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ORIGINAL ARTICLE

# Japanese Outreach Model Project for patients who have difficulty maintaining contact with mental health services: Comparison of care between higher-functioning and lower-functioning groups

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## Abstract

**Aim:** The Japanese Ministry of Health, Labor and Welfare sponsored the current examination of a new community mental health service, the Japan Outreach Model Project (JOMP), for persons with mental illnesses and who find it difficult to continue with ongoing treatment. Shorter readmission rates and hospital stays were found. In this study, the amount and type of care that were delivered by the JOMP were examined in order to inform the process of establishing the public insurance system.

**Methods:** The data were collected from 32 JOMP outreach teams from 21 prefectures in Japan that agreed to participate; 415 patients were included in the analysis. The clients' characteristics, social functions, problematic behavior score, and the amount and type of care that were delivered were examined.

**Results:** Higher amounts of care were delivered in the first month, compared to the remaining months, and the care was relatively stable from months 2–5. This suggests that consistently high care was needed for the JOMP clients who found it difficult to maintain contact with mental health services. Those clients with an increased overall global assessment functioning score at 6 months ($n$ = 151) had received significantly more care than those whose functioning had decreased or remained stable ($n$ = 150). The types of increased care that were provided to the higher functioning group were: "assistance with daily living tasks," "medical support for psychiatric symptoms," "empowering the client," "communication and coordination," "support for physical health," and "vocational and educational support."

**Conclusion:** The type and amount of care can positively influence good functional outcomes for those in the community who find it difficult to maintain contact with mental health services.

**Key words:** community mental health services, community psychiatry, home care services.

## INTRODUCTION

Japan has the most psychiatric beds among the 35 emerging and advanced countries that belong to the Organization for Economic Co-operation and Development (OECD, 2014). However, based on the success of home care, and also economic pressure, Japan began reducing the longer psychiatric hospital stays, beginning in the twenty-first century. In order to support that effort, the Japanese National Health Insurance System covers 30% of the medical expenses for psychiatric outpatient services and the Comprehensive Support Law for disabilities provides more necessary medical expenses for clients who have disabilities. Therefore, the trend is to establish effective home-based and outpatient services for patients with severe mental illnesses.

By the beginning of the twenty-first century, researchers from the USA and European countries were reporting the outcomes of home-based care for individuals with mental illnesses. A reduced length of hospital stay and less repeated admissions were the main outcomes of those

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programs that used assertive community treatment (ACT), mostly from the USA, and assertive outreach in the UK (Burns *et al.*, 2001). Many researchers reported positive outcomes, but some reviews pointed out that the practices of the teams were not known because of the "black-box" nature of these studies (Burns, Catty, & Wright, 2006). There was no significant difference between the experimental and the control teams in team structure, such as multidisciplinary teams. However, significant differences between the two groups for individual caseloads and contact frequencies were found (Wright, Catty, Watt, & Burns, 2004). The review suggested that more labor power was given to the clients who were in the experimental groups. The care classification of home treatment service in the review article revealed that the effective core components of home treatment were: regular home visits, taking responsibility for the clients' health and social care, having a smaller caseload, multidisciplinary teams, integrating psychiatrists into the teams, and having a high level of contact at home (Wright *et al.*).

Psychiatric and public health nurses are integral members of most home-visit care teams. McCardle, Parahoo, and McKenna (2007) surveyed the workloads of the home-based treatment among community psychiatric nurses. The main clinical care activities of Irelands' community psychiatric nurses were: the assessment of clients, medication management, health promotion, and clinical and family support. In another study from Ireland, researchers reported that workload measurement systems could not capture the less tangible, yet core, aspects of public health nurses' roles in providing home-based care to individuals with mental illness (Brady *et al.*, 2007). These core aspects were: decision-making, assessment, and case management. Although home care is widely considered to be mainstream in the current century, the care content and workloads in community mental health services rarely have been reported.

In Japan, visiting nursing stations for the elderly were established in 1991 under the National Health Insurance System (Japan Visiting Nursing Foundation, 2015), and since then, the number has grown. There are currently ~9070 nursing stations throughout Japan (The National Association for Home-visit Nursing Care, 2016). Visiting nursing stations have expanded their role to include younger patients, end-of-life care, child care, and mental health care, and ~60% now include psychiatric care for their clients (Kayama, 2016). Nursing home visiting for those with schizophrenia has decreased the number of inpatient days (Kayama *et al.*, 2005).

Japan had several ACT teams and research that showed some desirable outcomes. Nishio *et al.* (2012) found that individuals could live longer in the community without a worsening of symptoms or decreasing social function. Another study reported that an ACT group had a reduction of inpatient days and better client satisfaction than a non-ACT group (Ito *et al.*, 2011). Although these results showed promise, it was not a nationwide implementation program and the categorization of care by outcome was unavailable.

Therefore, in 2011, the Japanese Ministry of Health, Labour and Welfare started the Japanese Outreach Model Project (JOMP). The JOMP provides multidisciplinary outreach services for patients to help prevent repeated hospitalizations. This community mental health service model was designed for clients with mental illnesses who had difficulty staying engaged in ongoing treatment after they had been discharged from the hospital. The JOMP provided service for more patients who: (i) could not receive regular medical treatment; (ii) needed constant services; (iii) experienced social withdrawal without treatment; and (iv) were discharged from a long-term hospital or who had repeated rapid psychiatric admissions. This was a model project that involved various team sizes, including medical professionals. The long-term goal of the JOMP was to transfer the higher functioning clients to the Japanese outpatient care system. Therefore, the committee evaluated clients as to whether they should continue to use the JOMP service or be transferred to regular Japanese outpatient care.

The Japanese Ministry of Health, Labor and Welfare supported the evaluation of the new JOMP. The results indicated that, compared with Japanese regular outpatient care, the JOMP reduced admission rates and the length of the hospital stay, improved social function, and reduced the problematic behavior of clients who had dropped out of outpatient treatment for >3 months (Kayama *et al.*, 2014). The most-often delivered care was preventing the exacerbation of somatic symptoms and care for families. However, that study only focused on those clients who had dropped out of the outpatient service. Further study was needed, particularly research aimed at understanding the care components and with a broader target population.

Therefore, the present study aimed to describe the service components of the JOMP and to compare the characteristics and amount of care between those clients who gained good social functioning and those who experienced a decrease or remained stable over a 6 month period. In addition, the characteristics of the

 

JOMP home-based services for those who found it difficult to maintain contact with mental health services were examined.

## METHODS

### Design and sample

This descriptive, longitudinal, cohort study used a purposive sample. The data were collected from September, 2011 to December, 2013. Of the 47 prefectures in Japan, 24 were implementing the JOMP and 21 participated in this survey. The data were collected from 32 JOMP outreach teams in 21 prefectures and 415 of their clients. The JOMP teams consisted of local welfare commissioners, civil service workers, public health nurses, mental health experts in academic positions, members of mental health associations, and clients. The teams selected the clients who met the criteria for the JOMP. The research inclusion criteria for the clients were those who had current or recurrent psychiatric problems and who had dropped out of medical treatment or who had never been treated.

### Setting and services

Each outreach team was located in a psychiatric hospital, clinic, or visiting nursing station. Multidisciplinary staff members visited the client's home or made contact in an agreed-on setting to deliver care. They provided direct client care or gave indirect care, such as case management, in coordination with other agencies or case review meetings. The JOMP multidisciplinary care teams provided the following services: (i) the creation of a care plan and case management; (ii) support of daily living and the acquisition of life skills; (iii) support of building and dealing with interpersonal relationships; (iv) support for families; (v) support of the management of psychiatric symptoms; (vi) support of managing somatic symptoms; (vii) support of social living; (viii) support regarding the living environment; (ix) support of work and education; and (x) empowerment. These 10 categories were developed originally in a previous qualitative study that had been based on interviews with nurses (Setoya *et al.*, 2008). They were updated in a previous ACT and home-visit nursing cohort study (Yoshida *et al.*, 2011). Under these 10 categories, the staff members recorded the activities, including the starting and finishing times, on the cloud system by using specific subcategories. For example, "support of daily living and the acquisition of life skills" included the following subcategories: support of feeding, the cleaning environment, activity, money management, and safety management. The staff members protected the clients' confidentiality by using identification numbers, instead of the clients' given name.

### Ethical considerations

The research team explained the protection of personal information and the process of the data collection to the JOMP team staff members. The head of the prefectural and clinical JOMP committee signed the agreement consent form if they agreed to participate in this research. If the JOMP team declined to continue this research, the research team deleted their research data. The client was informed that the JOMP was both a model care program and a research project and that the researcher would make reports about the care that the team delivered and the condition of the client. Each client also provided signed consent during the 6 months of the research. If the client rejected inclusion in this research, he or she sent a disagreement paper to the research team. The research team then removed his or her data from the research database. This study was reviewed and approved by the research ethics committee of the St. Luke's College of Nursing (old name of the St. Luke's International University).

### Procedures and measures

The data were collected twice: at baseline (Time 0) and after 6 months from the first visit or at the conclusion of the service (Time 1) (Fig. 1). At both T0 and T1, the following participant characteristics were assessed: diagnosis, sociodemographic data (age, sex, marital status, living situation, and occupation), hospitalization and medication during the past 18 months, social functioning, and problematic behavior. There were four outcomes that were measured at Time 1: whether or not the client had been admitted to hospital, the length of community stay, social functioning, and problematic behavior. The JOMP team psychiatrists provided the participants' diagnoses.

#### *Instruments*

Social function was measured by using the widely used Global Assessment of Functioning (GAF) (American Psychiatric Association, 1994). The GAF is a 10-category scale that describes the level of day-to-day psychological, social, and occupational behaviors. Each level is additive, beginning with the lowest category of 1–10 points and the highest category of 91–100. The higher scores mean better total functioning.

 

| Variable | T0 (baseline) | T1 (6 months or service conclusion)* |
|---|---|---|
| Diagnosis | ○ | ○ |
| Sociodemographic data | ○ | ○ |
| Medications | ○ | ○ |
| Hospital admission | ○ | ○ |
| Length of community stay | ○ | ○ |
| GAF | ○ | ○ |
| SBS | ○ | ○ |
| Activity logs (content of care and start/finish time of care) for each visit | ●—●—●—●—●—● | |

**Figure 1** Measurement timeline. *If the service concluded within 6 months, the data were used at that time. GAF, Global Assessment of Functioning; SBS, Social Behavior Schedule. This figure was adapted from Kayama *et al.* (2014).

Problematic behavior was measured with the Social Behavior Schedule (SBS) (Wykes & Sturt, 1986). The SBS is a reliable measure that was designed for use with long-stay populations within a hospital or the community to assess long-term impairment or disability. The SBS is the only scale that is used by non-psychiatrists in the Japanese community mental health setting in order to evaluate problematic behavior. Furthermore, the validity of the Japanese version of the SBS has been confirmed (Okamoto & Tanaka, 2014). The SBS covers 21 behavioral areas, which describe the major difficulties that are exhibited by patients with long-term impairments, such as antisocial behavior, depressed behavior, social withdrawal, and thought disturbance. These are behaviors that usually result in dependence on, or admission to, a hospital (Wykes & Sturt). The SBS is scored by using a Likert scale from 0 ("no problem") to 4 ("serious problem"). The GAF and SBS scores were evaluated by the visiting staff members because the clients had a difficulty in meeting with anyone else.

All direct or indirect care concerning the client was reported in the cloud system. The staff members used either their own identification (ID) or the clients' ID, depending on the activity. To keep track of the activities, the staff members logged in their care by using the subcategories under the 10 categories, including the starting and finishing times.

## Analysis

The researchers accessed the anonymous care records and analyzed the process (total care), client characteristics, staff care that was provided, and client functioning. The participants' characteristics were described by using percentages and sums. The total amount of care was counted at 6 months for each client. Direct and indirect care for each client that was logged in by the staff members was totaled. The first client visit was considered as the start of the first month. The GAF and SBS scores were logged on at baseline (T0) and again after 6 month care delivery (T1) or when the client stopped the service. The amount of change was counted for the GAF at T0 to T1 and divided into two groups: higher functioning and lower functioning; the cut-off point was set at T1 – T0 > 0. The higher "good" functioning outcome (GFO) group was compared with the lower "poor" functioning outcome (PFO) group, including who stayed at the same score, after 6 months of interventions. In order to compare the characteristics of the GFO group and the PFO group, the *t*-test and $\chi^2$-analysis were used. The data were analyzed with IBM SPSS Statistics for Windows v. 22.0J (IBM Corporation, Armonk, NY, USA).

# RESULTS

## Profile of the program participants

Tables 1 and 2 present the characteristics of the clients. Most of the 368 participants were diagnosed with schizophrenia. The JOMP inclusion for many of the participants was due to dropping out of their outpatient treatment. More than half were male and unmarried. There were 151 GFO clients and 150 PFO clients. In the GFO group, more clients were divorced and fewer were widowed or a widower. There was no significant difference between the GFO group and the PFO group regarding their sex, age, living situation, diagnoses, and reason for JOMP admission. Hospitalization and the average stay in the community as outcomes of the client groups were significantly different ($P < 0.01$): 40% of the PFO group was hospitalized and the average stay in the community was 257.7 days (standard deviation, SD = 137.5), whereas 12.9% of the GFO group was hospitalized and the average stay in the community was 323.4 days (SD = 85.9) (Tables 1–2). More GFO clients avoided hospital admission and lived longer in their community ($\chi^2 = 27.88$, $P < 0.01$).

**Table 1** Comparison of client characteristics between the "good" functioning outcome (GFO) group and the "poor" functioning outcome (PFO) group

| | Total ($n$ = 368) | | GFO group ($n$ = 151) | | PFO group ($n$ = 150) | | | |
|---|---|---|---|---|---|---|---|---|
| Characteristic | N | % | N | % | N | % | $\chi 2$ | $P$ |
| Sex | | | | | | | 0.00 | 0.96 |
| Female | 156 | 52.4 | 64 | 42.4 | 64 | 42.7 | | |
| Male | 212 | 57.6 | 87 | 57.6 | 86 | 57.3 | | |
| Marital status | | | | | | | 9.41 | 0.09 |
| Unmarried | 224 | 60.9 | 87 | 57.6 | 94 | 62.7 | | |
| Married | 38 | 10.3 | 16 | 10.6 | 12 | 8.0 | | |
| Common-law marriage | 2 | 0.5 | 0 | 0.0 | 2 | 3.0 | | |
| Divorced | 64 | 17.4 | 34 | 22.5 | 19 | 12.7 | | |
| Widow/widower | 22 | 6.0 | 7 | 4.6 | 13 | 8.7 | | |
| No answer | 18 | 4.9 | 7 | 4.6 | 10 | 7.0 | | |
| Age (years) | | | | | | | 7.13 | 0.42 |
| 10–19 | 7 | 1.9 | 3 | 2.0 | 2 | 0.3 | | |
| 20–29 | 28 | 7.6 | 11 | 7.3 | 9 | 0.0 | | |
| 30–39 | 75 | 20.4 | 34 | 22.5 | 29 | 9.3 | | |
| 40–49 | 76 | 20.7 | 36 | 23.8 | 26 | 7.3 | | |
| 50–59 | 77 | 20.9 | 29 | 19.2 | 36 | 24.0 | | |
| 60–69 | 54 | 14.7 | 14 | 9.3 | 26 | 7.3 | | |
| 70–79 | 32 | 8.7 | 16 | 10.6 | 13 | 0.7 | | |
| 80+ | 19 | 5.2 | 8 | 5.3 | 9 | 0.0 | | |
| Living situation | | | | | | | 0.97 | 0.32 |
| Living alone | 146 | 39.7 | 57 | 37.7 | 65 | 43.3 | | |
| Diagnosis | | | | | | | 5.90 | 0.66 |
| Organic, including symptomatic, mental disorders | 17 | 4.6 | 6 | 4.0 | 9 | 6.0 | | |
| Schizophrenia, schizotypal, and delusional disorders | 274 | 74.5 | 110 | 72.8 | 117 | 78.0 | | |
| Mood (affective) disorders | 28 | 7.6 | 14 | 9.3 | 9 | 0.0 | | |
| Client situation for program admission | | | | | | | 3.02 | 0.39 |
| Quit outpatient treatment | 217 | 59.0 | 85 | 56.3 | 97 | 4.7 | | |
| Had not been treated | 48 | 13.0 | 19 | 12.6 | 17 | 11.3 | | |
| Social withdrawal | 31 | 8.4 | 13 | 8.6 | 13 | 8.7 | | |
| Long-term hospitalization or repeated admission | 72 | 19.6 | 34 | 22.5 | 23 | 15.3 | | |
| Outcome | | | | | | | 27.88 | <0.01** |
| Admission to the hospital | 92 | 25.0 | 19 | 12.9 | 60 | 40.0 | | |

**$P$ < 0.01.

**Table 2** Global Assessment Functioning (GAF), Social Behaviour Schedule (SBS), and length of community stay means by the "good" functioning outcome (GFO) and the "poor" functioning outcome (PFO) groups

| | Total ($n$ = 368) | | GFO group ($n$ = 151) | | PFO group ($n$ = 150) | | | |
|---|---|---|---|---|---|---|---|---|
| Variable | Mean | SD | Mean | SD | Mean | SD | $t$ | $P$ |
| GAF (Time 0: baseline) | 39.2 | 14.0 | 39.1 | 13.7 | 39.0 | 13.8 | –0.05 | 0.69 |
| SBS (Time 0: baseline) | 22.8 | 11.6 | 23.1 | 11.7 | 23.7 | 11.3 | 0.46 | 0.65 |
| GAF (Time 1: 6 months or service ended) | 43.2 | 17.0 | 52.2 | 13.7 | 35.7 | 14.4 | –10.25 | <0.01** |
| SBS (Time 1: 6 months or service ended) | 20.1 | 12.5 | 15.9 | 10.5 | 25.7 | 12.6 | 6.92 | <0.01** |
| GAF (Time 1 – Time 0) | 5.0 | 12.1 | 13.2 | 10.8 | –3.3 | 6.4 | –16.16 | <0.01** |
| SBS (Time 1 – Time 0) | –3.0 | 9.2 | –7.6 | 9.0 | 2.1 | 6.3 | 10.11 | <0.01** |
| Length of community stay (out of 365 days) | 288.7 | 118.2 | 323.4 | 85.9 | 257.7 | 137.5 | –4.97 | <0.01** |

*$P$ < 0.05 and **$P$ < 0.01. SD, Standard deviation.

 

### Social function and problematic behavior

The average baseline (T0) GAF of the GFO group (mean = 39.1, SD = 13.7) and the PFO group (mean = 39.0, SD = 13.8) was almost the same. The SBS scores were also similar. The GFO group's mean was 23.1 (SD = 11.7) and the PFO group's mean was 23.72 (SD = 11.3). At T1, 6 months after starting the outreach service or at the end of the service, the average GAF score of the GFO group was 52.2 (SD = 13.7) and the PFO group's GAF score average was lower, at 35.7 (SD = 14.4). The average SBS score of the GFO group at T1 dropped to 15.9 (SD = 10.5), whereas the average score for the PFO group at T1 increased to 25.7 (SD = 12.6). From T0 to T1, the GAF score of the GFO group increased by 13.2 points, whereas the PFO group's mean decreased by 3.3 points. The GFO group's SBS score mean decreased by 7.6 points, while the PFO group's mean increased by 2.1 points. The amount of change in the GAF and SBS means was statistically significant (GAF: $t = -16.16$, $P < 0.01$; SBS: $t = 10.11$, $P < 0.01$).

### Amount of the received care

Every month, the total care min were added in each of the 10 categories. Table 3 shows the total amount of direct and indirect care, Table 4 shows the total amount of direct care, and Table 5 shows the total amount of indirect care by staff members. The average of the total care for the GFO group was significantly higher, compared to the PFO group (Table 3). Direct care and indirect care were significantly longer for the GFO group, compared to the PFO group. The amount of care for each month was compared for each group: every month, the GFO group received significantly longer care times after the first visit (Fig. 2).

The amount of care that was provided by each staff member was examined (Table 4). All the staff members delivered more care to the GFO group than to the PFO group. The GFO group received significantly more direct care from the psychiatrist ($t = -2.05$, $P = 0.04$), nurse ($t = -2.75$, $P < 0.01$), psychiatric social worker ($t = -3.17$, $P < 0.01$), and psychologist ($t = -2.51$, $P = 0.01$) (Table 4). Significantly more indirect care came from the public health nurse ($t = -2.40$, $P = 0.02$), psychiatric social worker ($t = -2.06$, $P = 0.04$), and occupational therapist ($t = -2.24$, $P = 0.03$) (Table 5).

### Characteristics of the delivered care

The care for those persons with "good functioning" after 6 months were compared to those who were "poor functioning" or who had remained stable. The amount of "assistance with daily living tasks" ($t = 3.29$, $P < 0.01$), "medical support for psychiatric symptoms" ($t = 4.84$, $P < 0.01$), "empowering the client" ($t = 2.69$, $P < 0.01$), "communication and coordination" ($t = 3.66$, $P < 0.01$), "support for physical health" ($t = 3.21$, $P < 0.01$), and "vocational and educational support" ($t = 2.27$, $P = 0.02$) was significantly longer for the GFO group than for the PFO group (Fig. 3). In particular, the care involving "assistance with daily living tasks," "medical support for psychiatric symptoms," and "empowering the client" was delivered threefold more frequently for the GFO group than for the PFO group.

## DISCUSSION

This study documented the type and amount of care that were delivered to clients who were at risk for repeated hospitalizations or for totally dropping out of regular psychiatric treatment in Japan.

Overall, the amount of care that was delivered during the 6 month study period was highest during the first month and then appeared to stabilize. However, when the GFO and PFO groups were separated and compared, the GFO group was found to receive significantly more total care. At baseline, the social functioning mean score of both the GFO and the PFO groups was ~39.0: this means that they had some impairment in reality

**Table 3** Comparison of the type of care between the "good" functioning outcome (GFO) group and the "poor" functioning outcome (PFO) group

| | Total ($n$ = 368) | | GFO group ($n$ = 151) | | PFO group ($n$ = 150) | | | |
|---|---|---|---|---|---|---|---|---|
| Type of care | Mean | SD | Mean | SD | Mean | SD | $t$ | $P$ |
| Total amount of care (0–6 months) | 2669.8 | 3106.0 | 5778.8 | 5752.7 | 3340.1 | 2999.5 | 4.42 | <0.01** |
| Direct care (min) | 1974.5 | 2686.8 | 2797.6 | 3652.0 | 1374.2 | 1383.6 | −4.46 | <0.01** |
| Indirect care (min) | 2339.0 | 2335.9 | 2730.8 | 2540.9 | 2097.8 | 1856.0 | −2.35 | 0.02* |

*$P < 0.05$ and **$P < 0.01$. SD, Standard deviation.

**Table 4** Comparison of 6 months of direct care by staff members between the "good" functioning outcome (GFO) group and the "poor" functioning outcome (PFO) group

| | Total ($n$ = 368) | | GFO group ($n$ = 151) | | PFO group ($n$ = 150) | | | |
|---|---|---|---|---|---|---|---|---|
| Staff member | Mean | SD | Mean | SD | Mean | SD | $t$ | $P$ |
| Psychiatrist | 46.6 | 116.6 | 64.5 | 151.5 | 35.5 | 85.1 | –2.05 | 0.04* |
| Public health nurse | 113.1 | 446.5 | 121.4 | 441.3 | 60.2 | 268.1 | –1.45 | 0.15 |
| Nurse | 560.3 | 1220.8 | 813.5 | 1629.0 | 409.5 | 768.7 | –2.75 | <0.01** |
| Psychiatric social worker | 788.6 | 1361.3 | 1092.9 | 1943.0 | 561.6 | 659.7 | –3.17 | <0.01** |
| Occupational therapist | 173.1 | 454.0 | 202.9 | 469.1 | 149.7 | 370.9 | –1.09 | 0.28 |
| Psychologist | 126.4 | 464.3 | 213.8 | 683.1 | 69.6 | 172.7 | –2.51 | 0.01* |
| Pharmacist | 1.4 | 22.4 | 3.4 | 35.0 | 0.0 | 0.0 | –1.19 | 0.24 |
| Nutritionist | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | –1.79 | 0.08 |
| Care manager for disability | 41.4 | 247.7 | 78.9 | 371.1 | 22.5 | 102.2 | –1.79 | 0.08 |
| JOMP office worker | 24.4 | 210.6 | 42.2 | 285.0 | 1.0 | 8.7 | –1.77 | 0.08 |
| Peer staff member | 83.1 | 425.4 | 130.8 | 570.9 | 58.5 | 319.5 | –1.35 | 0.18 |
| Others | 16.2 | 208.5 | 33.5 | 323.0 | 6.3 | 43.8 | –1.02 | 0.31 |

*$P$ < 0.05 and **$P$ < 0.01. JOMP, Japan Outreach Model Project; SD, standard deviation.

testing, communication, or a major impairment in several areas. The SBS scores suggested similar difficulties for both groups. The total amount of care and the amount of care in each care category that were provided to the GFO group were significantly longer, compared with the PFO group, indicating the possibility that an adequate amount of care after 6 months helped the clients to recover their social functioning and reduced problematic behavior.

Medical support for psychiatric symptoms was delivered significantly more for the GFO group than for the PFO group. The staff members were monitoring the patients' condition and supported their taking of medicine. The clients in the JOMP were at risk of discontinuing their medical treatment; discontinuing antipsychotic drug therapy increased the risk of relapse by almost fivefold (Robinson *et al.*, 1999). Medication management by medical staff is one of the most important roles for these clients.

It was chosen to conduct a self-report time study in order to evaluate the amount of care and to identify the type of care that the staff or team intended to provide to the clients. Consequently, the philosophy of the staff or team would reflect the amount of care time. The most common services that were provided for all the clients were: "case management with/without the client," "assistance with daily living tasks," "medical support for psychiatric symptoms," and "empowering the

**Table 5** Comparison of 6 months of indirect care by staff members between the "good" functioning outcome (GFO) group and the "poor" functioning outcome (PFO) group

| | Total ($n$ = 368) | | GFO group ($n$ = 151) | | PFO group ($n$ = 150) | | | |
|---|---|---|---|---|---|---|---|---|
| Staff member | Mean | SD | Mean | SD | Mean | SD | $t$ | $P$ |
| Psychiatrist | 210.4 | 269.9 | 240.8 | 320.9 | 205.9 | 29.3 | –1.03 | 0.30 |
| Public health nurse | 118.0 | 386.6 | 163.6 | 517.3 | 51.9 | 168.8 | –2.40 | 0.02* |
| Nurse | 589.5 | 727.9 | 708.7 | 840.3 | 553.8 | 636.0 | –1.72 | 0.09 |
| Psychiatric social worker | 717.5 | 836.2 | 827.2 | 914.6 | 623.9 | 700.7 | –2.06 | 0.04* |
| Occupational therapist | 254.4 | 292.1 | 310.2 | 340.3 | 228.9 | 252.9 | –2.24 | 0.03* |
| Psychologist | 156.1 | 236.5 | 161.5 | 248.0 | 174.6 | 254.2 | 0.43 | 0.67 |
| Pharmacist | 14.2 | 70.3 | 13.7 | 71.7 | 12.6 | 61.6 | –0.13 | 0.90 |
| Nutritionist | 0.9 | 6.2 | 0.6 | 71.7 | 1.4 | 8.0 | 1.00 | 0.32 |
| Care manager for disability | 52.7 | 179.1 | 42.5 | 169.2 | 77.7 | 214.0 | 1.51 | 0.13 |
| JOMP office worker | 67.0 | 173.1 | 61.1 | 159.1 | 53.9 | 145.6 | –0.39 | 0.70 |
| Peer staff member | 126.4 | 358.3 | 156.7 | 392.1 | 89.5 | 220.9 | –1.75 | 0.08 |
| Others | 31.9 | 137.5 | 44.1 | 196.6 | 23.6 | 70.1 | –1.15 | 0.25 |

*$P$ < 0.05. JOMP, Japan Outreach Model Project; SD, standard deviation.

 

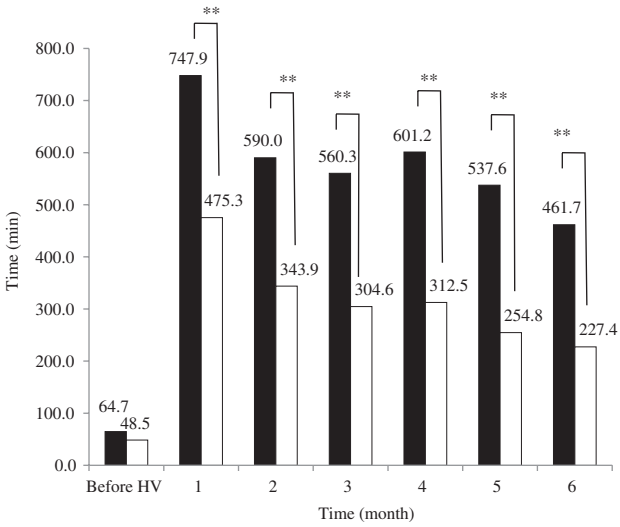


**Figure 2** Services provided (min) between T0 and T1 for each client per month in the "good" functioning outcome (GFO) group ($n$ = 151) and the "poor" functioning outcome (PFO) group ($n$ = 150). $^{**}P < 0.01$. HV, Home visit.

client." The JOMP clinicians were obligated to have monthly case conferences with the JOMP committee. The team then relayed the treatment plan to the outpatient treatment providers that were covered by public insurance so that they could increase the time for case management. Even though case management was not included in public insurance reimbursement, there was still an expense for the teams. Cochrane reviews indicate that case management that is not linked to high fidelity with the treatment program might not provide a significant improvement of the clients and could increase hospitalization costs (Dieterich, Irving, Park, & Marshall, 2010; Marshall, Gray, Lockwood, & Green, 2000). In addition, "assistance with daily living tasks" includes various types of support for clients' daily living, including meal preparation, room cleaning, and assistance with going outside. Although quite basic, it is essential for clients to continue living in the community. Research to document the effects of specific services is needed.

A community-based mental health workforce study in the UK documented the most common support activities as follows: monitoring activities, assessment activities, role support activities, and informal counseling (Lang *et al.*, 2011). This study's care category of "medical support for psychiatric symptoms" included monitoring and assessment activities. The staff members monitored the clients' symptoms, assessed their condition, and tailored the care for each contact. "Empowering the clients" was similar to "role support activities" in the study by Lang *et al.* In the current study, the staff members empowered the clients while delivering other care; for example, if the clients found a new way of cleaning their room, the staff members verbally validated the clients' strength in order to enhance the clients' self-efficacy. Significantly more time was devoted

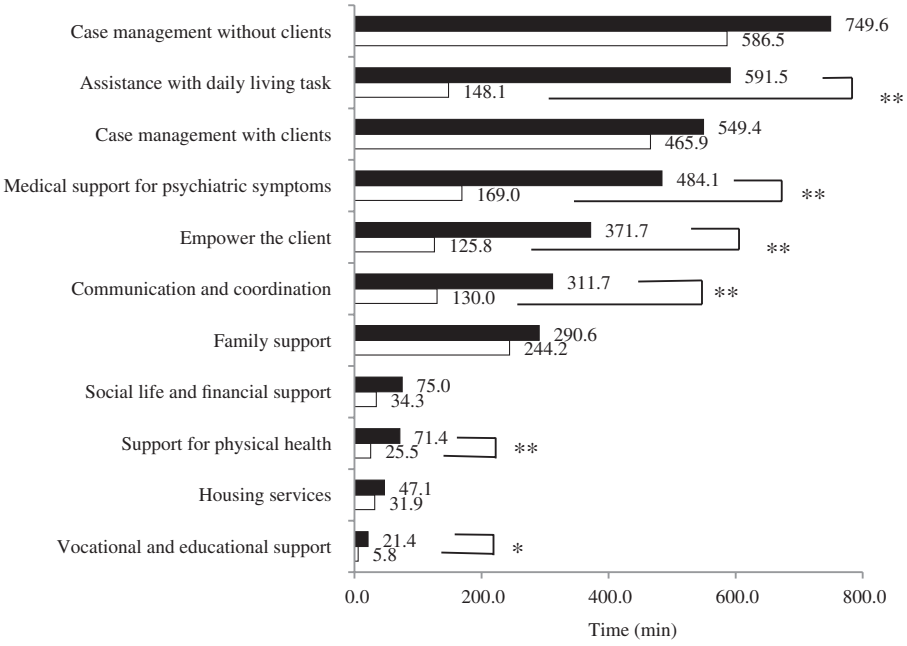


**Figure 3** Services provided (min) for each care category between T0 and T1 in the "good" functioning outcome (GFO) group ($n$ = 151) and the "poor" functioning outcome (PFO) group ($n$ = 150). $^{*}P < 0.05$ and $^{**}P < 0.01$.

to "empowering the client" in the GFO group. Psychiatric patients are difficult to empower, but empowerment is indicative of the clients' recovery, according to Brown (2003), and this study underpins that research. This care includes active listening to decrease anxiety, care to enhance self-esteem or a sense of control, and providing positive feedback.

In Japan, the "empowerment" or "recovery" philosophy is not well known among medical staff members in the mental health field because Japan has provided custodial hospital-based treatment for decades. After the recovery movement was introduced from the USA and the UK and research about ACT and community-based treatment emerged around 2000, the Ministry of Health, Labour and Welfare was willing to move the treatment setting from the hospital to the community. The trend towards empowering the client might become well known in the future, along with medical staff members focusing on community care.

The JOMP has reduced the admission rates and hospital stays, improved the GAF scores, and reduced the SBS scores for those who have found it difficult to maintain contact with mental health services (Kayama *et al.,* 2014). This study described the concrete care content for that same project. Wright *et al.* (2004) reviewed home treatment services and explained the core components that are associated with clinical effectiveness, which might be an important service configuration. The JOMP meets four of the six categories, which were: regularly visiting at home, taking responsibility for both health and social care, multidisciplinary teams, and a high proportion of contact at home. The other two components, having smaller caseloads and psychiatrists being integrated in the team was dependent on the teams. Further examination of these variables is needed.

The JOMP was time-limited, only lasting 3 years; therefore, a focus on service sustainability is needed. The clients of the JOMP continued their treatment through hospital outpatient services, the home-visiting service by the home-visit nursing station, or by public health nurses.

Throughout this study, the types of care that are necessary for those who have difficulties in maintaining contact with mental health services have been identified; this knowledge can support nurses who are not familiar with how to care for the mentally ill. As they are required to provide care within multidisciplinary teams, nurses can capitalize on this knowledge in order to better manage medication and to monitor physical well-being (Gournay, 2000). Therefore, visiting nursing stations might play a wider role in multidisciplinary teams in Japanese community mental health services.

In 2011, the Japanese Ministry of Health, Labour and Welfare decided to include "mental health" as a fifth major disease, adding to the four previous major diseases: cancer, stroke, acute cardiac infarction, and diabetes (Ministry of Health, Labour & Welfare, 2011). Under the medical law, the prefectural governments started to build "Local Health Planning" for mental health. The Japanese healthcare system does not have a 24 h per day, 7 days per week (24/7) community mental health service and thus psychiatric hospitals must provide consultation during a client's crisis or some visiting nursing stations can call or visit the client. However, in a study by Miyamoto, Hashimoto-Koichi, Akiyama, and Takamura (2015), community service staff members were needed 24/7 during crises for clients with mental health difficulties. In the present study, it also was found that constantly high care was needed for those who had a severe mental illness. In other words, flexible, 24/7 operation of mental health services, such as the JOMP, is important. This type of outreach service needs to be included in "Local Health Planning" and should be developed within the existing medical service, such as visiting nurse stations and psychiatric medical settings.

There were limitations to this research. First, outcome data about the team characteristics in relation to the patient outcomes and quality of care were not obtained. The JOMP required that the team should be multidisciplinary, but the teams or caseload sizes were not specified and the staff members had varied experiences in community mental health care, which could have influenced the volume of care or the quality of care. The JOMP team staff had a lecture about "recovery" once per year; the staff members shared their difficulties in order to develop or improve the quality of care. Second, as the clients found it difficult to meet with anyone other than the outreach staff members, it was chosen to conduct a self-report time study in which the staff members self-reported the participants' functioning. This design potentially could identify the type of care that the staff members intended to deliver to the clients in accordance with their philosophy. Therefore, there is a potential for self-report bias.

## CONCLUSION

This study described the concrete care components and amount of care that the JOMP had delivered to its

 

clients. After 6 months of care, half of the clients had better GAF scores and half had stable or decreased scores. When comparing the two groups, the total amount of care that was received by each group was significantly different. The GFO group received more care than the PFO group for: "assistance with daily living tasks," "medical support for psychiatric symptoms," "empowering the client," "communication and coordination," "support for physical health," and "vocational and educational support." This type of care could influence the outcomes of clients who find it difficult to maintain contact with mental health services. The JOMP was a 3 year trial for clients at risk of dropping out of treatment. However, with adequate numbers of staff members providing 10 components of care, some clients improved and became more functional. These data are expected to be helpful in building a new community mental health system in Japan.

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## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

## AUTHOR CONTRIBUTIONS

A. T. participated in the design of this study and coordination, carried out the analysis and interpretation of the data, and wrote the manuscript; Y. K. participated in the research, coordinated, and interpreted the database; M. K. was PI of the JOMP evaluation research fund and conceived the JOMP evaluation study and made substantial contributions to the design of this study.

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