

## Community Support Needs Assessment after a Major Disaster: Insights from the Activities of the Miyagi Disaster Mental Health Care Center

Naru Fukuchi<sup>1,2)</sup>, Shusaku Chiba<sup>2-4)</sup>, Mitsuki Katayanagi<sup>2)</sup>, Akiko Obara<sup>5)</sup>, Hidekatsu Shirasawa<sup>2,6)</sup>

Natural disasters have occurred frequently in Japan, and in recent years, recognition of the need for psychological support for residents affected by those disasters has been increasing. A public health perspective is needed in supporting disaster victims, and in many cases, support roles are taken on by local municipal offices, public health centers, and mental health and welfare centers. However, when the community as a whole has experienced severe damage, sufficient support cannot be provided by existing mental health services, and a “mental health care center” may be established. In Japan, six mental health care centers have been established since the Hyogo Prefecture Mental Health Care Center was established following the Great Hanshin–Awaji Earthquake, and efforts have been made toward the mental health care of disaster victims. During the Great East Japan Earthquake in 2011, Miyagi Prefecture suffered widespread damage. The Miyagi Disaster Mental Health Care Center, established in December of the same year, has provided mental health care for disaster victims over the course of about 10 years. This study presented seven years of activity statistics, from FY 2013 to FY 2019, of the Miyagi Disaster Mental Health Care Center. The total number of support cases was around 6,000–7,000, increasing over time until 2015, after which it decreased. The several years after the earthquake disaster involved many home visits for residents, who were extracted from screenings, and the records showed an increase in the number of residents who independently came to the Center seeking support. Additionally, the most common illnesses among those with mental illness were F1, F2, F3, and F4 in the ICD-10, with these four diseases accounting for a majority each year. The data showed an increasing tendency over time of F3 cases that occurred after the earthquake disaster. The issues faced by residents leading to support and community needs from support organizations changed depending on the reconstruction phase. Support organizations needed to carefully observe changes in the community and provide timely and necessary support. Continuous human resource development is needed at the national and prefectural levels, while keeping in mind medium- to long-term support following a disaster. Health authorities must also understand needs depending on the recovery period by analyzing the activities of mental health care centers across the country.

**Index terms:** Great East Japan Earthquake, mental health care, mental health care center, outreach

Author affiliation: 1) Department of Psychiatry, Tohoku Medical and Pharmaceutical University  
2) Miyagi Disaster Mental Health Care Center  
3) Department of Child Psychiatry, Iwate Medical University Hospital  
4) Faculty of Education, Graduate School of Education, Tohoku University  
5) Miyagi Mental Health and Welfare Center  
6) Tohokukai Hospital

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## Introduction

Natural disasters, such as earthquakes and floods, have frequently occurred in Japan, and these disasters have various effects on the mental and physical health of residents. Psychological support following emergencies has come to be referenced under the common term of “mental health care” since around the time of the 1995 Great Hanshin–Awaji Earthquake. In the current mental health system of Japan, disaster psychiatric assistance teams (DPAT) engage in efforts in the acute phase immediately after a disaster. Subsequent medium- to long-term support is provided by existing community mental health services. In cases of damage that goes beyond the capacity of existing mental health services, a “mental health care center” may be established. Mental health care centers are not organizations based on a legal foundation; they are often funded by private organizations from national reconstruction funds on an emergency basis and serve the function of supplementing the mental health services in the prefecture.

Six mental health care centers have been established to date, each conducting distinctive activities. Management policies are entrusted to each prefecture, with different organizations having different management policies.

The Miyagi Disaster Mental Health Care Center (MDMHCC) has been engaged support activities in the mental health field in the disaster-affected area for approximately 10 years).

Figure 1 shows the number of consultations related to mental health in Miyagi Prefecture before and after the earthquake disaster. The overall number of consultations increased after 2011, and the MDMHCC has mostly overseen these increased numbers of cases. Many years have passed since the establishment of the MDMHCC, and as the status of recovery in the community has changed, the content of support needed from the MDMHCC by each local government and related institution have also changed.

This study aimed to provide an overview of the activities of the MDMHCC and compile the activity content over time to examine the ideal form of mental health activities in the medium- to long-term recovery following a large-scale disaster.

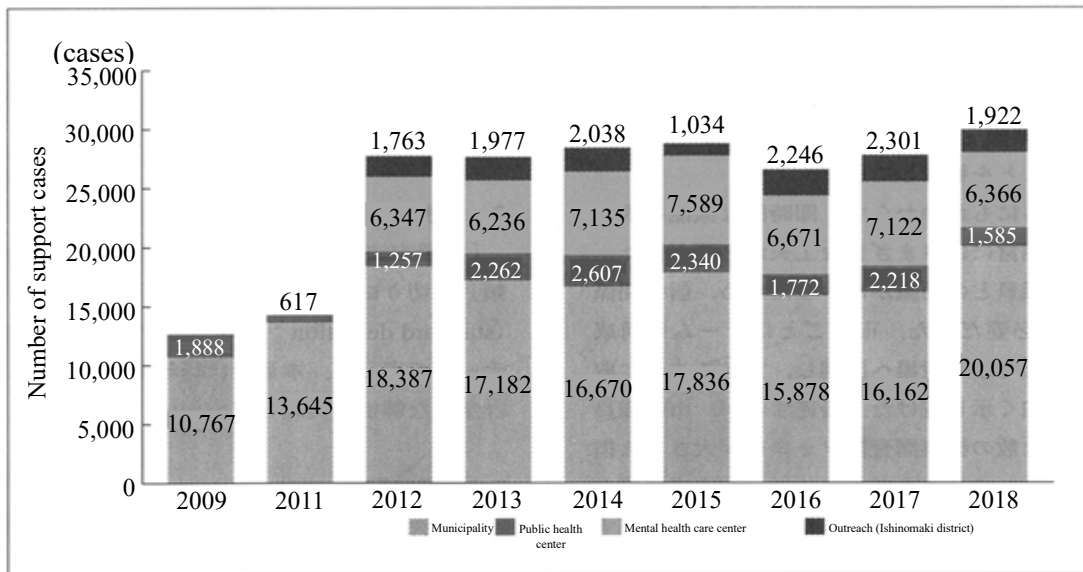
## 1. Background

Discussions on establishing a “mental health care center” began in early May 2011, during meetings of mental health medical professionals held regularly at the Miyagi Prefectural Office immediately after the earthquake disaster. In July, stakeholders submitted a request for securing financial resources to the Ministry of Health, Labour and Welfare of Japan. In September, decided that the established organization would be entrusted to the Miyagi Prefecture Mental Health and Welfare Association. By December, the MDMHCC opened, using a room in a multi-tenant building near the Miyagi Prefectural Office as a base of operations. In April 2012, this room was established as the Stem Center. The Ishinomaki Regional Center and Kesenuma Regional Center were established in the Ishinomaki Joint Government Building and Kesenuma Health and Welfare Office, respectively, with operations starting in earnest approximately one year after the earthquake disaster.

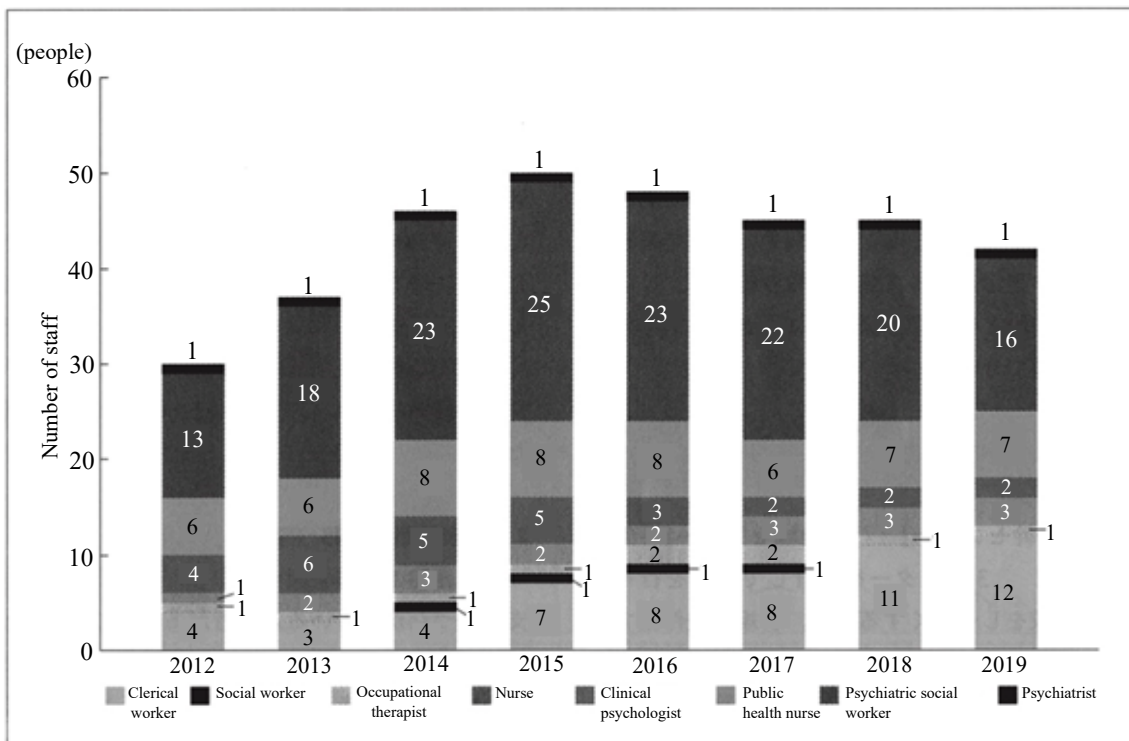
Figure 2 shows the changes in the number of MDMHCC staff. The scale of operations was small at first, with only seven staff members when the MDMHCC opened. The number of staff increased gradually, and by the time of full-scale operations in April 2012, the MDMHCC had 30 full-time staff (16 at the Stem Center, 10 at the Ishinomaki Regional Center, and four at the Kesenuma Regional Center). Staff members were people from many different professions, including psychiatrists, psychiatric social workers, public health nurses, clinical psychologists, nurses, and occupational therapists. Of the 30, 10 were from outside Miyagi Prefecture.

**Table Mental health care centers in Japan**

|              |   |
|--------------|---|
| January 1995 | Great Hanshin–Awaji Earthquake (magnitude 7.3) <ul style="list-style-type: none"><li>• Hyogo Prefecture Mental Health Care Center established in June 1995</li><li>• Reorganized and added research and medical functions, still operating today</li></ul>  |
| October 2004 | Niigata Prefecture Chuetsu Earthquake (magnitude 6.8) <ul style="list-style-type: none"><li>• Niigata Prefecture Mental Health and Welfare Association Mental Health Care Center established in August 2005</li><li>• Concluded activities in March 2015, after 10 years of activities</li></ul>                                  |
| March 2011   | Great East Japan Earthquake (magnitude 9.0) <ul style="list-style-type: none"><li>• Miyagi Disaster Mental Health Care Center established in December 2011</li><li>• Iwate Prefecture Mental Health Care Center established in February 2012</li><li>• Fukushima Mental Health Care Center established in February 2012</li></ul> |
| April 2016   | Kumamoto Earthquake (magnitude 7.3) <ul style="list-style-type: none"><li>• Kumamoto Mental Health Care Center established in October 2016</li></ul>  |



**Figure 1. Number of counseling cases regarding mental health in Miyagi Prefecture before and after the earthquake**  
(provided by Mental Health Promotion Office, Miyagi Prefecture Health and Welfare Department)



**Figure 2. Shifts in the number of staff members at the MDMHCC**

The MDMHCC began to build a new organization while its staff members were not yet fully acquainted with one another. In terms of job types, psychiatric social workers comprised a majority from the first fiscal year, and since the projects were mainly characterized by outreach, the recruitment focused on human resources engaged in community mental health before the earthquake. The total number of staff members peaked at 50 in 2015, after which it gradually decreased over the years.

Each time a new staff member joined the Center, training for new staff was conducted, and thorough efforts were made to avoid “multi-disciplinary teams” where roles are divided according to occupation. Instead, staff comprised “super-professional teams,” in which all members have a minimum level of knowledge and are involved in relationships that go beyond their job types. This way, they could provide one-stop support regardless of who comes for counseling.

Immediate functionality was required despite being an improvised organization, so various innovations were required for operation. Many staff members were unacquainted with the municipal staff, implying a need to build relationships of trust. Teams were formed in each municipality. The teams showed commitment to do what they could by visiting town halls even without any special requirements. The large number of post-health survey follow-ups was a heavy burden on the municipal staff, and the MDMHCC began to take charge of these high-risk individual follow-ups in the form of home visits. Through this physically intensive and steady work, the MDMHCC built relationships of trust with the municipalities. Municipalities that suffered severe damage also experienced increased workloads, and staff members were so busy in some cases that they were unable to carry out even their normal duties. At the time, even if a municipality independently recruited professionals to fill their workforce, they had trouble securing suitable personnel. Therefore, the professionals hired at the MDMHCC were dispatched to municipalities in the form of a secondment system. For the Ishinomaki area, which suffered particularly severe damage, five people were assigned as seconded staff members at the time of the opening of the MDMHCC (one in Ishinomaki City, one in Ishinomaki Public Health Center, one in Onagawa Town, and two in Higashimatsushima City). Seconded staff members worked in their destination municipalities for a majority of the time during weekdays and conducted their duties in accordance with the instructions of the municipality. The efforts of these seconded staff members also played a large role in building the relationships of trust with municipalities.

## II. Methods

We summarized and analyzed data from three centers, namely, the Stem Center, Ishinomaki Regional Center, and Kesenuma Regional Center. We handled the total number of consultation cases rather than the number of new consultation cases to compare pre- and post-earthquake circumstances more easily. When MDMHCC staff members provided support to local residents, information about the subject was entered into the business statistics system. We used seven years of data from FY 2013 to FY 2019 to retrospectively examine the characteristics of such data. The activities of the MDMHCC have been ongoing since December 2011, but an operational structure was not in place at the time of establishment. As such, detailed data in FY 2012 could not be collected.

### 1. Subjects

We set as analysis subjects the 47,037 cases (22,883 men, 24,154 women) for whom support was provided by the MDMHCC between FY 2013 and FY 2019.

### 2. Analysis method

We compiled data from the perspectives of support method, consultation route, sex and age, and disease classification. Continuous variables were expressed by mean values (standard deviation, SD), and categorical variables were expressed as percentages. We only presented changes over time. Statistical analyses were not included.

### 3. Ethical considerations

This study was conducted with the approval of the ethical review committee of the MDMHCC.

## III. Results

### 1. Shifts in support method (Fig. 3)

Figure 3 shows the shifts in support method. Resident support was tabulated as “home visits,” “office counseling,” “telephone counseling,” and “other.” “Other” included accompanying patients to medical appointments, case conferences, and support in group activities. The total number of support cases corresponded to 6,000–7,000, with numbers increasing over time until FY 2015 when they subsequently decreased. Beginning in FY 2013, support by “home visits” was consistently the most common, with 4,400 cases in FY 2015. The percentage of “home visits” decreased from FY2015, whereas that of “office counseling” and “telephone counseling” increased from the same period.

### 2. Shifts in consultation route (Fig. 4)

Figure 4 shows the shifts in consultation route. Some subjects received support through multiple consultation routes; as such, overlaps were noted in the data. From immediately following the earthquake disaster until FY 2019, health surveys of disaster victims were conducted in cooperation with Miyagi Prefecture and local governments, and a majority of cases involved “health surveys/all-household visits,” which provided support to high-risk individuals identified through this survey. This number showed a decreasing tendency after peaking in FY 2015. “Requests from administrative institutions,” such as municipalities and public health centers, increased over time and peaked in FY 2016. Additionally, “requests from individuals” tended to increase over time.

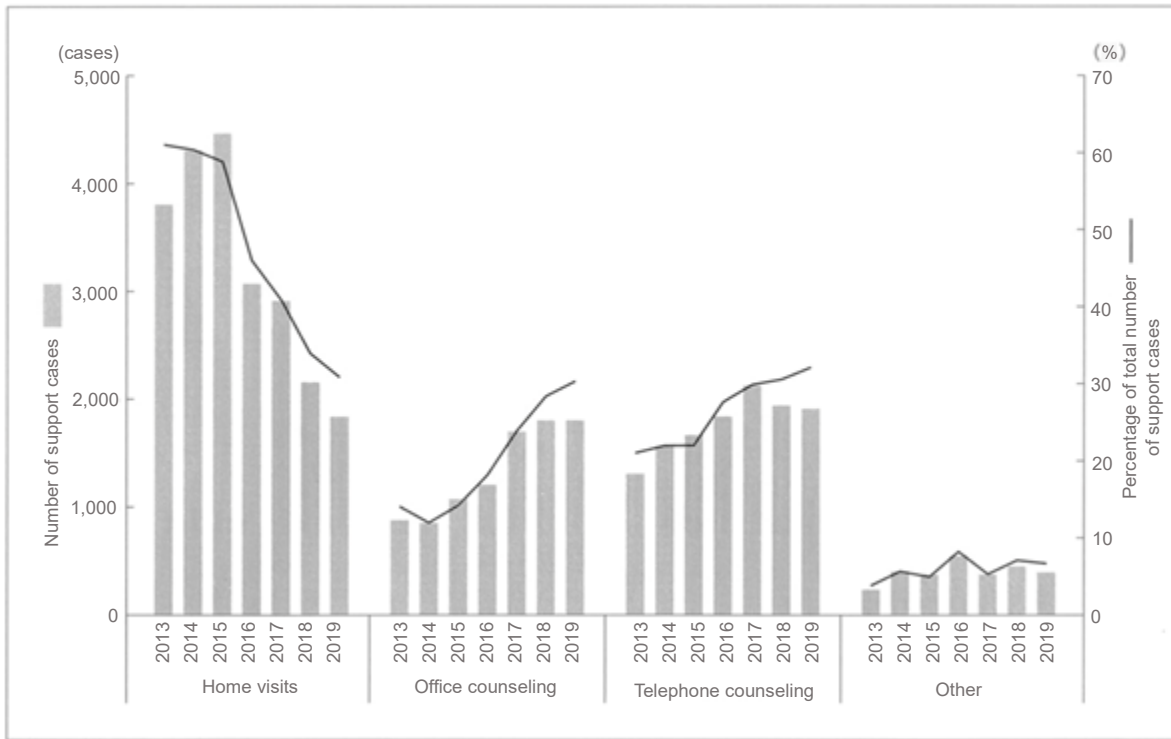


Figure 3. Shifts in support method

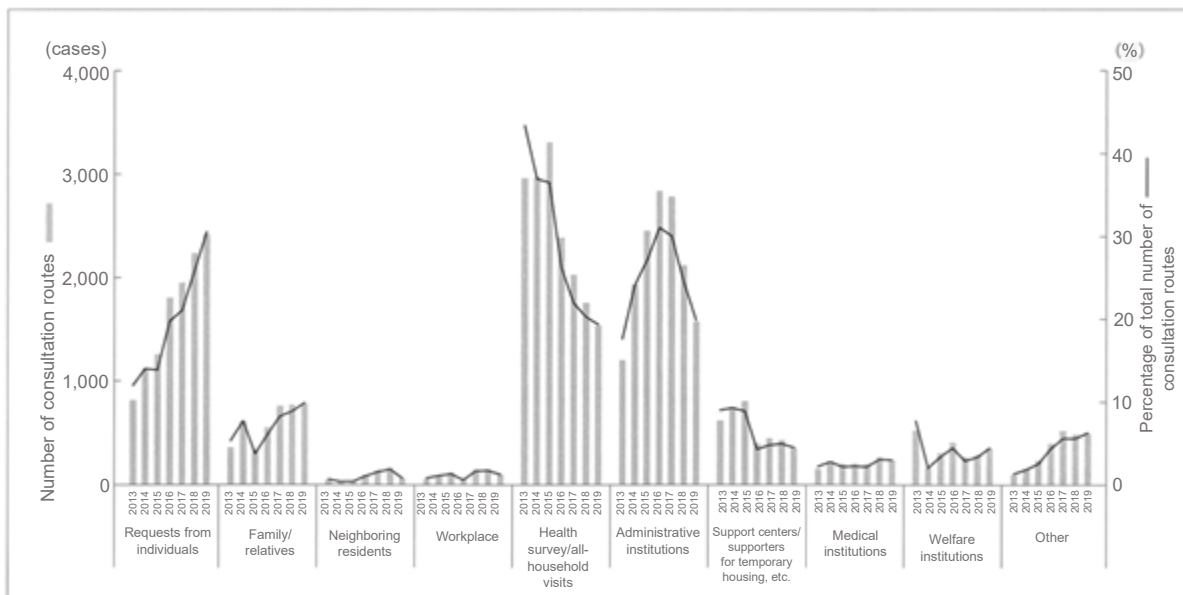


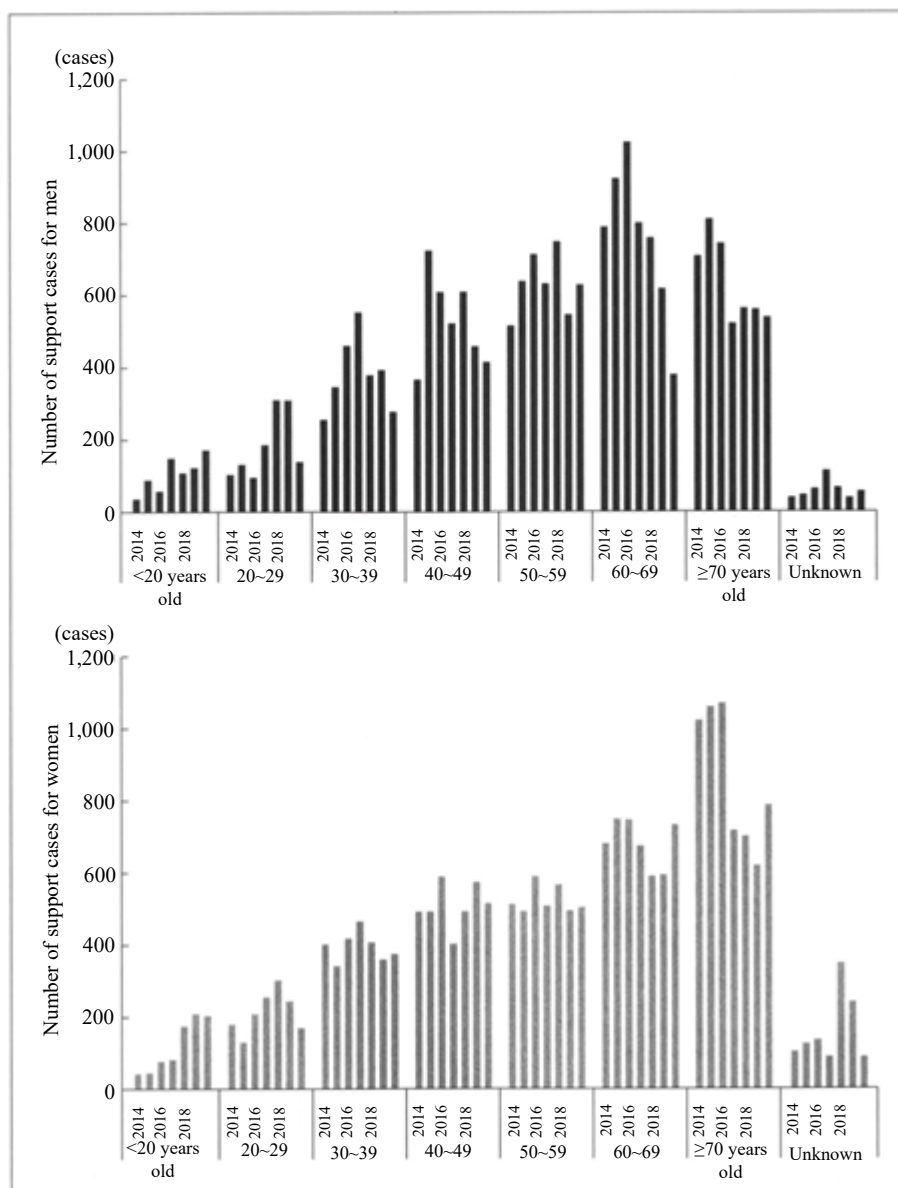
Figure 4. Shifts in consultation route

### 3. Shifts by sex and age (Fig. 5)

Figure 5 shows shifts by sex and age of the counsees, excluding subjects with unknown sex or age. In each fiscal year, we noted no large differences in the number of counsees by sex.

Across all fiscal years, the number of those aged 60 years or older among the total number of subjects reached 43.4% (20,450 cases). We noted a tendency for the number of women subjects to increase as the age group increased.





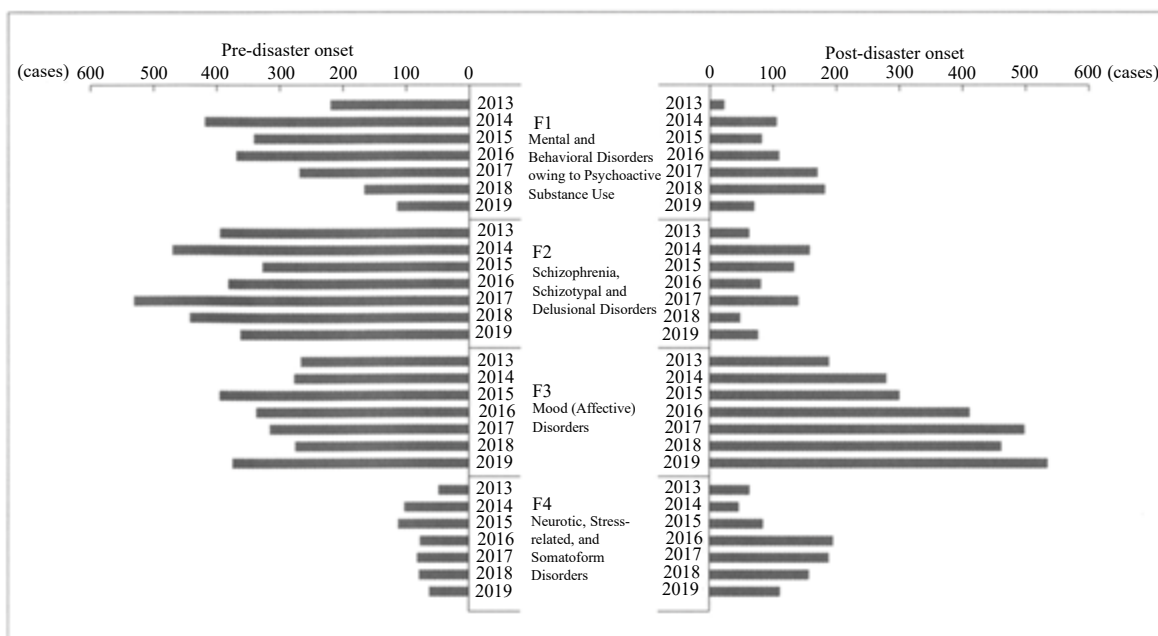
**Figure 5. Shifts in the number of support cases by sex and age**

#### 4. Shifts in disease classification (Fig. 6)

Figure 6 shows the shifts in the disease classification of counselees. For all fiscal years, “F1: Mental and Behavioral Disorders owing to Psychoactive Substance Use,” “F2: Schizophrenia, Schizotypal and Delusional Disorders,” “F3: Mood (Affective) Disorders,” and “F4: Neurotic, Stress-related, and Somatoform Disorders” accounted for the majority of cases. The onset period of these top four illness categories was classified into “pre-disaster” and “post-disaster.” The results showed that F3 cases that developed after the disaster tended to increase over time.

#### IV. Discussion

Research on mental health after a disaster has reported that few disaster victims independently seek counseling. Consequently, health authorities must identify disaster victims with psychological issues and provide support by going to the affected areas. Therefore, since its opening, the MDMHCC has established a policy of promoting home visits over office visits and developed support accordingly. As shown in Figure 3, the MDMHCC recorded a decrease in “home visits” and an increase in “office counseling” and “telephone counseling” over time.



**Figure 6. Shifts in disease classification by ICD-10**

The results indicated a decrease in the number of subjects who needed “home visits” over time and an increase in the number of residents who independently sought support and counseling. Additionally, after the earthquake disaster, Miyagi Prefecture conducted a large-scale screening through health surveys and all-household visits, focused on confirming the safety of extracted high-risk individuals, and worked to support residents. This subject group corresponded to the “health survey/all-household visits” (Fig. 4), and it accounted for a large fraction of consultation routes in the beginning but tended to decrease over time. This trend was because all health surveys targeted residents receiving housing support, such as temporary housing, and the number of residents who became independent from this support over time increased, with the survey population itself decreasing over time. Additionally, responses to the survey were voluntary, and the decrease in the response rate over time was also thought to be a factor<sup>9)</sup>. From these results, we concluded that mental health care for several years after the disaster focused on a high-risk approach by large-scale screening, such as health surveys, and that the necessary support for the extracted high-risk individuals could be provided by outreach such as home visits.

The shifts by sex and age (Fig. 5) showed that support for higher age groups was higher for both men and women. Many of the activities of the MDMHCC occurred during weekdays, and most of the methods were home visits. As such, the local

residents contacted may have been biased toward those who are at home during weekdays. However, even after considering such biases, many older people are reported, in the Miyagi Prefecture health survey, to be living alone in container-type temporary housing and that isolation and anxiety about their future lives are major issues. As such, they may have come to need support owing to this anxiety<sup>9)</sup>. We also noted many men in their prime working years between the ages of 30 and 50 years who needed support. Many of them had financial problems, such as employment, as their main complaint, indicating a high psychological burden in this age group from supporting their households and the community. Thus, depending on the nature of the community, attention must be given to the isolation of older adults and employment problems of working-age men following a disaster.

Regarding the disease classification of those needing support, we found that F1, F2, F3, and F4 accounted for the majority. Many of the F1 cases were residents with alcohol-related disorders that predated the disaster. As has also been indicated in other research<sup>6),8)</sup>, disasters do not relate to many new cases of alcohol-related disorders; rather, the alcohol consumption of existing cases increase and develop into problems. Many of the F2 cases were schizophrenia cases, often developed before the disaster. A variety of factors were thought to be involved, including exacerbation by the stress of the disaster itself, disturbances in what was already a fragile lifestyle foundation, and worsened access to medical care. We observed an increasing tendency

over time of F3 cases (often depression) that developed after the disaster. Although the earthquake disaster may not necessarily be the main cause of onset in all cases, there may have been a slight time lag before cases were identified. People were in a psychologically tense state immediately after the disaster, and as such, symptoms of depression and anxiety did not manifest. As material recovery progressed, the tension eased, and the psychological symptoms then surfaced. Our results indicate a need for outreach to residents with pre-existing mental illnesses until several years after the disaster and highlight the support needs for residents with depression that developed several years after the disaster.

This study has several limitations. For one, it is simply a compilation of activity statistics; no statistical tests were conducted. As such, all discussions are simply speculation. The current tabulation is the total number of support cases and not the number of people in need of support. The actual circumstances of the region may not be accurately reflected. Additionally, the state of community mental health differs by prefecture, and the changes experienced may not necessarily be the same in all regions. Next, the local residents with whom we were involved were only a portion of the people who needed support, and the tabulation results may not express the circumstances of disaster victims as a whole. Finally, the MDMHCC is not a treatment facility. We have endeavored to connect individuals to existing resources in the region to the extent possible. As such, we have not been able to see through the recovery of all people in need of support, and we are not able to analyze how our involvement is leading to the recovery of individuals.

## V. Recommendations

We would like to indicate precautions in the form of recommendations when attempting similar efforts as the MDMHCC. At the time of its opening, perhaps because we had no idea how much the MDMHCC would contribute to the community, the national and prefectural governments had not accurately communicated the expected period of activity, and all staff members were on single-year contracts. It was extremely stressful to work in a job where we did not know how long it would last and while our status for the following year was in jeopardy. As we continued our activities, we gradually gained recognition from the community, and in 2020, which was our 10th year of activity, the government announced that the MDMHCC would be extended for another five years, for a total of 15 years, which finally enabled us to envision on a broader scale. We recognized the necessity of analyzing the scale of the disaster and mental health care center activities, as well as the need to provide a guideline, to some extent, at

an early stage and to create an environment where staff members can securely work.

Additionally, in terms of management, the organization was established as an emergency response to a sudden disaster. Thus, all staff members greatly endeavored to advance the projects in the same direction. Although highly motivated, each of the professionals gathered from all over the country had their own strong feelings, and careful communication for building a team required a considerable amount of time. The number of meetings within each department inevitably increased, and all-staff meetings were initially held once a month. There was a need to form an organization while unable to accurately judge the aptitude and abilities of each staff member. We felt that there was not enough time to prepare for the activities. This kind of disaster is likely to happen again in the future. Thus, the government should consider training human resources at the national and prefectural levels and keeping them in reserve to create an organization like the MDMHCC.

When the MDMHCC first opened, our focus was on confirming safety through outreach, and we were engaged in physically and mentally taxing activities. Staff walked around roadless paths with a map in hand. The proportion of human wave tactics decreased over time, and there was an increasing number of activities that required professional skills, such as supervision of case studies and advice on health promotion for the entire community. In other words, the role that was demanded of the MDMHCC changed over time. Therefore, we had to allocate a large amount of our budget every year to training our staff in order to steadily acquire the skills that we anticipated would be necessary. We conducted community monitoring according to the recovery period. We confirmed the necessity of allocating human resources in anticipation of needs. We also noted the need to conduct a long-term analysis of mental health care centers, including the MDMHCC, to elucidate the community recovery process and the needs in each period.

## Conclusion

The issues faced by residents that lead to support and the needs of the community from support organizations change depending on the phase of post-disaster reconstruction. Support organizations for supporters need to carefully observe changes in the community and provide the necessary support at the appropriate time. Many organizations in the community support disaster victims, and the tabulations of the MDMHCC are not representative of the community. Therefore, the discussions based on the tabulations are hypotheses, highlighting the need for more detailed analyses in the future.