

Chapter 2

Research Reports & Other Manuscripts

Research Report

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The Department of Preventive Psychiatry continuously conducts support and research activities for disaster areas as one of the psychiatry laboratories at Tohoku University, also including the Department of Psychiatric Disorders and the Department of Psychiatry. In FY2016, we conducted survey and research activities as reported below in collaboration with the Miyagi Disaster Mental Health Care Center (MDMHCC) and other relevant institutions.

1. Survey of the Mental Health of Supporters in Disaster Areas and Research Support Methods

(1) Issues and Aims

People of diverse professions are involved in the restoration and reconstruction that follows large-scale disasters. Previous studies that have looked at the mental health of people working in disaster areas have primarily been concerned with professional rescuers during the emergency phase. At the same time, supporters engaged in highly public work, such as local authority staff, medical professionals, social welfare service workers, and teachers, play an important role in long-term support activities, which includes the restoration and reconstruction phase that follows the emergency phase. Most of these people are residents of the disaster-struck area, who are thus not only subject to stress as disaster victims but continuously receive stress from the long post-disaster support, which likely leads to a high risk of mental health issues. However, research on the mental health of such supporters in highly public occupations has been insufficient. Thus, we are conducting a health survey involving local authority staff and Social Welfare Council (SWC) staff in areas affected by the Great East Japan Earthquake one year or more after the disaster. We are also doing a longitudinal research study to not only provide support from a psychiatric standpoint, but also to clarify the reality of the health of these staff members and help implement the necessary support.

In particular, restoration work is ongoing long after the disaster hit and its contents are changing by the year. Moreover, the circumstances of local support is constantly changing, for example because of the gradual decrease in supporters coming in from all over Japan. This study uses the results of a health survey involving SWC staff conducted in FY2016 to examine what primary factors are relevant to poor mental health, and we wish to investigate what policies are needed to protect the mental health of people engaged in long-term support activities.

(2) Research Methods

The survey involved SWC staff from disaster areas along the Tohoku coast. We conducted the survey on 608 staff members from several SWCs within Miyagi Prefecture between October 2015 and March 2018 and collected data from 539 (88.7%) of them (We analyzed the data in FY2016 and reported the results to each SWC in June 2016).

The survey used self-administered questionnaires. The survey items included current work situation and personal disaster situation, current health condition, a questionnaire screening for depression and anxiety disorders (Kessler Psychological Distress Scale: K6), a questionnaire on

mental and physical health (Patient Health Questionnaire: PHQ-9) to assess symptoms of depression and their severity, and a 17th question with a PTSD Checklist (PCL) to assess PTSD severity.

The questionnaire explicitly stated the optional nature of participation, and the samples were collected after being sealed by the participants themselves so as to maintain the confidentiality of the results from bosses and colleagues. After the questionnaire, we offered participants the chance to have a consultation with a clinical psychologist or a psychiatric certified nurse specialist, and we also informed people that this would be available even if they did not submit the questionnaire. Furthermore, this study was conducted after approval by the Ethical Board of the Graduate School of Medicine, Tohoku University.

(3) Study Results

We conducted the survey with several SWCs in disaster areas along the coast of Miyagi Prefecture. The 539 respondents consisted of 26.9% men and 73.1% women with an average age of 48 years. The results of the self-administered questionnaire for the 2015 survey showed 8.0% at high risk on the K6, 13.7% at high risk on the PHQ-9, and 3.3% at high risk on the PCL.

Next, we conducted a longitudinal examination of the primary factors relevant to those at high risk according to the K6, the PHQ-9, and the PCL. We assigned K6, PHQ-9, and PCL high risk as the response variable, and the following items as the explanatory variables: “Basic attributes” (age, sex, occupation), “Individual factors” (single household, illness treatment history prior to the earthquake, mental health treatment history prior to the earthquake, lack of sense of local solidarity), “Factors caused by the earthquake” (emergency temporary housing, dead or missing family members, life-threatening experiences, self-condemnation for actions taken at that time), and “Workplace factors” (evacuating one’s home, not being able to recuperate, lack of workplace communication, seemingly unending workload). We then conducted a logistic regression analysis. We conducted a simple linear regression for each item and conducted multiple regressions for those found to be significant, examining their correlation (Table 1).

The primary factor with the highest odds ratio for those aware of high stress levels of at least 13 points in the K6 was “I have a mental health treatment history after the earthquake.” Those with a history were about 9.1 times more likely to be aware of high levels of stress than those without a history. Next, those who ticked “I am struggling with workplace human relations” were about 4.4 times more likely to be at risk of being aware of high stress levels than others. Those who ticked “I feel I have a seemingly unending workload” were about 2.9 times more likely than others.

Table 1. Primary factors relevant to the mental health of SWC staff 55–60 months after the earthquake

Primary factors relevant to psychological stress (K6)	I have a mental health treatment history after the earthquake
	I am struggling with workplace human relations
	I feel I have a seemingly unending workload
Primary factors relevant to symptoms of depression (PHQ)	I had a mental health treatment history prior to the earthquake
	I have a mental health treatment history after the earthquake
	I have not been able to recuperate
	I am struggling with workplace human relations
	I feel I have a seemingly unending workload
Primary factors relevant to symptoms of trauma (PCL)	I feel guilt over actions that I took at the time of the earthquake

The primary factor with the highest odds ratio for those requiring special attention with symptoms of depression of at least 10 points in the PHQ-9 was “I have a mental health treatment history after the earthquake.” Those with a history were about 4.0 times more likely to exhibit strong symptoms

of depression than those without a history. Next, those who ticked “I had a mental health treatment history prior to the earthquake” were about 3.5 times more likely to exhibit strong symptoms of depression than others. Those who ticked “I am struggling with workplace human relations” were about 3.4 times more likely than others, those who ticked “I feel I have a seemingly unending workload” were about 2.2 times more likely than others, and those who ticked “I have not been able to recuperate” were about 2.1 times more likely than others.

The primary factor with the highest odds ratio for those requiring special attention with PTSD symptoms of at least 44 points in the PCL was “I feel guilt over actions that I took at the time of the earthquake.” Those who feel so were about 7.9 times more likely to exhibit strong PTSD symptoms than those who do not. Additionally, while not statistically certain, those who ticked “I am struggling with workplace human relations” were about 8.3 times more likely to exhibit strong PTSD symptoms than others. Those who ticked “I have a mental health treatment history after the earthquake” were about 3.2 times more likely than others, and those who ticked “I have not been able to recuperate” were about 3.0 times more likely than others.

The above suggested that workplace factors such as “I am struggling with workplace human relations,” “I have not been able to recuperate,” and “I feel I have a seemingly unending workload” have a considerable impact on mental health. Moreover, we also saw that having a “mental health treatment history” prior to and after the earthquake increases the risk of mental health deterioration. Furthermore, “I feel guilt over actions that I took at the time of the earthquake” had a considerable impact on PTSD.

(4) Discussion

A chronological comparison of these SWC survey results and the results of other longitudinal surveys over a three-year period (FY2012, FY2013, FY2014) shows little change in the proportion of those with K6 high risk at 8.4% → 7.9% → 8.7% → 8.0%, while it is higher than the level for all of Miyagi Prefecture before the earthquake (about 6% for the prefecture in the 2010 national census). Moreover, those with PHQ-9 high risk remained at a high level at 13.1% → 13.7% → 14.9% → 13.7%. Those with PCL high risk showed a downward trend at 4.1% → 4.1% → 3.7% → 3.3%, but there was no major improvement.

It became clear that SWC staff had a proportion of persons with mental unhealth larger than in normal times to some extent even five years after the earthquake. Normally, the indicators for mental health should gradually improve as time passes after the earthquake, but the mental health situation here has not improved significantly since the first survey, suggesting the possibility of plateaued improvement. The SWC staff are in a position of continuously supporting the weakest victims, and it is possible that the long duration and difficulties of that support are causing chronically high levels of stress.

Investigating the primary factors impacting mental health 56 months after the earthquake, we found that the workplace factors “I am struggling with workplace human relations,” “I have not been able to recuperate,” and “I feel I have a seemingly unending workload” have a major impact on mental health. In addition to their restoration work, their work to support local welfare is returning to pre-earthquake levels, which is placing an excessive burden on the workplace as a whole, and this is thought to be one cause. In order to maintain individual mental health, we believe that initiatives for improving the working environment as a whole in normal times are more needed than mental health measures adapted to disaster recovery. The former includes improving workplace communication, creating a working environment that makes it easy to recuperate, and efforts to alleviate work difficulties and negative feelings.

Furthermore, we also saw that answering “I have a mental health treatment history” before or after the earthquake increases the risk of mental health deterioration. Moreover, “I feel guilt over actions that I took at the time of the earthquake” had a major impact with regard to PTSD. We see the need for measures that allow staff to share and talk about struggles relating to their support work within the workplace and that let them attend work-related conferences or receive work-related supervision as a way to help those with risk factors.

2. Studies of Skills for Psychological Recovery in Disaster Areas

- (1) Study of the Possibility of Implementing Skills for Psychological Recovery (SPR) to Help Disaster Victims during the Restoration Phase in Japan

<Issues and Aims>

SPR represents the latest in practical psychological support techniques and can be applied to a broad range of mental issues that many disaster victims are likely to experience in the restoration and reconstruction phase. It was developed by the U.S. National Center for PTSD and the U.S. National Child Traumatic Stress Network and was announced in 2010. A Japanese version was created by the research team at Hyogo Disaster Mental Health Care Center in June 2011.

After the Great East Japan Earthquake we held study meetings and made DVDs in Miyagi to communicate knowledge about SPR and improve skills among specialists in disaster areas. We saw indications that the spread of SPR-related knowledge and skills had a certain effect, such as the growing demand for SPR among specialists providing support to residents of disaster-stricken areas. At the same time, in order to actually apply SPR in Japan, we need to examine whether this program can be safely implemented in disaster areas. Thus, this study was conducted in collaboration with local governments in disaster areas and constituted an intervention study about applying SPR in Japan. It involved the actual application of SPR to disaster victims and examined its feasibility.

<Research Methods>

A. Subjects and recruitment

The study involved persons 18 years or over who are aware of their own mental unhealth and either live or work in Miyagi Prefecture. Persons receiving treatment at mental health institutions or those suffering from serious mental disorders were excluded. Moreover, they had to be Japanese native speakers and provide the necessary written consent for participation in the study in person after understanding the aims and contents of the study. We publicly recruited participants for the program after exchanging memoranda with the local governments in the disaster areas, and also solicited participants using leaflets posted with permission in public facilities and non-profit offices.

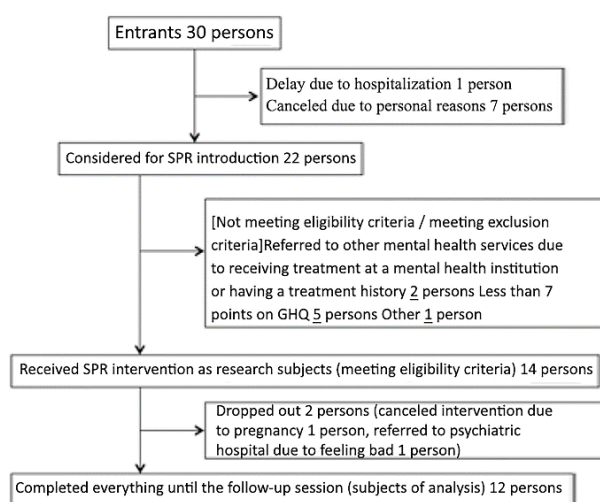


Figure 1. Study flow chart

B. SPR practitioners (interveners)

All mental health professionals providing support (nurses, public health nurses, psychologists, doctors, etc.) had received instruction from SPR trainers at the Hyogo Disaster Mental Health Care Center and conducted SPR under the supervision of those trainers and psychiatrists at the Department of Psychiatric Disorders, Tohoku University Hospital.

C. Timing and instances of intervention

We conducted a pre-intervention assessment of all participants meeting the selection criteria after explaining the meaning of the study and obtaining written consent. The interveners visited the participants to conduct interviews taking about 60 minutes once every one or two weeks on a total of no more than eight occasions. We conducted a post-intervention assessment after the intervention and a follow-up assessment two months later.

D. Course of the intervention

Figure 1 shows a flow chart for the study. We introduced SPR intervention for 30 persons in order of application as follows. Excluding those who canceled due to personal reasons or has to delay intervention, we considered introducing SPR for 22 persons. We conducted assessment interviews with them, screened them by using a General Health Questionnaire (GHQ-30), and evaluated them according to eligibility and exclusion criteria. As a result, we found 14 persons who met the research criteria. The interveners performed SPR interventions on these 14 persons during every session under the supervision of their SPR trainers.

Of the 14 persons, 2 canceled midway. 1 was found to be pregnant during the intervention and we had to cancel her SPR intervention and subsequently lost contact with her (finished after 5 interventions). There were 12 persons who completed everything until the follow-up session, and their data was used for our analysis.

E. Assessment contents

We set the GHQ^{4,5)} total score as the primary endpoint. We set QOL (SF8 Health Survey: SF-8),⁶⁾ PTSD (Impact of Event Scale-Revised: IES-R),^{7,8)} resilience (Tachikawa Resilience Scale: TRS),⁹⁾ self-efficacy (Self-Efficacy Scale: SES),^{10,11)} and satisfaction with the program (Client Satisfaction Questionnaire: CSQ-8J)¹²⁾ as secondary endpoints. Moreover, we qualitatively surveyed participants' thoughts on the program and each skill as well as their later use of them.

<Study Results>

The average number of SPR sessions was 5.5 times. 12 out of 14 cases completed the intervention (14.3% suspension rate) and the follow-up. The average age of the 12 persons subject to analysis was 45.25 years (SD 10.48) and the sex ratio was 2 men to 10 women, making the majority women. Most of the subjects lived in areas affected by the Great East Japan Earthquake, so the earthquake had greatly impacted them, including damages to home and workplace as well as deaths and persons missing among people close to them.

The analysis showed significant improvements to GHQ, TRS, and SES by the end of intervention (Figures 2–4). However, we could only confirm improvement for SES when comparing the follow-up to pre-intervention (Figure 4). We saw no significant difference for other indicators.

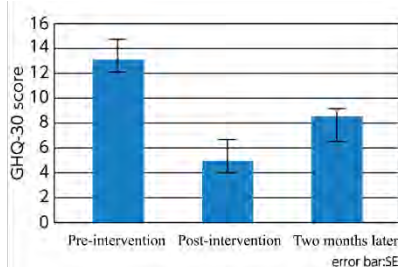


Figure 2. Changes in GHQ-30 scores by SPR intervention (N = 12)

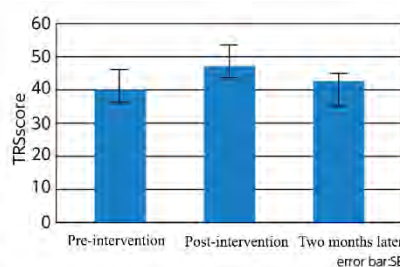


Figure 3. Changes in TRS scores by SPR intervention (N = 11)

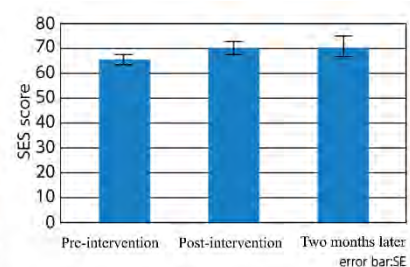


Figure 4. Changes in SES scores by SPR intervention (N = 10)

<Discussion>

We saw that mental health improved after SPR intervention, which had an effect of increasing resistance (TRS) and self-efficacy (SES). Self-efficacy is known to suppress depression and resilience is thought to assist recovery from mental difficulties. Thus, the results showing mental health improvements in parallel with these indicators suggests the possibility that these factors are correlated. However, this study could not methodologically verify the effects or investigate inter-factor correlation, so any interpretation of the results requires care. Moreover, of the three indicators

that improved post-intervention, we could confirm sustained improvement for self-efficacy also at the follow-up, suggesting the possibility of a sustained effect of intervention.

As the results showed how intervention can improve mental health and resistance, this suggests that it may have a positive effect on a wide range of mental health indicators. At the same time, we could see not sustained improvement effect for mental health and resistance. A possible reason why the effect was not sustained long-term is that sustained mental health improvement was obstructed by participant dispositions and chronic post-earthquake issues. Moreover, it is possible that the lack of regular meetings with interveners after the end of intervention contributed to the intervention effects not being sustained.

12 out of the 14 cases that underwent SPR intervention completed the intervention and participated in a follow-up survey. The reasons for the 2 canceled cases were pregnancy and work-related stress, and none of the cases exhibited any serious harmful effects accompanying the SPR. Furthermore, we saw no indicators worsening pre-intervention, post-intervention, or at follow-up, showing that SPR is safe to implement in Japan as well.

The results of this study showed that it is safe to implement SPR in Japanese disaster areas and that it is a useful support program suitable for the restoration and reconstruction phase. Future studies will need to include comparative research with control groups to check the long-term effects of SPR.

(2) Study of Mental Exercise Training for General Citizens and Supporters in Areas Affected by the Great East Japan Earthquake with the Aim of Raising Public Awareness about Cognitive Behavioral Therapy

<Issues and Aims>

The coastal areas of Miyagi Prefecture sustained considerable damage from the Great East Japan Earthquake. Victims suffered physical and mental pressure. Thus, we can expect them to need mental health care for an extended period of time ranging from years to decades. Past studies have shown that residents of areas struck by large-scale disasters not only suffer from PTSD, depression, and other mental diseases, but are also likelier to face subsyndromal mental issues that do not go as far as mental diseases.

Cognitive behavioral therapy is a psychotherapeutic method that aims to increase self-control as well as improve or solve various problems related to social life by approaching issues both cognitively and behaviorally. Cognitive behavioral therapy can be applied to a variety of mental diseases, including depression and anxiety disorders, and is reportedly effective. Moreover, cognitive behavioral therapy is not only used to treat mental diseases but has also been shown to have an effect on subsyndromal mental issues that are not quite mental diseases; reportedly, it has a preventive effect on mental diseases as well, which is why it is applied in a broad range of settings, apart from medical settings. However, compared to other advanced countries, the awareness of cognitive behavioral therapy has not advanced so far in Japan.

Thus, the National Center for Cognitive Behavior Therapy and Research of the National Center of Neurology and Psychiatry has been conducting “Mental Exercise Trainings” since 2012 in order to disseminate the basic ideas and skills of cognitive behavioral therapy widely in society (no longer on-going). The program was developed by the National Center for Cognitive Behavior Therapy and Research of the National Center of Neurology and Psychiatry to teach the general population the basic ideas and skills of cognitive behavioral therapy through seminars and experiences so that they can apply them in stress care in daily life.

We expect that the spread of basic ideas and skills of cognitive behavioral theory can play a major role in the prevention of mental issues after large-scale disasters. In the past, we held workshops for the general population and supporters in disaster areas about everyday stress care based on the basic ideas and skills of cognitive behavioral therapy as a form of primary prevention. We also conducted a pilot study to verify the efficacy and feasibility of a training program for a general audience (February 2013 to June 2014 in Miyagi Prefecture). We modified the sixth “Mental Exercise Training” program to make it into a pilot study for 46 members of the general public who had given consent for the study. The results showed a significant increase in self-efficacy after the training. The participants rated the program highly and we confirmed its safety. High self-efficacy is correlated

with weak depression symptoms and high self-esteem,¹¹⁾ so it possibly helps prevent the kinds of mental issues that easily occur after large-scale disasters. Thus, this study involved a randomized controlled trial based on the results of the pilot study.

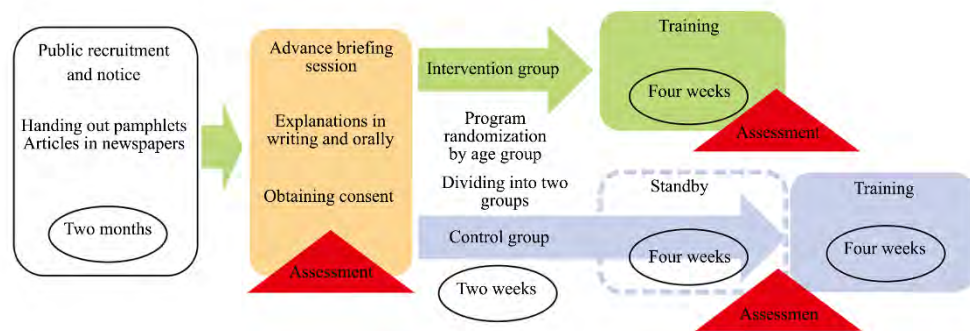


Figure 5. Overall course of the study

<Methods>

A. Study design

Randomized control trial (RCT) design. Participants were randomly divided into two groups: The intervention group receiving the training first and the control group (standby group) on standby before receiving the training. The intervention group underwent a training program spread over four sessions and a post-intervention assessment was done in the final session. The standby group had an assessment at the same time, after which they underwent the same training program.

B. Subjects and recruitment

They should be 18 years or over and 79 years or under as well as members of the general public in Miyagi Prefecture affected by the Great East Japan Earthquake. They should also wish to participate in the study, have understood the meaning of the study, and have consented to participate. Furthermore, we excluded persons receiving treatment at mental health institutions and persons with serious mental disorders who either had their treatment suspended or had received no treatment. We publicly recruited participants by handing out pamphlets and having articles published in newspapers and PR magazines.

C. Contents of the training program

Based on the results of the pilot study, we reduced the number of sessions for the “Mental Exercise Training” from six to four times and changed it to 90-minute sessions held once a week for four weeks. We tried to increase the participation rate by reducing the number of sessions. Moreover, we gave the participants homework after each session to help them learn more experientially (e.g., illustrating stress situations experienced in daily life by using the cognitive behavioral therapy model). We changed the program contents so that it centered on cognitive restructuring and assertion.

D. Assessment contents

We set the primary endpoint as the total score of the Self-Efficacy Scale (SES).^{10,11)} A high sense of self-efficacy is expected to have a preventive effect on post-disaster mental diseases, and past studies have suggested that it can be improved through a cognitive behavioral approach. We would consider the program effective if there was a positive significant difference in SES scores pre- and post-intervention.

We set the respective total scores of the K6 measuring general mental health,^{13–15)} the GHQ-30 measuring stress-related symptoms,^{4,5)} and the Automatic Thoughts Questionnaire-Revised (ATQ-R) measuring negative and positive automatic thoughts^{16,17)} as secondary endpoints. Moreover, we also examined ten original items related to subjective stress and understanding of the training contents.

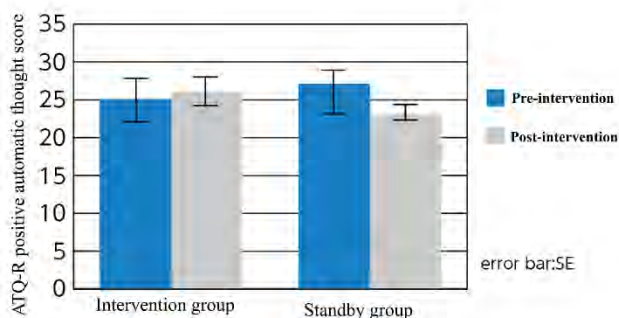


Figure 6. Changes in positive automatic thought scores

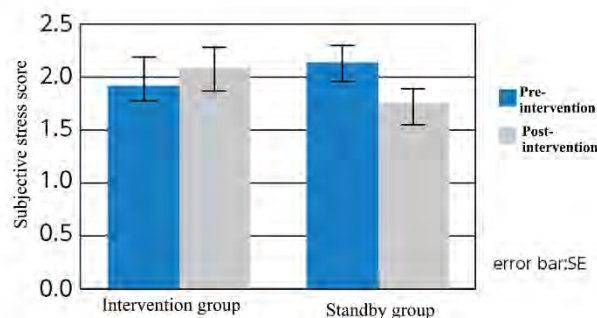


Figure 7. Changes in subjective stress scores

<Results>

We held the program a total of three times: January–March 2015 in Ishinomaki City, and June–August 2015 and January–March 2016 in Sendai City. A total of 76 general participants (9 men, 67 women, average age 54.3 ± 12.3 years) took part. Of these, 63 (9 men, 54 women, average age 52.8 ± 12.5 years) were study subjects. These subjects were divided into an intervention group of 32 persons (5 men, 27 women, average age 52.8 ± 12.0 years) and a control group of 31 persons (4 men, 27 women, average age 52.9 ± 13.2 years). The average number of program sessions participated in was $3.47 (\pm 0.92)$ for the intervention group, with 87.5% participating in at least 3 sessions.

In the intervention group, 27 persons participated in at least three sessions and answered the pre- and post-intervention questionnaires. In the control group, 27 persons answered the pre- and post-intervention questionnaires. We used the data of these persons for our analysis of basic attributes, which showed no significant differences in terms of attribute data (age, sex, education, employment history, household size, moving due to the earthquake, whether they had deaths or missing persons among close ones, life-threatening experiences) between the two groups. This demonstrated that the randomization of the two groups had been done appropriately.

We found no significant difference between the groups before or after intervention for general self-efficacy, the primary endpoint. We found a significant increase for the secondary endpoint of positive automatic thoughts according to the automatic thoughts scale in the intervention group. Among the original items, we also found a significant increase in the score for the item related to subjective stress (“I feel a lot of stress in daily life”).

<Discussion>

This study is the first randomized controlled trial to show that a training program based on cognitive behavioral therapy for a general audience following a disaster can help increase positive automatic thinking. It appears that participating in a program focused on cognitive restructuring can increase the cognitive capacity to deal with everyday stress and increase positive automatic thoughts. We know that positive automatic thoughts correlates with depression recovery¹⁸⁾ and it is hoped that it can have a suppressive effect on symptoms of depression.^{19–23)} The kind of training program used in this study has the potential of being an effective means of intervention for members of the general public after large-scale disasters. Future studies should examine if positive automatic thoughts taught during training can improve mental health or prevent mental diseases.

We found no significant difference for self-efficacy, for which an effect was suggested in the preliminary study and which was the primary endpoint of this study, between the intervention group and the standby group. Since the program in this study consisted of four sessions, a modification of the pilot study’s six sessions, it is possible that an increase in general self-efficacy, meaning trust in oneself, was not achieved due to the time required for such skills to be acquired and established.

Moreover, we found an increase in subjective stress, which was one of the original question items. This was possibly due to an increased awareness of one's psychological stress through the training, but neither of the assessment scale K6 and GHQ-30 showed any mental health deterioration, thus supporting the safety of the program. When implementing this kind of program with members of the general public, there is a need to take into consideration the risk of heightened subjective stress post-intervention.

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Camp Project for Children in the Disaster Area

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1. Introduction

Six years have passed since the Great East Japan Earthquake and the restoration in the disaster areas have entered the long term. Local emergency temporary housing is progressing to public housing and home rebuilding. However, changes in the living environment and the building of human relations in new communities may cause people living in the disaster areas further stress.

The Miyagi Disaster Mental Health Care Center (hereafter, MDMHCC) believes that it is important to provide parents and children living in such circumstances opportunities to remove themselves from their stressful situations, even if only for a short while, and to refresh themselves in a more unusual environment. They conducted the Camp Project for Parents and Children in Disaster Areas (hereafter, the Project), which aims to raise parents' and children's interest in mental health as well as increase their self-care ability by letting the children play freely in nature and releasing the parents from everyday child-rearing. It also aims to help them develop the ability to deal with stress by working together with various people. The Project started as part of Tohoku Fukushi University's disaster area support in FY2011 and has been continued by the Center since FY2012 on a once-a-year basis. Since FY2016, it has been conducted as part of the Children's Mental Health Care Regional Support Base Project commissioned by Miyagi Prefecture.

The following is a report about the Project since it was renewed as part of the Children's Mental Health Care Regional Support Base Project in FY2016.

2. Project Outline

(1) Aims

The Project was conducted with the aim of raising parents' and children's interest in mental health as well as increasing their self-care ability by letting the children play freely in nature and releasing the parents from everyday child-rearing, thus removing them from their stressful situations for at least a short while. It also aimed to help them develop the ability to deal with stress through working together with various people.

(2) Date and Location

Date: October 1 (Sat), 2016

Location: Matsushima Outdoor Activity Center

(3) Participants

Taking into consideration the changing situation as people are rebuilding homes and moving into public housing in the inland, the camp was not only for elementary-school children and their guardians from the coastal areas of Sendai and Natori, but also for those from Matsushima, where the camp was held. We decided to make 30 the maximum number of participants because of the staff manpower and camp capacity.

(4) Staff

Table 1 shows the staff composition. Besides staff from the Center, we had a multi-disciplinary team made up of specialists from external organizations registered with a supporters' club that endorses the Center's activities. In this way, we had about the same numbers of staff and participants

to ensure better safety. We also received planning and management support from Sendai District, Boy Scouts Miyagi Prefectural Association, whose activities aim to contribute to the healthy training of young men and who are experts in camping and other outdoor activities.

Table 1. Staff composition

Center staff, 17 persons	1 doctor, 2 public health nurses, 1 nurse, 9 psychiatric social workers, 2 clinical psychologists, 2 office workers
External helpers, 7 persons	1 doctor, 1 public health nurse, 1 psychiatric social worker, 1 clinical psychologist, 1 yoga instructor, 2 boy scouts

(5) Methods

① Questionnaires

We conducted a questionnaire survey by mail about one month before and after the Project, asking participating children and guardians how the earthquake had affected them and how their mental and physical states had changed.

a. Children's pre-camp questionnaire

We used the PTSS-15 (Post-Traumatic Stress Symptoms for Children 15 items),¹⁾ which is used to assess PTSD symptoms in children during disasters, as well as an original questionnaire created for this study. The questionnaire had several multiple-response questions. The question "Why did you decide to participate in the camp?" had six answers to choose from: having participated in the past, I myself wanted to participate, recommended by family, invited by friends, the program seemed fun, and other. The question "Which part of the program interests you?" had six answers to choose from: bus travel, cooking, the recreation, learning about the mind, making new friends, and other. The question "Is there anything you feel anxious or worried about?" had seven answers to choose from: riding a bus, participating in the camp, being with staff I don't know, being with friends I don't know, program contents, Learning about the Mind, and other. There was also a freeform question, "What is on your mind before camp?"

b. Children's post-camp questionnaire

We used the PTSS-15 and an original questionnaire. The questionnaire had several multiple-response questions. The question "How was it to participate?" had three answers to choose from: fun, normal, and not fun. The question "Did you feel that Learning about the Mind was helpful?" had two answers to choose from: yes and no. The question "What part of the program was fun?" had eight answers to choose from: the bus rides, the orientation, lighting a fire, making lunch, the recreation, Learning about the Mind (yoga), final session, and other. There were also the freeform questions, "What were your impressions from Learning about the Mind?" "Did something at the camp make you feel anxious or unhappy?" and "Write freely about your impressions from taking part in the camp."

c. Caregivers' pre-camp questionnaire

We used the Kessler Psychological Distress Scale (K6),²⁾ which is a six-item scale for measuring and assessing symptoms of depression and anxiety in the past one month, as well as an original questionnaire. The K6 was developed by Kessler and the Japanese version by Furukawa et al.,³⁾ and its reliability and validity have been verified. The questionnaire had the multiple-response question, "How would you like the program for guardians to be?," with five answers to choose from: an opportunity to talk about child-rearing and everyday troubles, a program for relieving one's own stress, really doing a lot of physical activities with my child, taking it easy by myself, and other. There was also the freeform question, "Is there anything that your or your child feels worried about?"

Moreover, we also asked the guardians to fill in an original questionnaire about their child's situation during the disaster. The question "Where were they during the earthquake?" had three answers to choose from: at home, at school, and other. The question "Who were they with?" had four answers to choose from: family, friends, alone, and other. The question "How badly damaged

was your home?” had five answers to choose from: the house and the furniture were not really damaged, the house was not damaged but the furniture was scattered, both the house and the furniture were damaged but we could still live there, both the house and the furniture were so damaged we could no longer live there, and the house was gone. There were also the yes/no questions “Were they in any life-threatening situations?,” “Were they actually hurt?,” “Did they see anybody who was hurt?,” “Did any relative or friend pass away?,” “Did they lose anything precious (toy, etc.)?,” “Did they see the tsunami with their own eyes?,” “Did they have any difficult experience prior to the earthquake?,” “Do they have a history of physical disease or hospitalization?,” and “Have they been treated with psychiatric care or psychosomatic medicine?” There were two freeform questions, “Is there anything you worry or feel anxious about as a guardian?” and “What was your address at the time of the earthquake?”

d. Caregivers’ post-camp questionnaire

We used the K6 as well as an original questionnaire. There were the freeform questions “What were your impressions from your child’s participation?,” “If a similar event is held in the future, what kind of contents would make you want to have your child participate?,” “If there were a program for guardians, what kind of contents would make you want to participate?,” “If there were a program for guardians, what kind of conditions would make you want to participate?,” and “Do you have any other comments or suggestions?”

e. Staff post-camp questionnaire

There were three freeform questions, “Did you notice anything about the participating children?” “Did you notice anything about the planning, management, or composition?” and “What are your impressions from participating?” This time, we only included items relating to the children in the results.

2. Program

Taking into consideration the wider area of eligible addresses in two cities and one town since FY2016 and the resulting burden in terms of guardians driving the children, we set up a meeting point at Sendai Station as well as on-site and split up some parts of the children’s program. This is shown in Figure 1.

During recreation, the children have fun doing physical exercises, either working together in teams or all participants taking part at once. After recreation, we had a session titled “Learning about the Mind,” which consisted of yoga centered on breathing techniques taught by an instructor who has conducted psychotherapy to

treat traumas at a national medical research institute since August 2011 and has led a yoga program at the wards of a national hospital. This allowed the children to settle down after the spirited recreation and aimed to teach them a way to calm down when something bad has happened or they are agitated.

As regards the FY2016 program for guardians, we decided to plan the contents based on the results of the pre-camp questionnaire. Since the most common answer was “I want to take it easy by myself” (9 out of 15 responses), we decided not to organize a program for guardians so that they could refresh themselves at their own pace using their time freely away from everyday life.

Program for those meeting up at Sendai Station	Program for those meeting up on-site
8:00 Assembly 8:30 Bus departs 9:20 Bus arrives	8:50 Assembly 9:00 Handicraft (making a welcome board) 9:20 Welcoming the bus, the groups meet up
9:30 Orientation 10:20 Making a fire, cooking lunch 11:30 Lunch 13:00 Recreation 15:10 Final session 16:00 Tidying up (cleaning)	Groups are balanced in terms of age and sex
16:30 Bus departs 17:30 Going home	
	16:30 Seeing friends off 16:40 Going home

Figure 1. Program overview

Photo 1. Outdoor recreation



3. Results

(1) Participation

The number of participating children in FY2016 was 10 boys and 10 girls, making a total of 20 children. They came from 15 households and their average age was 9.35 years. 12 out of the 20 children had previously participated in the Project. Moreover, since we took into consideration the changing situation as people are rebuilding homes and moving into public housing inland by expanding the areas with eligible addresses, we received applications from five children in new areas (one canceled). All of them had moved from disaster areas to rebuild their homes elsewhere. All guardians from the 15 households filled in the pre-camp questionnaire and helped drive the children.

The participating staff were 17 persons from the Center and 7 external supporters, making a total of 24 persons. By profession they consisted of two child psychiatrists, three public health nurses, one nurse, nine psychiatric social workers, one social worker, three clinical psychologists, one yoga instructor, two boy scouts, and two office workers.

(2) Questionnaire results

① Children's pre-camp questionnaire

We received responses from all 20 participating children (100% response rate). In response to the question "Why did you decide to participate in the camp?" 40.0% responded "I have participated in the past," 55.0% responded "I myself wanted to participate," 50.0% "My family recommended it," 20.0% "I was invited by friends," and 20.0% "The program seemed fun." In response to the question "Which part of the program interests you?" 31.6% responded "Bus travel," 78.9% "Cooking," 68.4% "Recreation," 21.1% "Learning about the Mind," and 31.6% "Making new friends." In response to the question "Is there anything you feel anxious or worried about?" 5.0% responded "Riding in a bus," 5.0% "Participating in the camp," 5.0% "Being with staff I don't know," and 30.0% "Being with friends I don't know." For the freeform question, we had responses like "I'm worried if I'll get used to the new friends," "Will I be able to make new friends? Worried," "Yoga seems difficult so I'm not confident," and "I hope I can make some good friends."

② Children's post-camp questionnaire

We received responses from 18 out of 20 participating children (90% response rate). In response to the question "How was it participating?" 88.9% responded "It was fun" and 11.1% "It was normal." In response to the question "What part of the program was fun?" 11.1% responded "The bus rides," 16.7% "The orientation," 72.2% "Lighting a fire," 55.6% "Making lunch," 72.2% "The recreation," 38.9% "Learning about the Mind (yoga)," 16.7% "The final session," and 5.6% "Other (eating curry)." In response to the question "Did you feel that Learning about the Mind was helpful?" 88.9% responded "Yes" and 11.1% "No." In response to the question "Did something at the camp make you feel anxious or unhappy?" 44.4% wrote "Nothing" and 55.5% did not write anything. In response to the freeform question "What were your impressions from Learning about the Mind?," they wrote things like "It was fun," "It felt good," "I thought it would difficult in the beginning but it was surprisingly easy," "It was really educational to move the body freely," and "I want to do it again." Under "Write freely about your impressions from taking part in the camp," they wrote many positive responses, such as "It was fun getting to know new friends. I want to participate again," "I'm happy I could make new friends," "I was a bit worried at the start, but everybody was kind; so it was fun," "I made many friends. We got along when we worked together," and "It was fun lighting a fire."

③ Caregivers' pre-camp questionnaire

We received responses from all 15 guardians (100% response rate). In response to the question "How would you like the program for guardians to be?," 30.0% responded "I want an opportunity to talk about child-rearing and everyday troubles," 20.0% "A program for relieving one's own stress," 10.0% "I want to really do a lot of physical activities with my child," and 80.0% "I want to take it easy by myself." In response to the freeform question "Is there anything that your or your child feels worried about?," they wrote things like "That they won't be able to initiate conversations with new friends," "I think they are sometimes persevering without letting their emotions out," and "I want them to have the ability to handle difficult situations, but don't know how to guide them."

④ Caregivers' post-camp questionnaire

We received responses from 13 out of 15 guardians (86.7% response rate). In response to the question "What were your impressions from your child's participation?" they wrote things like "I haven't been able to relax like this in a while" and "I got to do something out of the ordinary." About their children, they noted positive changes, writing things like "I felt they had good experiences participating by themselves," "I feel the one-day camp made them stronger," "They haven't participated much since starting the upper grades, but it looks like they had fun as there were more things they could do and others would rely on them," and "They looked a bit worried in the morning, but I was happy to see them come home with a smile on their face and talking about how much fun it was." They also wrote positive responses such as "They don't usually hang out with kids from other schools or cook, but it seems they had fun despite some nervousness," "It seems they could really build confidence," "Since the children participated by themselves, I think it really allowed them to express themselves without any worries," and "I'm happy you let them try out a variety of things." In response to the question "If a similar event is held in the future, what kind of contents would make you want to have your child participate?" they wrote response such as "It's fine as it is," "River and mountain activities," "Activities where you move your body to your heart's content," "Learning about our relation to water," and "Overnight stay." Moreover, in response to the question about the program for guardians and "themes you would like to see," they wrote things like "How to praise and reprimand a child," "Mindset for raising a child," and "How to deal with child psychology based on cases and by different patterns." As for "conditions that would make you participate," they responded with things like "I want it to be while the children are at day camp," "On a Saturday," and "It would be good if we could participate right after dropping the children off."

⑤ Staff post-camp questionnaire

We received responses from 18 persons out of a total of 21, consisting of the 17 Center staff as well as 1 doctor, 1 public health nurse, 1 social worker, and 1 clinical psychologist from external

organizations (85.7% response rate). In response to the question “Did you notice anything about the participating children?,” they wrote responses that hinted at the children’s growth, such as “Children who looked worried when we first gathered were brimming with confidence as they went home,” “As they worked together in groups, they became able to talk to other children and to staff as well,” “I was surprised how children who previously had been uncomfortable in the teams became engaged as they helped their juniors,” “I saw children who had participated several times giving way to and helping children here for the first time,” “Children who had been here before had grown tremendously and I saw many instances throughout the day where the children helped each other or showed consideration for younger ones,” and “I saw children who had been here before take leadership.” They also wrote about the children during the yoga, such as “I was surprised by the relaxing effect of the yoga as there were some children sleeping,” “I was amazed by how the children immediately became quiet and focused on their breathing,” “There were kids who said the yoga was the most fun,” and “It seems the yoga had a relaxing effect as it looked like they felt good.”

(3) The children’s disaster stress responses

Figure 2 shows the result of the PTSSC-15 conducted with the children before and after the day camp. We had 18 effective respondents who responded both before and after the day camp. The average value for the pre-camp PTSSC-15 was 12.2 ($SD = 11.5$) and the average post-camp was 17.6 ($SD = 13.8$), both of which were considerably lower than the average for children in regular families (29.1).⁴⁾ We conducted a corresponding t -test to investigate the change in PTSSC-15 score after the day camp, which showed a significant difference ($t(17) = 1.35, p > .10$).

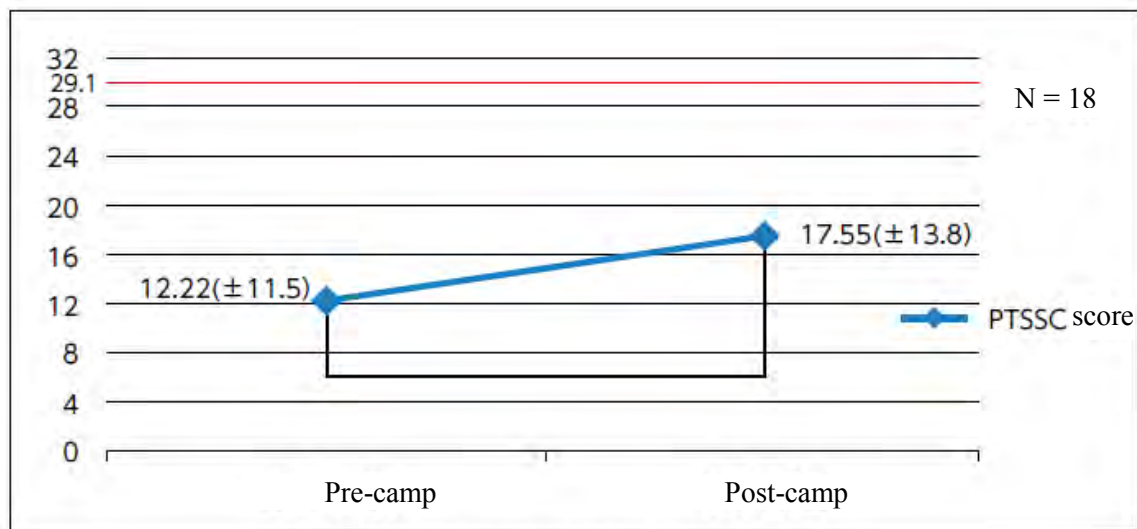


Figure 2. Before/after comparison of participating children’s PTSSC scores (SD)

(4) The guardians’ general mental health

Figure 3 shows the results of the K6 conducted with the guardians before and after the day camp. We had 13 effective respondents who responded both before and after the day camp. The average value for the pre-camp K6 was 3.54 ($SD = 2.69$) and the average post-camp was 1.23 ($SD = 1.48$), both of which were lower than the standard score for K6 general groups (5 points).⁵⁾ We conducted a corresponding t -test to investigate the change in K6 score after the day camp, which showed the post-camp score to be significantly lower than the pre-camp score at a significance level of 1% ($t(12) = 3.53, \Delta = .86, p < .01$).

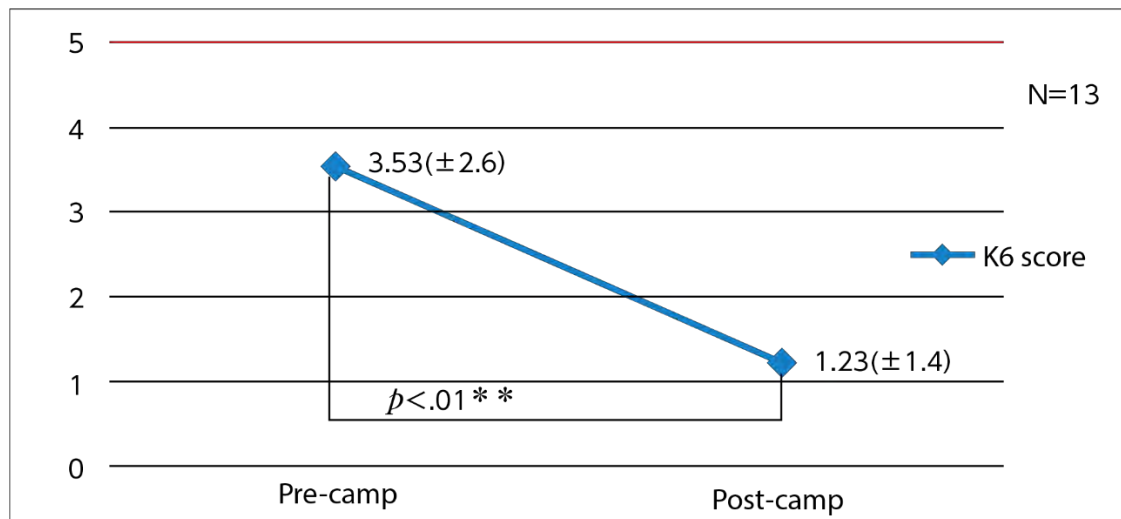


Figure 3. Before/after comparison of guardians' K6 scores (SD)

4. Discussion

In terms of the effect on the children, they were able to develop their ability to communicate with each other and build relations with others through the team discussions and team activities to reach goals they set themselves, which likely reduced the worries they had before the camp. Moreover, results from the children's questionnaire like "It was fun getting to know new friends," "I'm happy I could make new friends," "I made many friends. We got along when we worked together," and "It was fun lighting a fire" indicate that they had a sense of accomplishment and improved confidence. The children's impressions from Learning about the Mind, such as "It was fun," "It felt good," "It was really educational to move the body freely," and "I want to do it again," as well as results from the staff post-camp questionnaire, such as "I was surprised by the relaxing effect of the yoga as there were some children sleeping," "I was amazed by how the children immediately became quiet and focused on their breathing," and "It seems the yoga had a relaxing effect as it looked like they felt good," indicates that it had a relaxing effect. Moreover, responses like "I was surprised how children who previously had been uncomfortable in the teams became engaged as they helped their juniors," "I saw children who had participated several times giving way to and helping children here for the first time," "Children who had been here before had grown tremendously and I saw many instances throughout the day where the children helped each other or showed consideration for younger ones," and "I saw children who had been here before take leadership" show that many staff members felt the children's growth as repeaters actively helped first-timers, demonstrating autonomy. This might be because the children found their role through the activities and came to have a stronger awareness of being seniors.

The value for the PTSSC-15 conducted with the children pre-camp was extremely low, and while the post-camp score was higher, they were both lower than the PTSCC-15 average score of 29.5 for children in regular families as measured in a study by Tominaga et al.⁴⁾ This was six years after the earthquake and the children were young at the time of the disaster, so it might be necessary to reevaluate future questionnaire contents, assessment methods, and subject ages.

The pre-camp K6 value for the guardians was lower than the standard score for general groups (5 points),⁵⁾ and the post-camp value was even lower. This might have to do with the time they had to refresh as individuals, being able to remove themselves from daily life for the first time in a long time and spend time as they wished, as indicated by questionnaire results like "I haven't been able to relax like this in a while" and "I got to do something out of the ordinary." Moreover, responses like "I was happy to see them come home with a smile on their face and talking about how much fun it was" and "I'm happy you let them try out a variety of things" show that it made the guardians themselves happy. Responses like "I feel [it] made them stronger" and "It seems they could really build confidence" also suggest that it could alleviate some of their worries about child-rearing and have a positive effect on their mental health, which then helped reduced their K6 value.

The above suggests that continuing this camp project for parents and children in disaster areas will have the effect of assisting the children's healthy growth, reducing the parents' and children's psychological stress, and provide mental stability. In addition, the guardians gave suggestions like "How to praise and reprimand a child," "Mindset for raising a child," and "An opportunity to get tips and learn concretely about child-rearing," which confirmed that there is a strong interest in child-rearing, so that is something we want next year's program for guardians to reflect.

5. Summary

The Project was conducted with parents and children living in disaster areas with the aim of raising their interest in mental health as well as increasing their self-care ability and ability to deal with stress by removing them from their stressful situations even for a short while and allowing them to refresh themselves in an environment out of the ordinary.

We saw an increase in the children's PTSSC15 results after the camp, but it was lower than the average score of 29.1.⁴⁾ The results of the self-completion questionnaire showed that as many as 88.9% wrote "It was fun," and we received many positive responses to the freeform questions.

The results of the guardians' K6 were lower than the average score (5 points) both pre- and post-camp, with the post-camp score showing a considerable reduction. We received many responses to the self-completion questionnaire and we were able to confirm the requests that the guardians might have for future day camps.

Moreover, many of the staff perceived that the children had grown, and we believe that continuing this camp project for parents and children in disaster areas will have the effect of assisting the children's healthy growth, reducing the parents' and children's psychological stress, and provide mental stability. We hope to continue the project while reconsidering the eligible areas and ages, so that we can keep providing opportunities for socializing and refreshing to parents and children starting new lives in different areas.

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Report on Activities to Support Victims of the Great East Japan Earthquake in Tagajo City: Collaboration between Multiple Organizations and Supporters of Many Different Professionals

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1. Background

The Miyagi Disaster Mental Health Care Center (hereafter, MDMHCC) was established in December 2011 to work in the field of mental health following the Great East Japan Earthquake. A characteristic of the Center is that it has been conducting support projects as a point of contact mainly for local governments' health and welfare departments and staff working with disaster victims since the very beginning.

Victim support in Tagajo started with an outreach project following up on mental unhealth high-risk individuals (hereafter, the Outreach Project) after a present-state survey of disaster victim households in Tagajo in the fall of 2011. Tagajo is a commuter town of about 60,000 residents adjacent to Sendai. The disaster caused 156 deaths (including related deaths), 1,746 completely destroyed houses, 1,634 houses destroyed to a large extent, and 2,096 partially destroyed houses. In Tagajo, there were many more with private rental housing (1,402 households) scattered across town than with prefabricated temporary housing (373 households). Thus, the post-survey Outreach Project involved support activities from not only two organizations commissioned by Tagajo City (Office A, Medical Institution B) but also a health care center and the Center.

Since everyone had different approaches to support when the project started, it was necessary to undertake collaborative efforts. This report is intended to help us think about how to conduct support in the future by looking back on initiatives taken by Tagajo City and the Center as they engaged in support for high-risk individuals in collaboration with other organizations and people of various professions.

2. Methods

We aggregated FY2012–FY2015 data by year to extract from the Center's records those initiatives that likely facilitated collaboration between multiple organizations and supporters of many different professions.

3. Ethical Considerations

These data are a reuse of Tagajo disaster victim support project data and were presented at the 15th Japanese Society for Traumatic Stress Studies Conference. We used the data after Memoranda Relating to Data Provision of Disaster Victim Projects were exchanged between Tagajo City and the Center.

4. Results

(1) Support recipients

Present-state questionnaires were distributed to households in Tagajo whose houses were at least partially destroyed, asking about living and health conditions. Moreover, a prefectural health survey for private rental housing has also been conducted since FY2012. The number of persons receiving support for each fiscal year is shown in Table 1. In FY2011, Office A was commissioned by Tagajo City to visit all households after the disaster victim present-state survey, and it was those individuals for whom a second visit was deemed necessary that received support in FY2012. Since FY2013,

support has been given to those to whom the indicators of “K6 score of 13 or more,” “Drinks alcohol from the morning or noon,” or “Suspended treatment” apply.

Table 1				(persons)
Fiscal year	FY2012	FY2013	FY2014	FY2015
Support recipients	200	496	381	350

(2) Supporters’ affiliations and professions

Office A : Before the earthquake, they were primarily tasked with providing guidance to company staff after health checkups.

Two certified dieticians, two public health nurses, and two nurses providing support twice a week.

Hospital B : Psychiatric hospital. One psychiatric social worker and one nurse provide support twice a week.

Health care center: Municipal health care center in Tagajo. One to three public health nurses provide support once a month.

Center: A doctor provides support once a month. Two clinical psychologists, two public health nurses, two psychiatric social workers, and two nurses provide support thrice a week.

(3) Initiatives

Table 2 shows initiatives that likely facilitated collaboration.

Table 2. Number of initiatives (times)

Fiscal year	1. Case meetings	2. General meetings	3. Discussions	4. Study meetings	Total
FY2012	19	7	3	2	31
FY2013	35	20	4	1	60
FY2014	37	15	11	2	65
FY2015	43	21	8	3	75

1. Case meetings were held for supporters to discuss cases where assessment was difficult. A doctor gave advice once a month.
Typical cases included depression, suicidal thoughts, suspected PTSD, alcohol-related issues, and sleeplessness.
2. General meetings were held for everyone involved in the support to share feedback about the present situation and discuss the future direction of the support.
3. Discussions were held between responsible persons and the Center as needed in preparation for case meetings and general meetings.
4. Study meetings were doctor-led opportunities to learn about the following 17 mental symptoms so that all supporters could carry out accurate assessments of mental health conditions.
 - 1) Feeling depressed 2) Loss of interest or happiness 3) Fatigability and low energy
 - 4) Suicidal thoughts 5) Feelings of guilt or worthlessness
 - 6) Reduced ability to concentrate or make decisions 7) Sleeping disorders
 - 8) Loss of appetite 9) Grief 10) Social withdrawal 11) Re-experiencing
 - 12) Avoidance 13) Hyperarousal. 14) Negative cognitive or mood changes due to trauma
 - 15) Symptoms of mental disease (apparent) 16) Reduced cognitive functions, etc.
 - 17) Excessive alcohol consumption and related issues

5. Discussion

The number of case meetings has increased each year, likely because it has become possible to discuss difficult assessments with everyone on a day-to-day basis. As a result, we surmise that we have been able to recognize the features of the different organizations and supports of various professions, thereby conducting the support while compensating for each other's deficiencies. Moreover, thanks to the doctor giving advice at study and case meetings once a month, we believe that the supporters have become able to conduct mental health assessments accurately and effectively. Supporters alternate at the different support offices, so we will continue to hold general and study meetings centering on the case meetings.

Soberity Activities in Natori City: Setting up a Health Salon and Their Effect

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1. Introduction

(1) Initiatives against alcohol-related issues in Natori

Natori City is located on the Pacific coast of Miyagi Prefecture. Most of its coastal areas were washed away by the tsunami following the Great East Japan earthquake, causing almost 1,000 deaths and an unprecedented disaster. We started noticing alcohol-related issues in prefabricated temporary housing and private rental housing where some would repeatedly consume alcohol in excessive amounts with negative effects on health and social life as well as being diagnosed with addiction and receiving treatment at specialized hospitals. Causes are likely to include the death of friends and family and the loss of a job for middle-aged men, but this became more apparent as supporters gained insight into what happens in prefabricated temporary housing. Thus, relevant organizations (the NPO Miyagi Sobriety Association, Tohokukai Hospital, MDMHCC, and other relevant organizations in Natori) came together to start a sobriety society in the Sennan area. In June 2015, they organized a lecture meeting titled “Society for Hearing the Stories of Those Who Quit Drinking,” not only for addicts but for all people who want to drink less, as well as starting meetings as a society with the same name (hereafter, “the Sobriety Society”) once a month.

Participants in the abovementioned Sobriety Society were not only persons with alcohol use disorder (hereafter, “persons concerned”) but also family members, persons who consume a lot of alcohol, and supporters. It was run as a normal sobriety society, but few persons concerned participated (0–3 persons), so it never got off the ground. Initially, there were participants who wanted to drink more moderately, but since the stated goal was to quit drinking, it became difficult for them to participate and they tended to stop coming. Because of this, supporters started expressing the need for initiatives to reduce drinking and a society for moderate drinking to prevent alcohol use disorder.

(2) Initiatives for moderate drinking

There are very few societies for moderate drinking in Japan. Thus, supporters first underwent BIs (brief internships) and training in the Happy Program, discussing matters with the heavy drinkers who were the main target group. As a result, they decided to start a society not only for moderate drinking, but with the aim of supporting the mental and physical health of middle-age men and supporting moderate drinking within that context. More concretely, they organized a lecture meeting titled “Lecture Meeting for a Good Relationship with Alcohol” (Natori Municipal Health Care Center) aimed at local citizens. This led to the full-scale opening of the Health Salon (also known as the Society of Moderate Drinking) in December 2015. In addition, they also conducted the Happy Program and mini health lectures with the help of the Iwanami Branch of Shiogama Health Care Center.

2. The Health Salon initiative

(1) Health Salon participants

As shown in Figure 1, those invited were the participants of the abovementioned lecture meeting as well as citizens who previously had had contact with supporters and had an interest in moderate drinking. They should also fulfill the following two criteria.

- 1) Residents of Natori City or men middle-aged or older who experienced the disaster in Natori City.
- 2) Heavy drinkers and persons thought to be at risk of alcohol use disorder. (However, this excludes those already diagnosed with alcohol use disorder and who need to quit drinking as well as those judged by supporters to be extremely close to having alcohol use disorder.)

The participants included disaster victims who had been visited by the MDMHCC, persons in need of less drinking and mental or physical health measures under the dedicated guidance of Natori Municipal Health Care Center, persons already having supporter contact through societies for disaster victims and their families, and persons invited by supporters. Subsequently, participants started inviting their friends. By age, they included four persons in their 60s, four persons in their 70s, and four persons in their 80s, the majority being retired.



Figure 1. Pathways for joining the society

(2) Contents of the Health Salon

Figure 2 shows initiatives at the Health Salon for the first half-year.

The contents had a two-part structure. The first part was for everyone and consisted mainly of socializing to become friends by working together and gaining knowledge about alcohol consumption and health. This was done in the kitchen of the Health Care Center and elsewhere, and it was managed by the MDMHCC and the Natori Municipal Health Care Center. More concretely, participants socialized through mini health lectures (diabetes, blood pressure, sleep, and alcohol for mental and physical health, etc.), making lunch together, watching cultural performances, hiking, and so forth. The mini health lectures by public health nurses and others were especially popular, and there were many questions. Participants received health information through the mass media, but as they had a variety of questions, it was important that they had somewhere they could easily ask questions and get good answers.

Health Salon event contents and number of participants					
		Participants	Mini lectures, discussions	Cooking, working together	HAPPY
Preparation	November 26	6	Healthy use of store lunchboxes	Choosing store lunchboxes	
First session	December 10	8	Discussing the society's management and regulations	Cooking water celery hot pot	Basics
Second session	January 14	9	Reading health checkup results and designated health guidance	Cooking seafood hot pot	Applications Basics
Third session	February 11	7	The HAPPY Program and alcohol	Cooking curry	Results and evaluation
Fourth Session	March 17	7	High blood pressure and salt (on day trips to hot springs)	Trying non-alcoholic beers	Results and evaluation
Fifth Session	April 14	8	Exercises and stretching, alcohol and sleep	Lunchboxes for flower viewing	Graduation Basics

9/9/2016. National Convention of the Japanese Society of Alcohol-Related Problems

Figure 2. Events at the Health Salon for the first half-year

The second part was an optional program for those who wanted to drink more moderately (the HAPPY Program).

Since participation in the second part was optional, the first session was attended by only four people, half of those there that day. However, the number gradually increased with each session, so that almost everyone came to join the second part, excluding non-drinkers. This was likely because of the improved group dynamic resulting from working together in the first part and because most new participants already wanted to drink more moderately.

(3) The HAPPY Program

The HAPPY Program is normally held over a total of three sessions, and each session is expected to be relatively short. The HAPPY Program at the Health Salon was led by a public health nurse at the Iwanuma Branch of Shiogama Health Care Center, who was also responsible for each session. We issued a graduation certificate to the participants who completed a course of three sessions, but since there were those who joined midway through the year as well, we basically repeated the course program every three sessions. By having graduates continue to attend, they could also give advice and provide support to new participants as their seniors. It is also likely that the graduates themselves could increase their own motivation to drink moderately by repeatedly hearing the same lectures and giving advice to new participants.

3. Results from the Health Salon

The participants of the HAPPY Program were asked to record their daily alcohol intake and report it as a drinking diary. Figure 3 shows changes in alcohol intake and Figure 4 changes in the number of days off drinking. The participants' average alcohol intake was almost halved from 7 to 3.5 drinks after four months of participating in the HAPPY Program. Moreover, participants whose alcohol intake did not change so much started taking one day off drinking when they had never done so before the intervention. The results can be seen in the values from health checkups shown in Figure 5. Compared to one year before, the values for blood pressure, neutral fat, and γ -GPT had all become normal.

We explained to the participants the ethical considerations with regard to privacy that applied to the contents of the drinking diaries and the health checkup values.

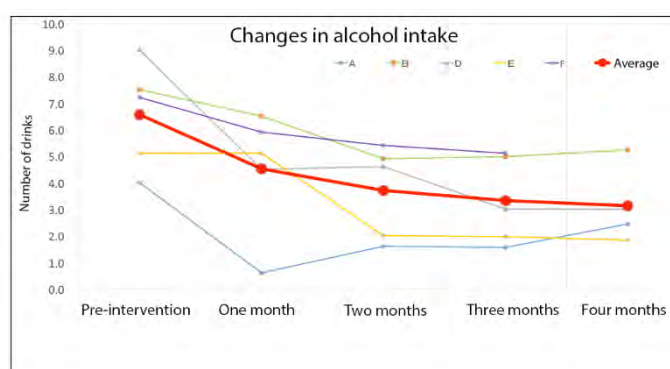


Figure 3. Changes in alcohol intake for HAPPY Program participants

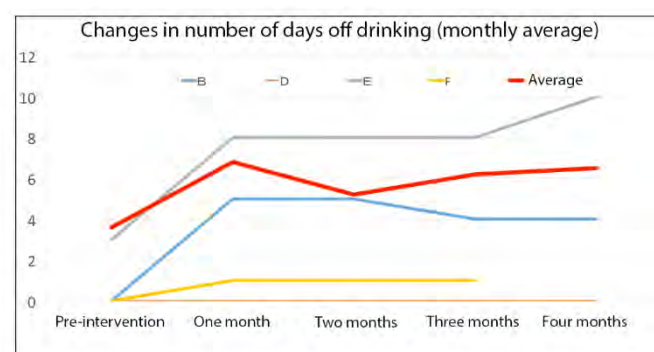


Figure 4. Changes in number of days off drinking for HAPPY Program participants

Examination item	June 2015	June 2016
Weight	65. 1	64. 1
BMI	24. 3	23. 9
Blood pressure	145/91	117/72
Neutral fat	249	106
AST (GOT)	28	27
ALT	16	14
Γ-GTP	49	38

Figure 5. Changes in participants' examination results

4. Summary

We believe these activities were effective.

- There was an effect in terms of moderate drinking as the number of HAPPY Program participants increased and their alcohol intake was halved.
- Participants socialized well regardless of how the earthquake had affected them, and their bonds deepened.
- Their interest in health issues became stronger and their checkup results improved.
- They developed awareness about contributing to helping other people with their health issues.
- Initially just formally connected to a public health nurse or a supporter, members would socialize and help each other as well as take part in the society's planning and management.
- The checkup results show that it fulfilled the function of a tool to be used after designated health guidance.
- More citizen volunteers participated as supporters.

These events and results were reported in a discussion at the 38th National Convention of the Japanese Society of Alcohol-Related Problems in Akita in collaboration with the Iwanuma Branch of Shiogama Health Care Center and Natori Municipal Health Care Center.

Longitudinal Study of Support for Children Born after the Great East Japan Earthquake and Their Families: Report of Baseline Survey Results from a City, Miyagi Prefecture

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1. Background

Children's living environment, starting with the mother-child relationship in infancy, is important for their emotional development. Past studies have shown that traumas in infancy have an effect on children's mental and physical development.^{1), 2)} Following the Great East Japan Earthquake in 2011, several follow-up surveys of children with direct experiences of the disaster were conducted, the results of which have been reported.³⁾ At the same time, as we have been providing local support, we have also consulted many children born after the disaster and without direct experiences of it. We are increasingly hearing from kindergarten teachers and administrative staff in disaster areas about children born after the disaster who "have trouble staying still" or "have difficulties with group activities." We feel that this tendency is more apparent in coastal areas that were greatly affected by the disaster and where restoration is taking time and support continues to be insufficient. Although a number of factors are plausible, we do not possess expertise that can clearly identify what support is needed, as no studies involving assessments of child development and parent mental health following large-scale natural disasters or long-term longitudinal intervention studies on children and their families have been conducted. Against this background, we realized the need for a long-term follow-up survey of children born after the disaster, which was incorporated in this study.

2. Aims

This study was conducted with the aim of understanding the mental and physical health condition of children born after the earthquake in City A, which sustained considerable damage, and of providing long-term support to high-risk families. Furthermore, we would like to add that the outcomes of this study are part of the Longitudinal Support Research on Children Born after the Great East Japan Earthquake and the Their Families, which is being conducted in collaboration with Iwate Children's Care Center, Iwate Medical University, and the Children's Mental Health Support Project Promotion Office, Fukushima University.

3. Methods

(1) Participants

Eligible participants included four-year-old children at kindergartens and nurseries in City A, Miyagi Prefecture, as of April, FY2016, and their guardians or teachers who provided consent to

participate in the survey. Children who moved to the area from a disaster area at least two years after the earthquake and who belong to a respective kindergarten were excluded.

(2) Procedures for the survey

We explained the survey to kindergartens and nurseries in the city and asked for their cooperation via the competent authorities in City A. At kindergartens and nurseries where we obtained consent, we distributed explanations of the survey and consent forms to the families of their respective classes, thereby soliciting participants. At this point, we explained that participation was voluntary and that consent could be withdrawn at any time. Moreover, since the survey would continue even after the children enter primary school, we also obtained consent from the Board of Education in City A in advance.

(3) Survey duration

We conducted a pilot survey at two nurseries in February–March 2016. We conducted the main survey at nurseries that had applied in July–September 2016. The parent survey across three prefectures started in October 2015 and was planned to run until all participants finish compulsory education at age 15 (March 2027). In order to see chronological changes, the 12-year survey is to be conducted annually for the first three years and then biennially.

(4) Survey methods and feedback

We asked consenting guardians and children to fill out a questionnaire and participate in an interview as well as have nursery teachers fill out a questionnaire (Table 1). On the day of the survey, we had the parents and children come to the nursery, where the children underwent an individual cognitive function examination and the parents an individual interview. After the survey, we provided feedback on the results of the nursery as a whole to the nursery and feedback on individual results to each family. We held individual consultations with families deemed to require support as well as case meetings at the nursery.

(5) Ethical considerations

The study has been approved by the ethical boards of the School of Medicine, Iwate Medical School, and of Fukushima University. We ensured that private information was sufficiently protected.

Table 1. Survey

Questionnaires	About the children	Guardian responses	<ul style="list-style-type: none"> • Child problem behavior: SDQ • Child problem behavior: CBCL • Checklist for autism: Japan version of M-CHAT • PTSD assessment: created based on Parent Report of the Child's Reaction to Stress
		Nursery teacher responses	<ul style="list-style-type: none"> • Child problem behavior: SDQ • Child problem behavior: TRF
	About the guardians themselves	<ul style="list-style-type: none"> • Lifestyle habits, living environment, financial situation, disaster impact • Social relations (social capital, social networks, social support) • PTSD: IES-R • Mental health: K6, BDI-II • Happiness: WHO26 • Post-traumatic growth: PTGI • Relational style: RQ 	
Interviews	The children	WPPSI	<ul style="list-style-type: none"> • Picture completion • Toy blocks
		KABC-II	<ul style="list-style-type: none"> • Counting • Word order • Picture completing
	The guardians	<ul style="list-style-type: none"> • Linguistic development: PVT-R • Good enough facial recognition test 	
		<ul style="list-style-type: none"> • Mini-International Neuropsychiatric Interviews: MINI • Mothers' experiences of adversity and trauma: created based on ACE and UPIC-V • Postpartum depression: EPDS 	

4. Results

(1) Basic attributes of the participating families

Out of 128 eligible children at five nurseries in City A, we obtained cooperation from 30 families (17 boys, 13 girls, 23.4% consent rate). The children's average age in months at the time of interviews was 53.2 months (± 4.51 SD). 83% of these families had suffered damage to their houses because of the earthquake and tsunami, 33% had lost family or relatives, and 10% had co-habiting family members who had died or gone missing.

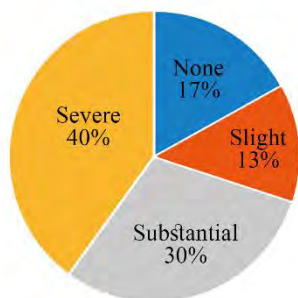


Figure 1. Extent of house damage

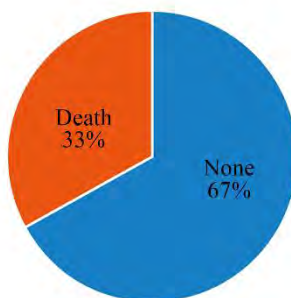


Figure 2. Harm to family and relatives

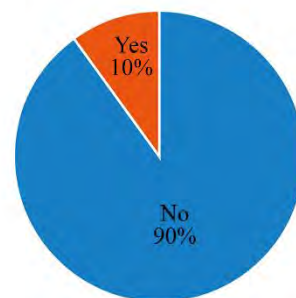


Figure 3. Co-habiting family member dead or gone missing

(2) Results of the children

① Questionnaire results (Figure 4)

a. CBCL / TRF

The total score of the child behavior checklist (CBCL) completed by the guardians showed that six children (20.0%) were borderline and four children (13.3%) were in the clinical range. At the same time, the total scores of the teacher's report form (TRF) completed by the teachers showed that seven children (23.3%) were borderline and eight children (26.7%) were in the clinical range.

b. SDQ

The TDS (total difficulties score) of the children's Strengths and Difficulties Questionnaire (SDQ)⁵⁾ showed that one child (3.3%) was in "high need" (of support) according to the guardian assessment, and one child (3.3%) was in "some need" (of support) and one in "high need" according to the teacher assessment.

c. M-CHAT

The total 23-item assessment of the Modified Checklist for Autism in Toddlers (M-CHAT) completed by the guardians showed that two children (6.7%) were in the clinical range.

② Development test results (Figure 5)

The raw scores of all test items were converted into assessment scores, aggregating them as average 10 and standard deviation ± 3 . As a result, the average assessment score for each test was average or below average. We found no difference between the tests.

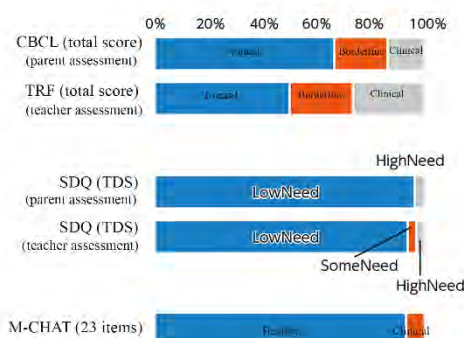


Figure 4. Results of child questionnaires

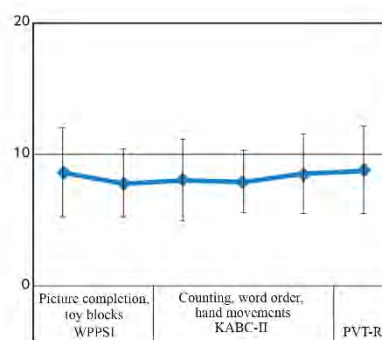


Figure 5. Results of child development tests (assessment score)

(3) Results of the caregivers

It was primarily the mothers who responded to the questionnaires and participated in the interviews, but the fathers of two families responded.

① Questionnaire results (Figure 6)

We used the Kessler Psychological Distress Scale (K6)⁷⁾ to screen general mental health, the Beck Depression Inventory-Second Edition (BDI-II)⁸⁾ to assess depression, and the Impact of Event Scale-Revised (IES-R)⁹⁾ to assess PTSD. The results showed seven persons (23.3%) in the K6 clinical group (cut-off point at 13 points), three persons (10.0%) suffering from light depressive symptoms and three persons (10.0%) suffering from intermediate depressive symptoms according to the BDI-II, and three persons (10.0%) in the IES-R clinical group (cut-off point at 23 points).

② Interview results (Table 2)

The assessment using the Mini-International Neuropsychiatric Interviews (MINI) showed that one person had previously suffered a major depressive episode, one person a manic episode, two persons alcohol addiction, and two persons alcohol overconsumption, and one person was deemed to suffer from generalized anxiety disorder. Moreover, two persons were deemed to have light suicide risk.

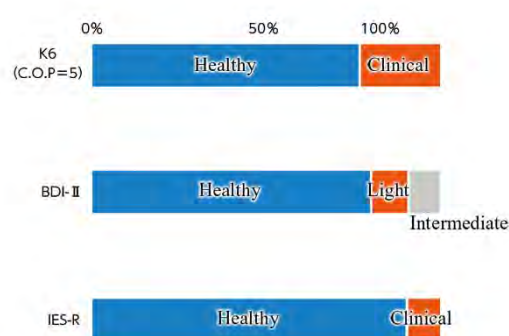


Figure 6. Questionnaire results for guardian mental health

Table 2 clinical diagnoses by MINI (overlap)

Major depressive episode (past)	1 person
Manic episode (past)	1 person
Suicide risk (light)	2 persons
Alcohol addiction	1 person
Alcohol addiction + generalized anxiety disorder	1 person
Alcohol overconsumption	2 persons

(4) Children requiring follow-up

Based on a comprehensive assessment of the baseline survey, we set criteria for high-risk children (families) using the questionnaire and interview results, by which criteria 11 families were deemed to require follow-up. We provided individual consultations with a child psychiatrist and case meetings at the nursery. We also provided support for guardians if we deemed it necessary and helped connect them with help organizations.

5. Discussion

This study involved a baseline study on the basis of obtaining consent and registering 30 families living in City A, Miyagi Prefecture, which allowed us to build a foundation for a continuous long-term longitudinal survey. The baseline survey yielded criteria for families requiring follow-up based on a comprehensive assessment of questionnaires and interviews. This resulted in 11 families requiring follow-up. Furthermore, this survey was part of a larger survey across three prefectures and surveys were also conducted in parallel in three other cities in Miyagi Prefecture, but the results of those surveys are not included in this report, as they were not available at the time of writing.

We conducted a cognitive function assessment of the children, consisting of a behavioral assessment using questionnaires and psychological tests. The behavioral assessment showed that 33.3% of the children were either borderline or in the clinical range according to the guardians' CBCL assessment, and this figure reached 50.0% according to the teachers' TRF assessment, which is a high proportion. The proportion of children requiring some form of support according to SDQ was 6.7% and thus not high. At the same time, the child development assessment showed no major difference from the general population. Since this study only involved 30 persons, it is difficult to verify that there were statistically significant differences, but it suggests that attention should be paid to the children's behavior overall.

With regard to the guardians, the BDI-II showed that 10.0% had intermediate depressive symptoms and IES-R that 10.0% were in the clinical range, while there were also guardians who fulfilled the MINI clinical

diagnosis. Again, despite the small sample, the results suggest that there is a need for comprehensive support that includes not only children but also guardians, as there are many in need of consideration.

This study suggested the possibility that prolonged stressful life after a disaster can have an effect on the development of children born after the disaster. The plan is to continue regular longitudinal surveys from next year to understand the reality and changes of children's and guardians' mental health in the aftermath of disaster lifestyle and the Great East Japan Earthquake as well as keeping up comprehensive interventions for families requiring follow-up.

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“Meetings” in a Municipality as Measured by a Questionnaire Survey: With a Focus on Male Participation

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1. Introduction

Following the Great East Japan Earthquake, a diverse variety of “meetings”^{*1} were held in disaster areas, and a variety of styles of initiatives were also conducted in Municipality A, where we are located. However, participating residents and supporters have commented on these initiatives by saying things like “It would be great if more people could join in” and “It would be good with more male participants”; this is more or less the same in different areas. In addition, there were also those worrying that men would be isolated or risk physical and mental unhealth if they did not participate in such “meetings.” Furthermore, since we had the same worry, we conducted a questionnaire survey in Municipality A to grasp the current state of these “meetings,” and we report the results by adding a discussion from the perspective of “male participation.”

2. Survey methods and survey participant breakdown

We distributed a questionnaire consisting of 12 questions on four pages (including a demographic question sheet) by post. Completed questionnaires were collected by post (some participants delivered them in person). The participants were chief administrators in all administrative divisions of Municipality A (including temporary housing societies) as well as temporary support staff, making a total of 50 persons. Table 1 shows a breakdown of the respondents.

Table 1. Respondent breakdown (N = 24)

Job title	Chief administrator Temporary support staff No response	6 persons (25%) 17 persons (71%) 1 person (4%)
Age	30s 40s 50s 60s 70s 80s No response	2 persons (8%) 0 persons (0%) 3 persons (13%) 8 persons (33%) 7 persons (30%) 2 persons (8%) 2 persons (8%)
Years of experience	【Chief administrators】	
	Under 1 year	1 person (4%)
	1 year or over, under 3 years	4 persons (17%)
	3 years or over, under 5 years	5 persons (21%)
	5 years or over, under 10 years	1 person (4%)
	10 years or over, under 15 years	1 person (4%)
	15 years or over, under 20 years	0 persons (0%)
	20 years or over	1 person (4%)
	Unknown	4 persons (17%)
【Temporary support staff】		

	Under 1 year	0 persons (0%)
	1 year or over, under 3 years	1 person (4%)
	3 years or over	5 persons (21%)
	Unknown	1 person (4%)

3. Survey duration and response rate

We dispatched the questionnaires in March 2016 with a deadline at the end of May 2016. We had a response rate of 50%.

4. Ethical considerations

We explained the following in writing when distributing the questionnaires.

(1) Answering the questionnaire is voluntary. Declining to answer it has no disadvantageous consequences.

(2) The survey results will be made publicly available.

Furthermore, we specified that returning the questionnaire would be considered providing consent.

5. Questions and answers

First, we divided the answers collected in the study into five categories according to type of “meetings” during aggregation. The following is a breakdown of the categories.

Physical health: Activities aiming to improve physical health through exercises, etc.

Mental health : Activities aiming to improve mental health through creative activities and other forms of exchange

Local activities: Activities to improve local connections (building and maintaining community)

Events : Activities to enjoy concerts and events themselves

Other : Activities that do not belong to the above categories

(1) Question 1

We asked about “meetings” regularly held in the local area where the respondents live (that they are in charge of), ※² both providing multiple choices and allowing freeform answers. The multiple choices included representative “meetings” held in many areas and “meetings” that we were aware of. The results clearly showed that a diversity of “meetings” were regularly held.

※¹ This study defines “meetings” as all activities where several people gather for a period of time, regardless of objective.

※² Since we distributed questionnaires to both chief administrators and temporary support staff, we used the two expression “live” and “in charge of.”

(2) Question 2

We asked about “meetings” irregularly held in the local area where the respondents live (that they are in charge of), allowing freeform answers. Between Question 1 and Question 2, the number of “meetings” for physical health and “meetings” for mental health are reversed.

(3) Question 3

We asked about “meetings” independently held in the local area where the respondents live (that they are in charge of), allowing freeform answers. These were mainly activities performed by local people for the benefit of local people, such as cleaning.

Questions 1–3 are summarized in Figure 1.

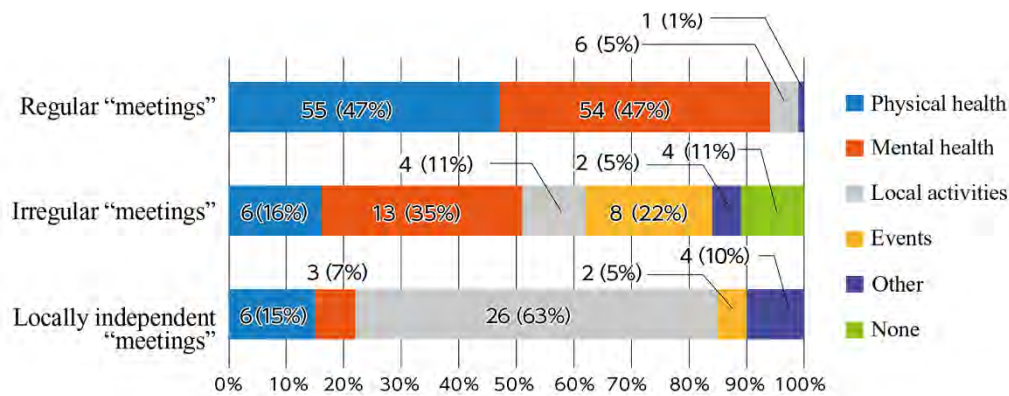


Figure 1. Regular, irregular, and locally independent "meetings"

(4) Question 4

We asked what percentage of locally resident men participated in the "meetings" identified in Questions 1–3. The result was **【80%–100%】** for local events, sports events, festivals, etc.; **【50%–70%】** for training trips; **【20%–40%】** for preventive care projects, karaoke, and tea-making sessions; and **【10% or less】** for lectures, cooking classes, etc.

The participation rate was high for cleaning events, festivals, local social gatherings, etc.

(5) Question 5

We asked the respondents about what reasons there might be for a high male participation rate for some events and what reasons there might be for a low rate in other cases.

【Reasons for a high participation rate】 Very interested in the contents; matching physical conditions (on a day off); personally invited; involves the whole district; an awareness or role that makes them feel indispensable

【Reasons for a low participation rate】 Not very interested in the contents; many women, making it difficult to join in; physical conditions (on a weekday); no habit of joining groups

The reasons 1) interest in the contents and 2) physical conditions (what day it is) appear important as they were common to both. Moreover, it seems that having a role also helps determine male participation.

(6) Question 6

We asked the respondents whether they would like men in their areas to participate more in the "meetings." The result was 16 "Yes" (70%) and 5 "No" (22%). This shows that they see male participation as an issue.

Furthermore, the reasons for answering "Yes" included health-related matters (lack of exercise, diseases related to physical inactivity, disuse syndrome, etc.) and preventing isolation (communication with neighbors). Meanwhile, the reasons for answering "No" had to do with everyone pursuing their own interests and enjoyment.

About 2/3 answered "Yes," which shows that many men are not participating. Moreover, there are worries that their non-participation can lead to physical or mental unhealthy.

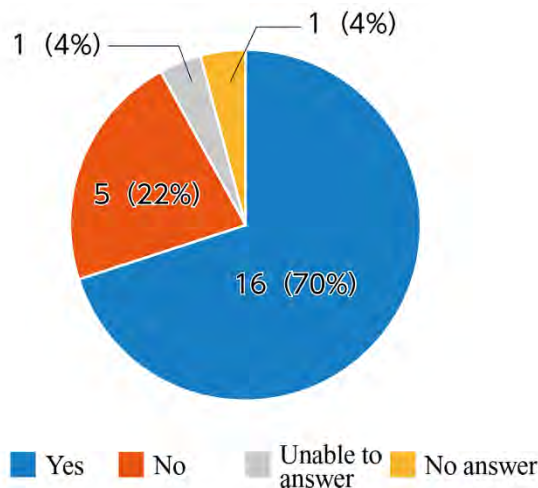


Figure 2. Do you want local men to participate more in “meetings”?

(7) Question 7

We asked about the positive aspects of male participation. The following are the answers we received.

- Men can fulfill certain functions (physical work, etc.) that make the meetings happen.
- Meetings become livelier if both men and women participate. Perhaps both men and women become more active when interacting with the other sex.
- We can talk about the sea while having a drink
- You get some peace of mind by seeing each other regularly (local crime prevention, checking each other’s well-being, working together in case of a disaster, etc.)
- They can live more active lives by spending time with different people and getting to know new people besides family and work colleagues

It seems that male participation can lead to livelier meetings as well as more activity on the local and individual levels.

(8) Question 8

We asked if they plan and hold men-only events in the areas they live (if yes, what the content is). The result was 16 “No” (70%) and 4 “Yes” (17%). The content was cooking classes, mah-jongg, tea-making sessions, karaoke, business activities, and New Year’s lion dances.

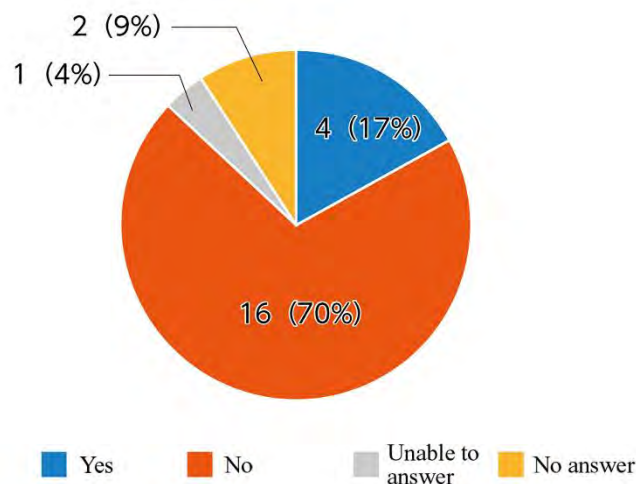


Figure 3. Do you hold men-only “meetings”?

(9) Question 9

We asked those who answered “Yes” to Question 8 what events were popular, to which they responded cooking classes, mah-jongg, and tea-making sessions.

Two answered cooking classes and both said they were popular. This might be because family structures have changed due to the disaster and men now have to cook for themselves.

(10) Question 10

We asked the respondents whether they thought it necessary to create new “meetings” where male participation is easier and, if yes, what kind of contents they should have. The result was 8 “Yes” (35%) and 7 “No” (31%), or about half-half. We also asked them to give their reasons for either answer.

【Good contents according to those who answered yes】

- Opportunities to talk (about local topics, society as a whole, etc.)
- Get-togethers with topics to discuss
- Cooking classes
- Don’t know, but considering it

【Reasons for answering no】

- They are active in everything and there are already many events
- It’s been five years, so it might be difficult to join in at this point

More or less the same number of respondents answered “Yes” and “No.” While some believe it is necessary, there are also those who think it would be difficult for them to participate in a new setting after five years. This suggests that it is important to consider whether a “meeting” is easily accessible to men before starting it.

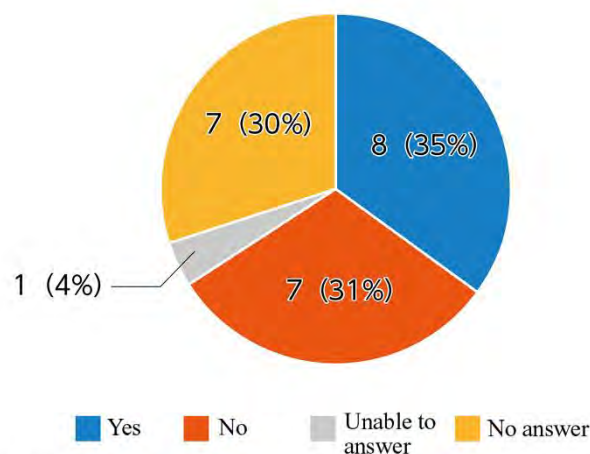


Figure 4. Is it necessary to hold “meetings” where male participation is easier?

(11) Question 11

We asked whether there are those who do not participate in local “meetings” but who are doing well in all other ways. The result was 16 “Yes” (73%) and 2 “No” (9%). The following answers show what concrete activities supported their wellbeing.

- Radio calisthenics by themselves
- Walking, strolling (individually or in a group of friends)
- Working in the fields

“Walking” was the most common answer by far. A likely reason for this is that it requires no special equipment and can be started without trouble.

(12) Question 12

As the converse to Question 11, we also asked what whether they worried about persons who neither participated in “meetings” nor seemed to live particularly active lives as well as about what they worried. The result was 14 “Yes” (68%) and 4 “No” (20%). The following were the worries of those who answered “Yes”.

- No interactions with neighbors
- Problems with alcohol (almost always drinking at home)
- Old age (issues of dementia, etc.)
- Already in bad mental or physical health
- Isolation leads to bad health in the form of physical unhealth, weak legs, and lack of mental energy
- Isolation makes it difficult to know their state and that is worrying

Most answers were worries about the fact that they were isolating themselves and the consequences of that.

6. Discussion

The questionnaire results show that while a variety of “meetings” are organized in the various areas, male participation is quite limited. Moreover, there appears to be a need to create “meetings” that are either more attractive or accessible to men, considering that the number of respondents wanting more male participation was more than three times higher than that of respondents not thinking so. Additionally, this is a problem that is not unique to Municipality A but is common to many municipalities. Moreover, they are paying attention to male participation and are implementing initiatives to ensure the wellbeing of local men.¹⁻³⁾ Based on such initiatives and our questionnaire results, it might be that male participation in “meetings” not only benefits men’s health, but might also be meaningful for community vitalization.

Ogawa⁴⁾ divides diseases related to physical inactivity into “the three types of I. those that affect the whole body, II. those that occur in one part of the body, and III. those that occur in the mind or nerves.” Based on this, “it is easy to just think of (2) one part of the body, but in reality, I. easily getting tired because of reduced heart and lung function or III. depressive tendencies and reduced cognitive function (looks similar to dementia) are important as well.” In fact, we received questionnaire responses worrying that they might incur physical and mental unhealth by not participating in the “meetings.” In addition, Ogawa writes that, “Diseases related to physical inactivity are 1. ‘restricted social participation’ that causes 2. ‘reduced lifestyle movement’ and 3. ‘leads to reduced physical and mental functions,’” which agrees with the contents of the questionnaire. This suggests that creating opportunities for men to go outside is important both for their physical and mental health and to help them live every day with energy. However, as shown by the results of our questionnaire, the reality is that men often tend not to participate, which is why we must not forget to ask the question, “What kind of contents will make it easier for men to participate?” Yet, since the questionnaire received quite a number of responses along the lines of “There are those who maintain their physical and mental health without participating in ‘meetings,’” we also should add that we also cannot forget the perspective that participating in “meetings” is not the only way to contribute to physical and mental health.

Characteristic of the initiatives discussed above¹⁻³⁾ is that opportunities are created for men to meet. The questionnaire results and the idea that “It is difficult to join in when there’s a lot of women,” which also facilitated the creation of the above initiatives,¹⁻³⁾ provide useful hints about how to create “meetings” that are accessible to men and that men might want to attend. The questionnaire results here did not go as far as a detailed, concrete examination of what kind of “meeting” would be attractive to men, but this is something we would like to explore if given the chance.

Finally, we would like to express our sincere thanks to everyone who helped us with this questionnaire as well as everyone at Municipality A.

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