

* This English manuscript is a translation of a paper originally published in the *Psychiatra et Neurologia Japonica*, Vol.124, No.12 p.839-848 which was translated by the Japanese Society of Psychiatry and Neurology and published with the author's confirmation and permission. If you wish to cite this paper, please use the original paper as the reference.

Statistical Compilation

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

Naru FUKUCHI^{1,2}, Shusaku CHIBA^{2,3,4}, Mitsuaki KATAYANAGI², Akiko OBARA⁵,
Hidekatsu SHIRASAWA^{2,6}

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

Psychiatra et Neurologia Japonica 124: 839-848, 2022

Abstract

In recent years, Japan has experienced several natural disasters, and the need for psychological support for affected residents is being increasingly recognized. Support for disaster victims requires a public health perspective, and in many cases, the local municipal office, public health center, or mental health welfare center have a key role to play. However, existing mental health services alone are not sufficient to provide support in the cases of severe damage, necessitating the need for establishing disaster mental health care centers (DMHCCs) in the prefectures. In Japan, starting with the Hyogo DMHCC-set up after the Great Hanshin-Awaji Earthquake-six more centers have been established thus far to provide mental health care for victims.

Miyagi Prefecture suffered extensive damage in the Great East Japan Earthquake of 2011, and the Miyagi DMHCC was established in December of the same year and has since been providing psychological care to disaster victims. In this paper, we provide

information on the activities of the Miyagi DMHCC over the 2013 to 2019 period. The annual number of cases supported was 6,000 to 7,000, increasing over time until 2015 and decreasing thereafter. In the immediate aftermath of the disaster, many home visits were made to residents selected through screening, although the number of residents who approached the center for assistance increased over time. The majority of subjects with psychiatric disorders were classified as F1 (mental and behavioral disorders due to psychoactive substance abuse), F2 (schizophrenia, schizotypal and delusional disorders), F3 (mood disorders), and F4 (neurotic, stress-related and somatoform disorders) based on the ICD-10 classification. F3, comprising mostly depression that occurred after the earthquake, tended to increase over time. The issues faced by residents connected to support and the needs of the community for support groups were expected to change depending on the recovery phase. Support groups were expected to carefully observe the changes in the community and provide the needed support at the appropriate time.

To prepare for the next major natural disaster, it is important for Japanese government and prefectural governments to provide continuous human resource development. Moreover, it was also considered necessary to analyze the activity of DMHCCs to understand the needs according to the recovery phases following disasters.

Keywords: Great East Japan Earthquake, disaster psychiatry, Disaster Mental Health Care Center, outreach

Introduction

In recent years, Japan has experienced a high frequency of natural disasters such as earthquakes and floods, and it has become clear that these have a variety of effects on the physical and mental health of residents.¹⁾ Since the Great Hanshin-Awaji Earthquake of 1995, psychological support in the aftermath of such emergencies has come to be known as “disaster psychiatry.”³⁾ In the current disaster mental health

system in Japan, the acute phase immediately after a disaster is covered by the Disaster Psychiatric Assistance Team (DPAT), and medium- to long-term support is provided by existing community mental health services. In cases where the existing mental health system is unable to provide sufficient support, a “Disaster Mental Health Care Center” may be established within the prefecture. Disaster Mental Health Care Centers are not organizations

based on legal grounds, but are often funded and commissioned by the national recovery fund on an emergency basis to take on the role of supplementing mental health in that prefecture.

To date, six Disaster Mental Health Care Centers have been established, each of which has developed its own distinctive activities (Table).⁵⁾ The Hyogo Institute for Traumatic Stress was established after the Great Hanshin earthquake in 1995,²⁾ and the Niigata Prefecture Mental Health Care Center was established after the Mid Niigata Prefecture Earthquake in 2004⁷⁾; after the Great East Japan Earthquake in 2011, the Iwate Mental Health Care Center, Miyagi Disaster Mental Health Care Center, and Fukushima Disaster Mental Health Care Center were established in Iwate, Miyagi, and Fukushima Prefectures, respectively; and the Kumamoto Mental Health Care Center was established after the Kumamoto Earthquake in 2016. The management policies are left to each prefecture, and the organizations entrusted with the management and their policies vary widely.

The Miyagi Disaster Mental Health Care Center (hereafter, the Center) was established in December 2011, and has been involved in support activities in the field of mental health in disaster-

affected areas for approximately 10 years.⁴⁾ As shown in Figure 1, the number of consultations related to mental health in Miyagi Prefecture after the earthquake increased overall after 2011, and it can be seen that the center facilitated a large proportion of this increase. As many years have passed since its establishment and the situation of the region's recovery has changed, the content of the support required from the Center by each local government and related organizations has also changed.

The aim of this document is to review the activities of the center to date and examine the nature of mental health activities during the medium- to long-term recovery period after a large-scale disaster by tabulating the content of activities over time.

I. Background

If we look at the records from that time, we can see that from immediately after the earthquake, meetings were held regularly at the Miyagi Prefectural Government Office with mental health care workers in attendance, and in early May 2011, consideration was given to establishing a “Disaster Mental Health Care Center.” In July, a request was made to the Ministry of Health, Labour and Welfare to secure funding, and in September, it was decided to entrust the Miyagi Prefectural Mental Health

Welfare Association, the organization that would be set up, with the project. In December, the center was established in a room in a multi-tenant building near the Miyagi Prefectural Government Office. In April 2012, the “Core Center” was established in the multi-tenant building, the “Ishinomaki Regional Center” was established in the Ishinomaki Joint Government Office, and the “Kesennuma Regional Center” was established in the Kesennuma Health and Welfare Office, and the center began full-scale operations about one year after the disaster.

The number of staff at the center over the years is shown in Figure 2. When it opened in December 2011, it was a small operation with just seven staff, but the number gradually increased, and by the time it started full-scale operations in April of the following year, it had 30 full-time staff (16 at the core center, 10 at the Ishinomaki Regional Center, and 4 at the Kesennuma Regional Center). The team was made up of a variety of professionals, including psychiatrists, mental health and welfare workers, public health nurses, clinical psychologists, nurses, and occupational therapists. Ten of these staff members were from outside Miyagi Prefecture, and so, with no prior knowledge of each other, they had to start building a new organization from scratch. In terms of job type, mental health and welfare

workers made up the majority from the first year, and as the nature of the project was mainly outreach, it was considered that the staff were people who had been working in community mental health even before the earthquake. The total number of staff peaked at 50 in 2015, and has been gradually decreasing over the years. Every time there was a new hire, we would provide them with initial training, and instead of a “multidisciplinary team” where roles are divided according to job type, we have always strived to be a “super-disciplinary team” where all staff have a minimum level of knowledge and work together across job types so that anyone can provide one-stop support for consultations.

Despite being an ad-hoc organization, we were required to function immediately, so various innovations were needed for management. As many of the staff had no prior relations with municipal employees, it was necessary to nurture a relationship of trust. We organized teams for each municipality, and even in the absence of any particularly important business, we continued to visit town halls and patiently demonstrate our commitment to tackling the tasks that we could. As I will explain later, the follow-up after the large number of health surveys was a huge burden for the municipal employees, and it was decided that our

center would take on the task of following up on these high-risk individuals in the form of home visits. Through this painstaking work that required a lot of energy, we were able to build a relationship of trust with the cities and towns. In the cities and towns that were particularly badly affected, the workload of the staff increased, and there were times when they were so busy that they could not even carry out their normal duties. At the time, even when cities and towns independently recruited specialized personnel to fill vacancies, it was difficult to secure suitable personnel. For this reason, the professionals employed by the center were dispatched to the cities and towns in the form of “secondment.” In the Ishinomaki area, which was badly affected, five seconded staff members were assigned at the time of the center's establishment (one each from Ishinomaki City, Ishinomaki Public Health Center, Onagawa Town, and Higashimatsushima City). The seconded staff members worked at the city or town to which they were seconded most of the week, and in principle, they carried out their work under the direction of the city or town. The efforts of these seconded staff also played a major role in building relationships of trust with the cities and towns.

II. Methods

In this study, we conducted an analysis of three centers: the “Core Center,” “Ishinomaki Regional Center,” and “Kesennuma Regional Center.” To facilitate comparison before and after the disaster, we considered the total number of consultations rather than number of new consultations. When center staff provided support for local residents, they entered various data about the target persons into the statistical information system. In this document, we retrospectively examined characteristics using data from the seven-year period from fiscal year 2013 to 2019. However, because the management system was not yet in place at the time of the center's establishment, detailed data for fiscal year 2012 could not be collected.

1. Target

The 47,037 cases of support provided by the Center between fiscal year 2013 and 2019 (22,883 males, 24,154 females) were the subjects of analysis.

2. Analysis method

The data were compiled from the perspectives of “support method,” “consultation route,” “sex and age of the subject,” and “disease classification.” Continuous variables are expressed as mean values (standard deviation: SD), and categorical variables are expressed

as percentages. This document only presents changes over time and does not include statistical analysis.

3. Ethical considerations

This study was conducted with the approval of the Miyagi Disaster Mental Health Care Center's ethics review committee.

III. Results

1. Trends in support methods (Figure 3)

Trends in support methods are shown in Figure 3. Community support was tabulated as “home visits,” “visits to the center for consultation,” “telephone consultation,” and “others.” The category “others” includes support such as accompanying people to medical consultations, attending case conferences, and providing support within group activities. The total number of cases supported each year was between 6,000 and 7,000, and this number increased annually until 2015, after which it began to decrease. Since 2013, the largest number of cases has been supported through “home visits,” and in 2015 this number reached 4,400 cases. The proportion of home visits decreased from FY2015, while the numbers of visits to the center for consultations and telephone consultations increased over the same period.

2. Trends in consultation channels (Figure 4)

Changes in consultation channels are shown in Figure 4. Some people were connected to support through multiple consultation channels, so the data show some overlap. From immediately after the disaster until 2019, Miyagi Prefecture and local governments worked together to conduct health surveys of disaster victims, and “health survey/door-to-door visit” support for high-risk people identified through these surveys accounted for the majority of cases, but there was a tendency for this to decrease after peaking in 2015. Requests from administrative organizations such as municipalities and public health centers increased annually, but then began to decline after peaking in 2016. In addition, requests from individuals themselves tended to increase annually.

3. Trends by sex and age (Figure 5)

Excluding those whose sex or age was unknown, the trend by sex and age of people seeking counseling is shown in Figure 5. There was no significant difference in the number of people seeking counseling by sex in any year. Throughout all years, the number of people aged 60 or over accounted for 20,450 (43.4%) of all cases. Among women, there was a trend of more

people seeking counseling as they got older.

4. Trends in disease classification (Figure 6)

Figure 6 shows trends in disease classification of people seeking counseling. In all years, “F1: Mental and behavioral disorder due 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 time of the top four disease categories was classified into “onset before the disaster” and “onset after the disaster.” There was a tendency for the number of F3 cases that occurred after the disaster to increase over time.

IV. Discussion

Various studies have reported that disaster victims rarely visit for consultation themselves in the field of post-disaster mental health. Therefore, it is important to identify disaster victims who are facing psychological issues and provide support by visiting the community as much as possible. For this reason, from the time the center was established, we have developed support by making home visits rather than encouraging people to come to the

center. Figure 3 shows a decrease in the number of home visits over time, and an increase in the number of visits to the center for consultations or telephone consultations. It can be seen that the number of people requiring home visits has decreased over time, and that the number of people seeking support by visiting the center or calling by phone has increased. In Miyagi Prefecture after the earthquake, large-scale screening was carried out through health surveys and door-to-door visits, and efforts were made to support residents, with a focus on confirming the safety of high-risk individuals identified through the screening. This group of individuals corresponds to the “health survey/door-to-door visit” category in Figure 4, and initially accounted for the majority of consultation channels, but there was a tendency for this to decrease over time. One factor behind this was that all health surveys were conducted with residents who were receiving housing support, such as temporary housing, and over time, the number of residents who were becoming independent from this support was increasing, and the number of people surveyed itself was decreasing. Another factor was that responses to the survey were voluntary, and the response rate was decreasing over time.⁹⁾ From these results, it can be inferred that in the years following the

disaster, mental health care focused on high-risk approaches through large-scale screenings such as health surveys, and that necessary support was provided for high-risk residents identified through outreach measures such as home visits.

The trends by sex and age in Figure 5 show that the majority of support was provided for the elderly, both male and female. As many of the activities of our center were carried out during the daytime on weekdays, and many of the methods used involved home visits, it is possible that the local residents we were able to contact were inevitably biased towards those who were at home during the daytime on weekdays. Even when taking this bias into account, however, the Miyagi Prefecture health survey showed that there were many elderly people living alone in prefabricated temporary housing, it was considered that isolation and anxiety about the future were major issues, and this anxiety was the reason why they needed support.⁹⁾ In addition, there were many people in their 30s to 50s, in the prime of their working lives, who also required support, and many of them had employment and other economic problems as their main complaints, suggesting that the psychological burden of supporting families and communities in this age group is marked. Based on these results, it was

considered that, depending on the nature of the community, it is necessary to pay attention to isolation of the elderly and employment issues for men in their prime working years after a disaster.

The ICD-10 code classification of those requiring support was dominated by F1, F2, F3, and F4. Many F1 cases were residents with alcohol-related disorders who had been experiencing some kind of problem even before the earthquake. As has been pointed out in other previous studies,⁶⁾⁸⁾ there are few new cases of alcohol-related disorders developing in the wake of disasters, and it was thought that existing cases would become more severe as the amount of alcohol consumed increased. A large number of F2 cases were schizophrenic, and many of these cases had developed before the disaster. Various factors were considered to be involved, such as exacerbation due to the stress of the disaster itself, the fact that the already fragile foundations of people's lives were shaken, and fact that access to medical care became more difficult due to the disaster. There was a tendency for the number of cases of F3 (mostly depression) that developed after the disaster to increase over time, and while the main cause of development was not necessarily the earthquake itself, there was a possibility of a slight time lag before they became actual cases. It was

considered that, immediately after the disaster, symptoms such as depression and anxiety would not appear because of psychological tension, and that as the material recovery progressed, the tension would ease and psychological symptoms would surface. From these results, it was thought that in the years following the disaster, there would be a need for support for those who already had mental disorders before the disaster, and that after several years, there would be a need for support for those who developed depression after the disaster.

This paper has several limitations. First, this document is merely a summary of activity statistics, and as no statistical tests have been conducted, all of the discussion is based on speculation. Because the figures in this report present the total number of people receiving support, not the number of new people requiring support, there is a possibility that they do not accurately reflect the situation in the area. In addition, the state of community mental health differs among prefectures, and it is not certain that the changes we noted will occur in all areas. Secondly, the local residents we were involved with represented only a small portion of those in need of support, so it is difficult to state that the results of the survey represent the situation of all disaster victims. Finally, as our center is not a

treatment facility, we have tried to connect people in need of support with existing local resources as much as possible. For this reason, we did not follow all of those in need of assistance through to recovery, and were unable to analyze how our involvement contributed to their recovery.

V. Recommendations

Finally, we would like to offer some recommendations for those who are considering trying something similar to what we have done here at our center. At the beginning of the center's establishment, all of the staff were employed on single-year contracts. This was probably because there was no clear idea of how much the center could contribute to the local community, and also because the national and prefectural governments did not give us a clear idea of how long the activities would continue. With our job security for the next year in doubt, it was very stressful to be working on something for an unknown duration. As we continued our activities, we gradually gained recognition from the local community, and in 2020, when we reached our 10th year, we were told that our contract would be extended for a further 5 years, bringing the total to 15 years, and we were finally able to get a clearer overall perspective. Although it is necessary to analyze the scale of the disaster and

activities of the Disaster Mental Health Care Center, it is considered necessary to show some kind of direction in the early stages and create an environment in which staff can work with peace of mind.

In addition, because it was an organization that was established on an emergency basis in response to a sudden disaster, considerable effort was required in terms of management to ensure that all staff were working towards the same goal. Although highly motivated professionals from all over Japan gathered together, each person had their own strong ideas, and a lot of time was spent on careful communication to build a team. Meetings within each department inevitably increased, and meetings with all staff members were initially held once a month. We had to form the organization without being able to accurately judge each person's aptitude and ability, and I feel that we simply did not have enough time to prepare for the activities. With the possibility of such disasters occurring in the future, it is deemed necessary to train and stockpile human resources at national and prefectural levels with the aim of creating organizations like our center.

In the early days, the main focus was on safety confirmation through outreach, and we had to walk around the rough terrain with maps in hand, so

activities required a lot of energy and stamina. As time passed, the proportion of manpower tactics decreased and activities requiring specialized skills, such as case study supervision and community health promotion consultation, increased. Thus, the role that the center was required to play by the local community changed over time. Thus, as an organization, we had to set aside a large budget each year for staff training, and continue to steadily acquire the skills we would need next. It was considered necessary to monitor the community as it recovered and anticipate future needs in order to allocate human resources accordingly. We also thought it was necessary to conduct long-term analysis of the Disaster Mental Health Care Center, including our center, and understand the recovery process of the community and needs at each stage.

Conclusion

It was deemed that the issues faced by residents who can be supported and needs of the community for support groups would change depending on the phase of the post-disaster recovery process. Supporters and support groups need to carefully monitor changes in the community and provide necessary support at appropriate times. Please note that there are many organizations in the community that support disaster

victims like us, and the data we have collected do not represent the entire community. Therefore, the observations we have made based on the data are only a hypothesis; more detailed analysis will be needed in the future.

There are no conflicts of interest to disclose in relation to this paper.

Acknowledgements: We would like to express our deepest gratitude to everyone who helped with the preparation of this paper.

References

- 1) Fergusson, D. M., Horwood, L. J., Boden, J. M., et al.: Impact of a major disaster on the mental health of a well-studied cohort. *JAMA Psychiatry*, 71 (9); 1025-1031, 2014
- 2) 兵庫県精神保健福祉協会こころのケアセンター: こころのケアセンター活動報告書 平成 11 年度—5 年間の活動を終えて—. 兵庫印刷, 兵庫, 2004
- 3) 加藤 寛, 最相葉月: 東日本大震災後五十日の記録. 心のケア—阪神・淡路大震災から東北へ—. 講談社現代新書, 東京, p.13-42, 2011

- 4) 松本和紀, 小原聡子, 林 みづ穂ほか: 東日本大震災における宮城県の精神科医の活動. *精神医学*, 55 (4); 391-400, 2013
- 5) 松本和紀: アセスメント・モデル, 支援計画. 災害時のメンタルヘルス. (酒井明夫, 丹羽真一ほか監). 医学書院, 東京, p.21-24, 2016
- 6) 松下幸生, 樋口 進: 災害とアルコール関連問題. *トラウマティック・ストレス*, 10 (2); 175-181, 2013
- 7) 新潟県精神保健福祉協会こころのケアセンター編: ふるさとのこころを取りもどすために—被災者に寄り添った 10 年のあゆみ—こころのケアセンター10 年の活動記録—北越印刷, 新潟, 2014
- 8) Rubonis, A. V., Bickman, L.: Psychological impairment in the wake of disaster: the disaster-psychopathology relationship. *Psychol Bull*, 109 (3); 384-399, 1991
- 9) 佐藤弥生子, 橋本朱里: みなし仮設住宅入居者健康調査から考える被災者支援のあり方について. *保健師ジャーナル*, 74 (3); 200-206, 2018

表 日本の心のケアセンター

1995 年 1 月	阪神・淡路大震災（マグニチュード 7.3） ・ 1995 年 6 月に兵庫県こころのケアセンター開設 ・ 組織再編を行い，研究機能や診療機能を併設し，現在も稼働している
2004 年 10 月	新潟県中越地震（マグニチュード 6.8） ・ 2005 年 8 月に新潟県精神保健福祉協会こころのケアセンター開設 ・ 10 年間の活動を経て，2015 年 3 月に終結した
2011 年 3 月	東日本大震災（マグニチュード 9.0） ・ 2011 年 12 月にみやぎ心のケアセンター開設 ・ 2012 年 2 月に岩手県こころのケアセンター開設 ・ 2012 年 2 月にふくしま心のケアセンター開設
2016 年 4 月	熊本地震（マグニチュード 7.3） ・ 2016 年 10 月に熊本こころのケアセンター開設

Table: Disaster Mental Health Care Centers in Japan

January 1995:

Hanshin-Awaji Earthquake (magnitude 7.3)

- ・ Hyogo Prefecture Mental Health Care Center was established in June 1995
- ・ Reorganized, with research and medical functions added, and still in operation today

October 2004:

Niigata Prefecture Chuetsu Earthquake (magnitude 6.8)

- ・ In August 2005, Niigata Prefecture Mental Health and Welfare Association Disaster Mental Health Care Center was established
- ・ After 10 years of activities, the program ended in March 2015

March 2011:

Great East Japan Earthquake (magnitude 9.0)

- ・ Miyagi Disaster Mental Health Care Center was established in December 2011
- ・ Iwate Disaster Mental Health Care Center was established in February 2012
- ・ Fukushima Disaster Mental Health Care Center was established in February 2012

April 2016:

The Kumamoto Earthquake (magnitude 7.3)

- ・ Kumamoto Disaster Mental Health Care Center was established in October 2016

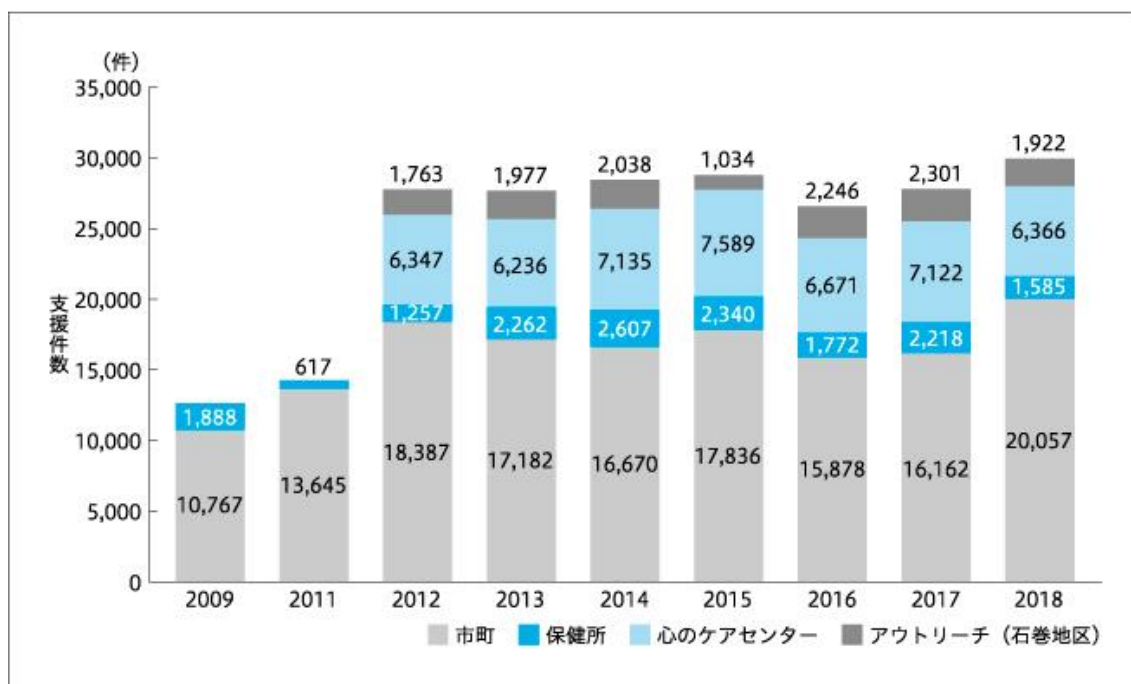


図1 震災前後の宮城県のメンタルヘルスにかかわる相談件数
(宮城県保健福祉部精神保健推進室より提供)

Figure 1: Number of consultations related to mental health in Miyagi Prefecture before and after the earthquake
(provided by the Mental Health Promotion Office, Miyagi Prefecture Department of Health and Welfare)

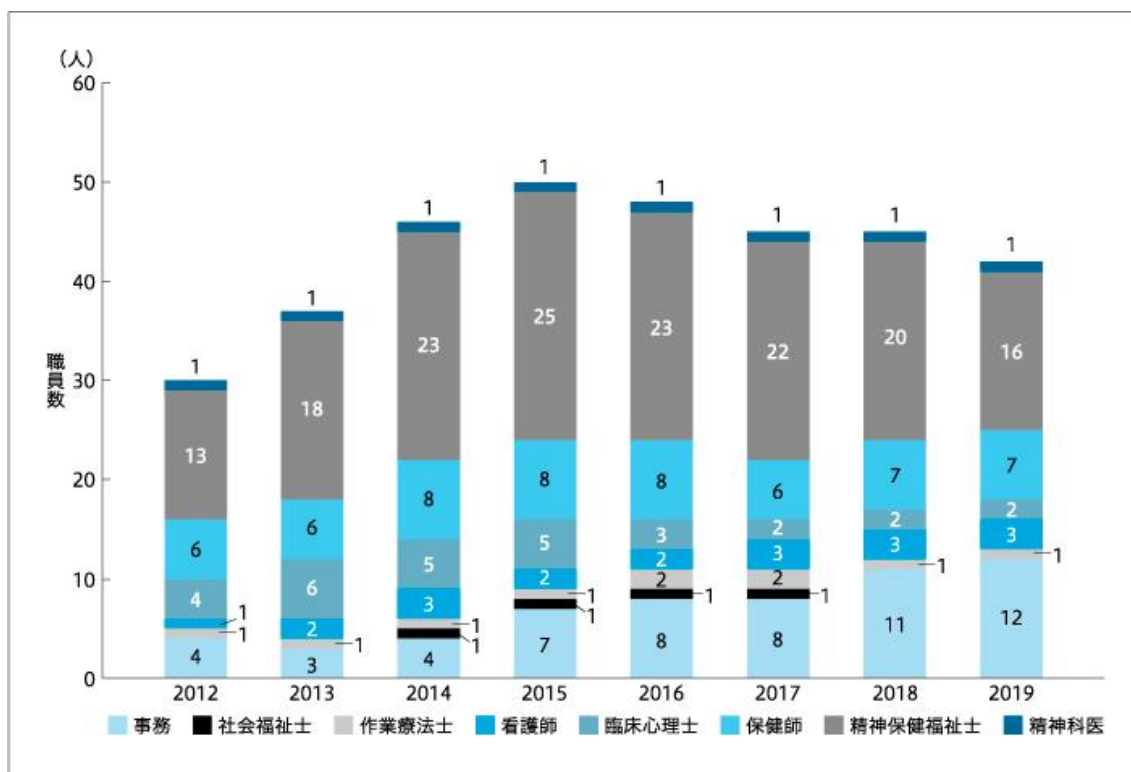


図2 当センターの職員の推移

Figure 2: Changes in the number of staff at the center

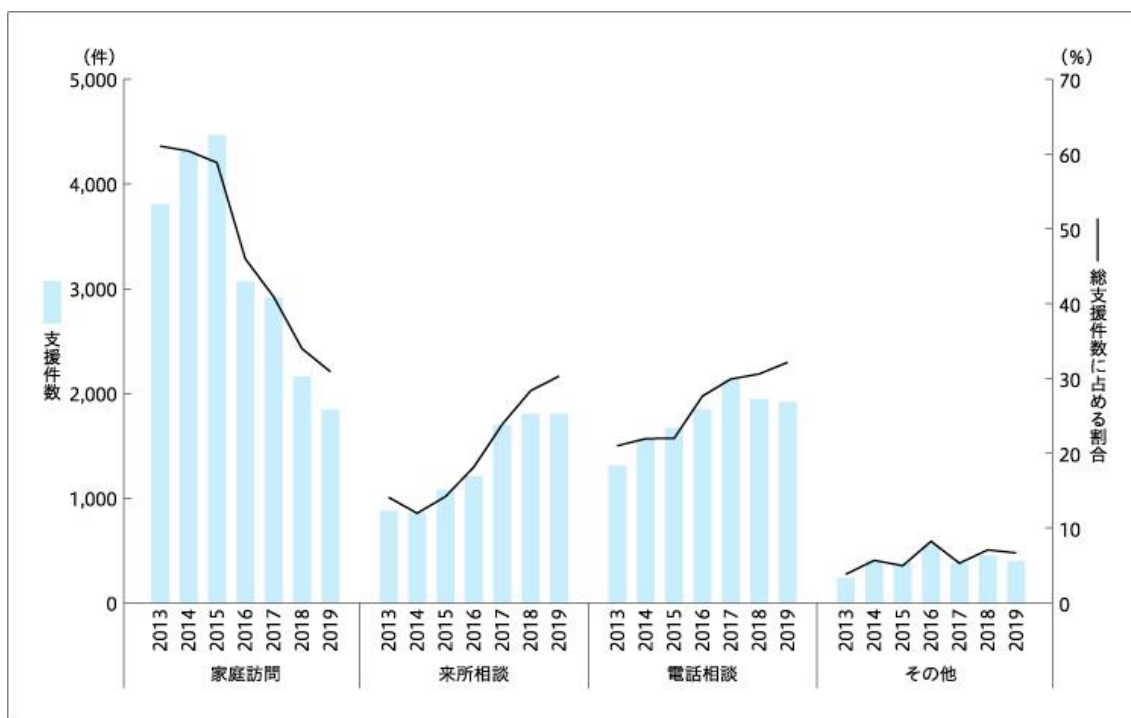


図3 支援方法の推移

Figure 3: Changes in the method of support

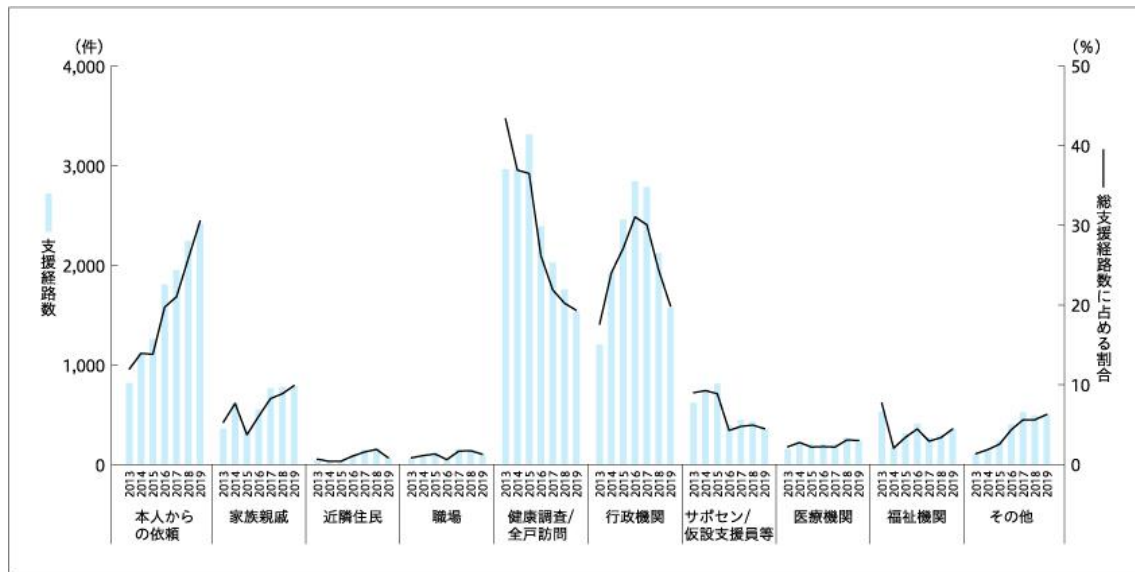


図4 相談経路の推移

Figure 4: Changes in consultation channels

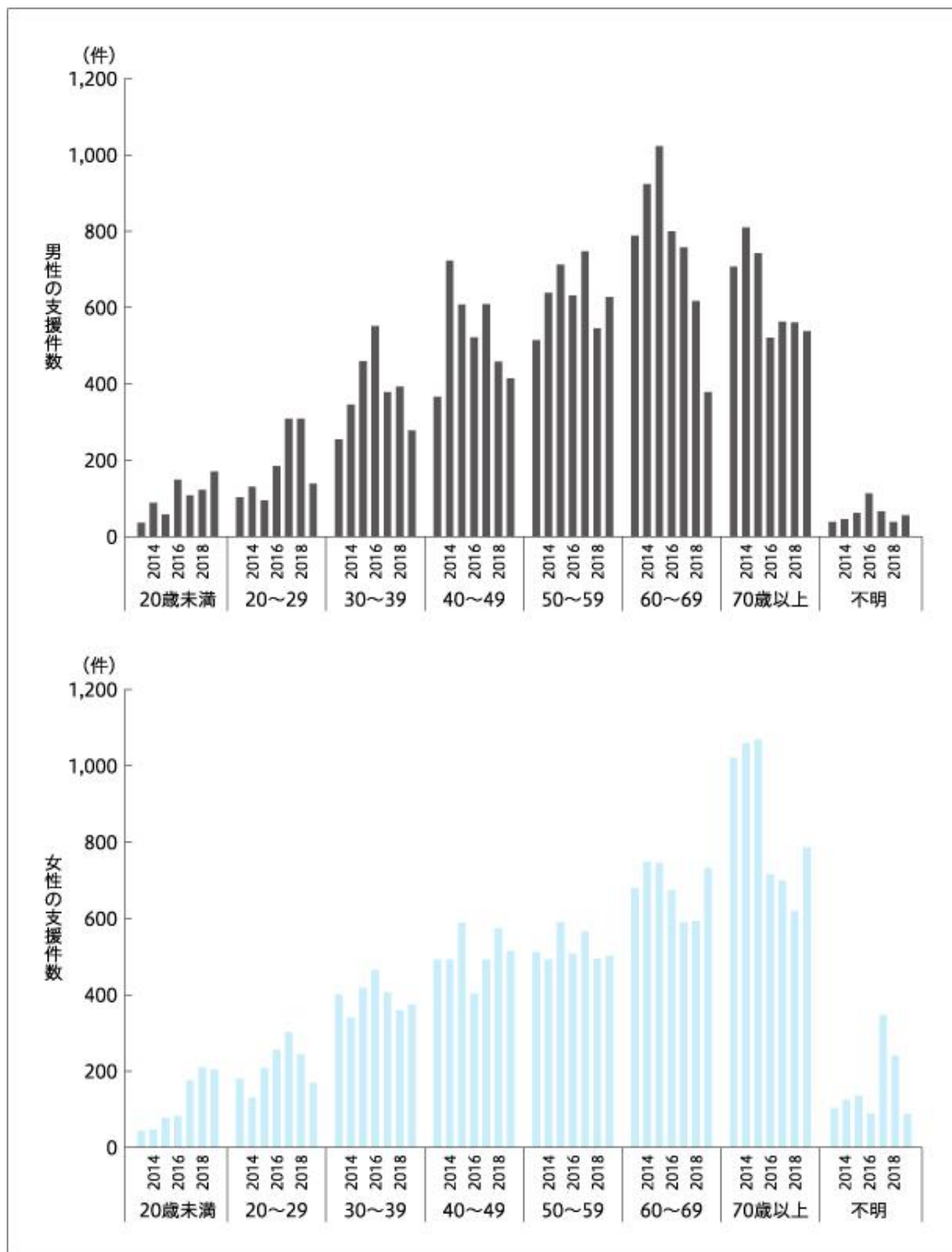


図 5 性・年齢別の支援件数の推移

Figure 5: Changes in the number of consultations by sex and age

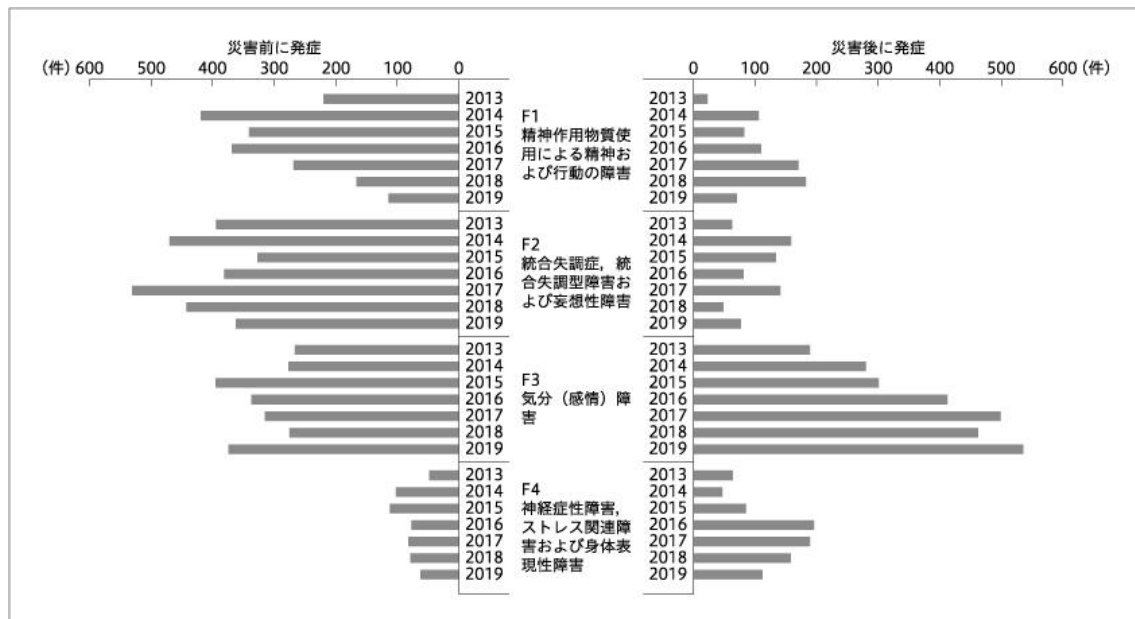


図 6 ICD-10 による疾患分類の推移

Figure 6: Changes in the classification of diseases according to ICD-10