,130 | (78.5) | 2,359               | (86.4) | 771                               | (61.2) |
| Unclear   | 1,335 | -      | 900                 | -      | 435                               | -      |
| <b>Depression</b>                                   |       |        |                     |        |                                   |        |
| Yes   | 2,025 | (42.0) | 1,658               | (50.6) | 367                               | (23.8) |
| No  | 2,793 | (58.0) | 1,620               | (49.4) | 1,173                             | (76.2) |
| Unclear   | 506   | -      | 351                 | -      | 155                               | -      |
| <b>Reaction to earthquake</b>                       |       |        |                     |        |                                   |        |
| Severe  | 211   | (5.4)  | 176                 | (6.7)  | 35                                | (2.7)  |
| Mild  | 578   | (14.8) | 480                 | (18.3) | 98                                | (7.7)  |
| None  | 3,120 | (79.8) | 1,973               | (75.0) | 1,147                             | (89.6) |
| Unclear   | 1,415 | -      | 1,000               | -      | 415                               | -      |

Values in the table are expressed as n (%).

The participants who did not mention the issue go to 'Uncertain' category.

Proportion does not include the number of 'Unclear'.

Comparing physical conditions with 1 year ago, 1,095 (21.3%) saw improvement, 2,982 (58.0%) saw no changes, 686 (13.4%) became worse, and 373 (7.3%) have not had problems so far.

Asked about their sleep, 1,076 (21.4%) saw improvement, 3,241 (64.6%) saw no changes, 265 (5.3%) became worse, 436 (8.7 %) have not had problems so far.

As for clinics, 555 (11.1%) were treated by psychiatrists or psychosomatic medicine specialists, 3,346 (67.1%) were treated by other specialists, and 1,090 (21.8%) did not see a doctor.



## Written materials

We asked participants about their physical condition, sleep, and what medical institutions they visit for consultation.

Table 10: Participants' state of health

| Number of support given                             | Total |        | Based on the scores |        | Based on the free-answer question |        |
|---|-------|--------|---------------------|--------|-----------------------------------|--------|
|   | 667   |        | 507                 |        | 160                               |        |
| <b>Physical condition</b>                           |       |        |                     |        |                                   |        |
| Improved  | 103   | (16.2) | 70                  | (14.7) | 33                                | (20.8) |
| No change   | 387   | (61.0) | 301                 | (63.2) | 86                                | (54.0) |
| Worse   | 100   | (15.7) | 77                  | (16.2) | 23                                | (14.5) |
| Have not had problems                               | 45    | (7.1)  | 28                  | (5.9)  | 17                                | (10.7) |
| Unclear   | 32    | -      | 31                  | -      | 1                                 | -      |
| <b>Sleep disorders</b>                              |       |        |                     |        |                                   |        |
| Improved  | 77    | (12.8) | 55                  | (12.4) | 22                                | (14.2) |
| No change   | 428   | (71.4) | 325                 | (73.0) | 103                               | (66.5) |
| Worse   | 24    | (4.0)  | 19                  | (4.3)  | 5                                 | (3.2)  |
| Have not had problems                               | 71    | (11.8) | 46                  | (10.3) | 25                                | (16.1) |
| Unclear   | 67    | -      | 62                  | -      | 5                                 | -      |
| <b>Clinic treatment</b>                             |       |        |                     |        |                                   |        |
| Departments of psychiatry or psychosomatic medicine | 49    | (7.8)  | 43                  | (9.2)  | 6                                 | (3.8)  |
| Other   | 457   | (73.2) | 367                 | (78.2) | 90                                | (57.7) |
| None  | 119   | (19.0) | 59                  | (12.6) | 60                                | (38.5) |
| Unclear   | 42    | -      | 38                  | -      | 4                                 | -      |
| <b>Contact with institutions for counseling</b>     |       |        |                     |        |                                   |        |
| Yes   | 99    | (24.7) | 41                  | (15.7) | 58                                | (41.4) |
| No  | 302   | (75.3) | 220                 | (84.3) | 82                                | (58.6) |
| Unclear   | 266   | -      | 246                 | -      | 20                                | -      |
| <b>Depression</b>                                   |       |        |                     |        |                                   |        |
| Yes   | 152   | (27.1) | 122                 | (29.8) | 30                                | (19.9) |
| No  | 408   | (72.9) | 287                 | (70.2) | 121                               | (80.1) |
| Unclear   | 107   | -      | 98                  | -      | 9                                 | -      |
| <b>Reaction to earthquake</b>                       |       |        |                     |        |                                   |        |
| Severe  | 10    | (2.2)  | 8                   | (2.5)  | 2                                 | (1.6)  |
| Mild  | 40    | (8.8)  | 37                  | (11.4) | 3                                 | (2.3)  |
| None  | 403   | (89.0) | 279                 | (86.1) | 124                               | (96.1) |
| Unclear   | 214   | -      | 183                 | -      | 31                                | -      |

Values in the table are expressed as n (%).

The participants who did not mention the issue go to 'Uncertain' category.

Proportions do not include the number of 'Unclear'.

Comparing the physical condition with 1 year ago, 103 (16.2%) saw improvement, 387 (61.0%) saw no changes, 100 (15.7%) became worse, 45 (7.1%) have not had problems so far.

Asked about their sleep, 77 (12.8%) saw improvement, 428 (71.4%) saw no changes, 24 (4.0%) became worse, 71 (11.8%) have not had problems so far.

As for clinics, 49 (7.8%) were treated by psychiatrists or psychosomatic medicine specialists, 457 (73.2%) were treated by other specialists, and 119 (19.0%) did not see a doctor.

### 4.3 Results of telephone counseling

The results of the support were categorized into ‘Follow-up 1’, ‘Follow-up 2’, ‘Follow-up 3’, and ‘Declined Support’ as was the case in FY 2011. The breakdown below shows the criteria of ‘Follow-up 2’. The proportion is the ratio to ‘Follow-up 2’.

#### Respondents required telephone counseling

Table 11: Results of telephone counseling

| Number of support given                             | Total |        | Based on the scores |        | Based on the free-answer question |        |
|---|-------|--------|---------------------|--------|-----------------------------------|--------|
|   | 5,324 |        | 3,629               |        | 1,695                             |        |
| Follow-up 1   | 4,277 | (80.3) | 2,829               | (78.0) | 1,448                             | (85.4) |
| Follow-up 2   | 866   | (16.3) | 660                 | (18.2) | 206                               | (12.2) |
| Follow-up 3   | 138   | (2.6)  | 106                 | (2.9)  | 32                                | (1.9)  |
| Declined Support                                    | 43    | (0.8)  | 34                  | (0.9)  | 9                                 | (0.5)  |
| <b>Continued support</b>                            |       |        |                     |        |                                   |        |
| Follow-up   | 200   | (3.8)  | 136                 | (3.7)  | 64                                | (3.8)  |
| Connected to municipal governments                  | 67    | (1.3)  | 53                  | (1.5)  | 14                                | (0.8)  |
| Refferal  | 1     | (0.0)  | 1                   | (0.0)  | 0                                 | (0.0)  |
| Sent list of registered doctors                     | 45    | (0.8)  | 32                  | (0.9)  | 13                                | (0.8)  |
| Sent list of medical institutions outside Fukushima | 12    | (0.2)  | 10                  | (0.3)  | 2                                 | (0.1)  |
| Handled by other departments                        | 19    | (0.4)  | 10                  | (0.3)  | 9                                 | (0.5)  |

Values in the table are expressed as n (%).

Table 12: Breakdown of the reasons for ‘Follow-up 2’

| Number              | Total |        | Based on the scores |        | Based on the free-answer question |        |
|---------------------|-------|--------|---------------------|--------|-----------------------------------|--------|
|                     | 866   |        | 660                 |        | 206                               |        |
| Physical problems   | 723   | (83.5) | 579                 | (87.7) | 144                               | (69.9) |
| Mental problems     | 690   | (79.7) | 531                 | (80.5) | 159                               | (77.2) |
| Emotional aftermath | 113   | (13.0) | 98                  | (14.8) | 15                                | (7.3)  |
| Adjustment disorder | 66    | (7.6)  | 60                  | (9.1)  | 6                                 | (2.9)  |
| Isolation           | 128   | (14.8) | 103                 | (15.6) | 25                                | (12.1) |

Values in the table are expressed as n (%).

After the telephone counseling, 4,277 (80.3%) were designated as ‘Follow-up 1’, 866 (16.3%) as ‘Follow-up 2’, 138 (2.6%) as ‘Follow-up 3’, and 43 (0.8%) as ‘Declined Support’. (Table 11) For continued support, 200 were designated as ‘Follow-up’, 67 were connected to the municipal government, 1 was sent a referral, 45 were sent list of registered doctors within Fukushima, 12 were sent list of medical institutions outside Fukushima, and 19 were handled by other departments. (Table 11)

The reasons for ‘Follow-up 2’ were categorized into the following: 723 for physical health problems, 690 for mental health problems, 113 for emotional aftermath, 66 for adjustment problems, 128 for isolation. (Table 12)

### Respondents requiring written support materials

In accordance with the respondents' will or the content of the free-answer question, telephone counseling was provided.

Table 13: Results of Telephone Counseling

|  | Total      | Based on the scores | Based on the free-answer question |
|--|------------|---------------------|-----------------------------------|
| Number of support given                                | 667        | 507                 | 160                               |
| Follow-up 1  | 559 (83.9) | 413 (81.4)          | 146 (91.3)                        |
| Follow-up 2  | 89 (13.3)  | 77 (15.2)           | 12 (7.5)                          |
| Follow-up 3  | 18 (2.7)   | 17 (3.4)            | 1 (0.6)                           |
| Declined Support                                       | 1 (0.1)    | 0 (0.0)             | 1 (0.6)                           |
| <b>Continued Support</b>                               |            |                     |                                   |
| Follow-up  | 20 (3.0)   | 19 (3.7)            | 1 (0.6)                           |
| Connected to municipal governments                     | 9 (1.3)    | 9 (1.8)             | 0 (0.0)                           |
| Referral   | 0 (0.0)    | 0 (0.0)             | 0 (0.0)                           |
| Sent list of registered doctors within Fukushima       | 2 (0.3)    | 1 (0.2)             | 1 (0.6)                           |
| Sent list of medical institutions outside institutions | 0 (0.0)    | 0 (0.0)             | 0 (0.0)                           |
| Handled by other departments                           | 3 (0.4)    | 3 (0.6)             | 0 (0.0)                           |

Values in the table are expressed as n (%).

Table 14: Breakdown of 'Follow-up 2'

|                     | Total     | Based on the scores | Based on the free-answer question |
|---------------------|-----------|---------------------|-----------------------------------|
| Number              | 89        | 77                  | 12                                |
| Physical problems   | 85 (95.5) | 74 (96.1)           | 11 (91.7)                         |
| Mental problems     | 57 (64.0) | 51 (66.2)           | 6 (50.0)                          |
| Emotional aftermath | 16 (18.0) | 16 (20.8)           | 0 (0.0)                           |
| Adjustment problems | 3 (3.4)   | 3 (3.9)             | 0 (0.0)                           |
| Isolation           | 17 (19.1) | 15 (19.5)           | 2 (16.7)                          |

Values in the table are expressed as n (%).

After the telephone counseling, 559(83.9%) participants were designated as 'Follow-up1', 89(13.3%) as 'Follow-up 2', 18(2.7%) as 'Follow-up 3', and 1(0.1%) as 'Declined Support'. (Table 13)

As continued support, 20 participants were designated as 'Follow-up', 9 were connected to municipal government, 2 were sent list of registered doctors, and 3 were handled by other departments. (Table 13)

The reasons for 'Follow-up 2' were categorized into the following: 85 for physical health problems, 57 for mental health problems, 16 for emotional aftermath, 3 for adjustment problems, and 17 for isolation. (Table 14)

#### **4.4 Problems faced by participants**

Since the Mental Health and Lifestyle Survey in FY 2011, we have used analytic induction to investigate problems faced by participants. They fall into four broad categories: personal problems, household problems, problems with social life, and environment and culture. Personal problems, household problems, and problems with social life divide into subcategories. Figure 3 is the revised conceptual diagram of those problems.

The content of the respondents' problems mentioned for the FY 2012 survey were categorized based on the categories from the survey for FY2011. Frequently mentioned issues were physical problems, disrupted sleep, changes in daily life and habits, dissatisfaction with government policies or problems with disaster claims.

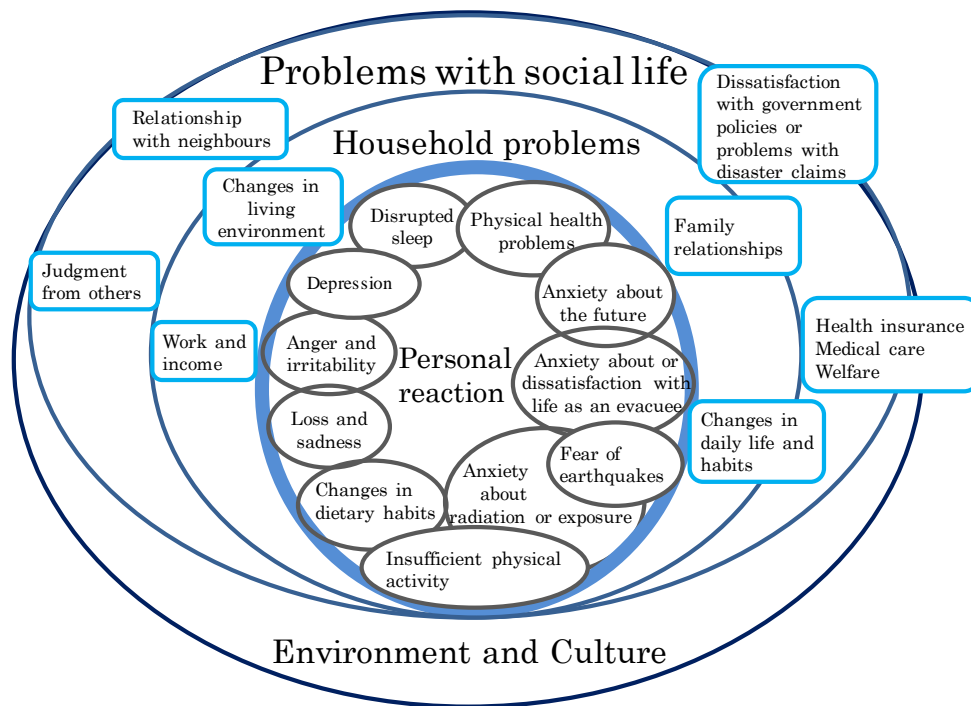


Figure 3 Conceptual diagram of problems faced by participants (adults)

## 5. Conclusion

The number of those requiring support was 1,474 children and 16,242 adults for the Mental Health and Lifestyle Survey for FY2012. Based only on the CAGE test scores, the number was 2,657. Among the children, 674 required telephone counseling and 800 required written support materials. The number of participants determined to require telephone support based on the content of written materials was 41. The number of adults required telephone counseling was 6,074 and 10,168 required written materials. The number of those determined to require telephone support based on the content of written materials was 701. If those identified as requiring support were eliminated (except for the deceased) or could not be reached for telephone support, information was provided by sending booklets: *Mental Health Support for Disaster Victims and Their Families*, *Lifestyle Checklist*, and *Prevention of Nursing Care*. To those only met the criteria of CAGE test scores, *Drinking and Mental Health* was distributed.

After the telephone counseling for children, 528 (84.7%) were categorized as 'Follow-up 1\*', and 82 (13.2%) were categorized as 'Follow-up 2\*\*'. Frequently discussed issues were reaction to earthquake and radiation, impact on school, parent or guardian's problem and family relationships.

Among the adults, 4,277 (80.3%) were categorized as 'Follow-up 1' and 866 (16.3%) were categorized as 'Follow-up 2'. Among the respondents of written materials, 559 (83.9%) were categorized as 'Follow-up 1' and 89 (13.3%) were categorized as 'Follow-up 2'. Frequently discussed issues were physical problems, disrupted sleep, changes in daily life and habits, dissatisfaction with government policies or problems of disaster claims.

It is necessary for us to cooperate with municipal governments and Fukushima Center for Disaster Mental Health to provide continued support.

\* Participants confirmed to be improving or self-managing their problems.

\*\* Participants not recovering from health problems, the emotional aftermath, adjustment disorder etc.