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*Original Article*

# The Relationships among Internalized Stigma, Sense of Coherence, and Personal Recovery of Persons with Schizophrenia Living in the Community

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**We investigated (*i*) the relationships among internalized stigma (IS), sense of coherence (SOC), and the personal recovery (PR) of persons with schizophrenia living in the community, and (*ii*) how to improve the support for these individuals. A questionnaire survey on IS, SOC, and PR was sent by mail to 270 persons with schizophrenia living in the community who were using psychiatric daycare services, of whom 149 responded and 140 were included in the analysis. We established a hypothetical model in which IS influences PR, and SOC influences IS and PR, and we used structural equation modeling to examine the relationships among these concepts. The goodness of fit was acceptable. Our findings suggest that rather than directly promoting PR, SOC promotes PR by mitigating the impact of IS. It is important for nurses/supporters to support individuals with schizophrenia living in the community so that they have opportunities to reflect on their own experiences through their activities and to share their experiences with peers. Nurses/supporters themselves should also reflect on their own support needs. Our findings suggest that this will lead to a reduction of IS and the improvement of SOC, which will in turn promote personal recovery.**

**Key words:** schizophrenia, internalized stigma, sense of coherence, personal recovery, community

In 2004, Japan's Ministry of Health, Labour and Welfare announced a policy for individuals with schizophrenia to 'shift from a focus on inpatient care to a focus on community life' <Ministry of Health, Labour and Welfare, https://www.mhlw.go.jp/topics/2004/09/dl/tp0902-1a.pdf (accessed June 17, 2023)>. An important concept for community life is personal recovery, which originated in the 1980s regarding people with mental illnesses. Personal recovery is not only a return to the state an individual had before his or her illness; it also includes growth beyond the individual's pre-symptomatic state [1,2]. In a conceptual analysis of recovery for persons with schizophrenia living in the community, recovery was defined as 'a process in which persons with schizophrenia utilize support toward their hopes and goals to improve their quality of life (QOL), stabilize their illness through proactive management of their physical condition and medications, and build mutual relationships within the community' [3]. Leamy *et al.* defined personal recovery as a framework consisting of five concepts: 'connectedness, hope and optimism about the future, identity, meaning in life, and empowerment' (the CHIME framework) [4]. Jose *et al.* contended that recovery is both a process and an outcome, and that the party-based definition of recovery includes elements that are primarily related to personal well-being and social inclusion [5]. Personal recovery is thus a concept

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consisting of diverse aspects.

To promote personal recovery, healthcare professionals need to focus more closely on their persons' individual goals and strengths and incorporate interventions that promote the persons' well-being into daily clinical practice [6]. Wellness recovery action plans and illness management and recovery programs have been developed to promote personal recovery, and these have been implemented in Japan and other countries [7,8]. They are being studied as measures to support the proactive community life of people with schizophrenia.

There are still many challenges in the community lives of persons with schizophrenia in Japan. In 2004, a policy for regional transition was proposed <Ministry of Health, Labour and Welfare, https://www.mhlw.go.jp/topics/2004/09/dl/tp0902-1a.pdf (accessed June 17, 2023)>, and in 2011, mental illness was positioned as one of five diseases in the medical plan under the country's Medical Service Act <Ministry of Health, Labour and Welfare, https://www.mhlw.go.jp/file/05-Shingikai-10801000-Iseikyoku-Soumuka/0000127304.pdf (accessed June 17, 2023)>. Although such laws and systems have been established, prejudice, discriminatory attitudes, and stigma toward mental disabilities, especially schizophrenia, persist. Stigma has a strong impact on individuals with mental disabilities, especially in the community, where they interact with others. Stigma can be divided into two categories: public stigma, which is a negative attitude toward a specific group; and internalized stigma, which is a negative attitude toward one's own self as a member of a specific group [9]. It has been reported that people who experience strong public stigma also have strong internalized stigma when they are targets of discrimination bias [10], suggesting a close relationship between public stigma and internalized stigma. Stigma and the negative effects of mental health services and medication have also been identified as impediments to personal recovery [11]. These studies suggest the importance of addressing stigma appropriately. In almost all cases of schizophrenia, antipsychotic medications are used for treatment. The above-mentioned conceptual analysis of personal recovery describes 'stabilizing the disease state through proactive management of physical condition and medication' [3], indicating the significant impact of medication therapy.

Schizophrenia is a disorder that repeatedly relapses and remits and dealing with fluctuating symptoms is thus an important issue for persons with schizophrenia living in the community. In the present study, we focused on persons' sense of coherence. A sense of coherence is closely related to an individual's ability to cope with stress and generate health, and it is a core concept of the salutogenic theory proposed by the health sociologist Aaron Antonovsky [12]. In the salutogenic theory, the current state of health is considered to be somewhere on a continuum between health (health-ease) and health failure (dis-ease). This theory is applicable not only to patients but also to any person located anywhere on the health-dis-ease continuum. It is considered an essential approach for those who live with illness. A sense of coherence reflects a person's overall orientation to life, expressed in terms of the degree of a person's sense of three dynamic but persistent beliefs: (1) the belief that the environmental stimuli that arise within and outside of oneself are ordered, predictable, and explainable ('comprehensibility'); (2) the belief that resources are always available to meet the demands of those stimuli ('manageability'); and (3) the belief that those demands are a challenge, worthy of physical and mental investment ('meaningfulness') [12]. Although the scores for sense of coherence achieved by persons with schizophrenia are often lower than those of the general adult population [13-15], it is believed that a sense of coherence can develop throughout life. The intervention programs for improving the sense of coherence in persons with mental disabilities described by Langeland *et al.* [16] and Forsberg *et al.* [17] resulted in an increase in sense of coherence scores after the completion of the programs, suggesting the possibility of improvement in the sense of coherence.

Internalized stigma, sense of coherence, and personal recovery all seem to have one thing in common 'how the person concerned perceives his or her own life and experiences'. Studies of the respective concepts of internalized stigma and personal recovery in persons with mental disabilities identified a significant positive association between sense of coherence and personal recovery [18], a significant negative correlation between sense of coherence and internalized stigma [19], and a significant negative association between internalized stigma and personal recovery [20]; however, we have found no published study focusing on the relationships among the three. In addition, most of the previous investigations did not limit their subjects to persons with schizophrenia, especially those living in the community.

Considering that schizophrenia is a common disorder that affects approximately 1 in 100 Japanese and is the most common cause of hospitalization in psychiatric wards, support for individuals with schizophrenia who live in the community is an important nursing issue. Personal recovery is not an individual effort; rather, it is encouraged in the context of relationships with society. Thus, rather than working on personal recovery itself, it is thought that examining ways to approach a sense of coherence (which is an orientation toward the world in general) and internalized stigma (which arises from relationships with society) will lead to the consideration of new community life support.

Psychiatric daycare is a facility used by community-living individuals with schizophrenia at which a variety of activities are conducted, based on a somewhat fixed daily routine for restoring social life functions. In the development of psychiatric daycare programs, it is hoped that these activities can be easily incorporated into daily activities. In the present study, we decided to limit the target population to persons with schizophrenia who attend psychiatric daycare while living in the community. The purpose of this study was to determine how to support the community lives of persons with schizophrenia by clarifying the relationships among internalized stigma, sense of coherence, and personal recovery and basic attributes, and by examining the models among the three concepts. We established a hypothesized model using the three concepts with reference to Antonovsky's salutogenic model [12].

## Participants and Methods

***Study design.*** The study design was a cross-sectional study.

***Hypothetical model.*** In response to a stressor and the tension it causes, the sense of coherence formed at that time mobilizes coping resources called general resistance resources (GRRs) to deal with the stressor, and the success or failure of the coping process determines one's health. In this study, we hypothesized that internalized stigma is related to personal recovery, and that a sense of coherence is related to both internalized stigma and personal recovery, as depicted in Fig. 1.

***Collaborating institutions and participants.*** In order to unify the background factors of the participants, we selected psychiatric daycare facilities in nine prefectures in Japan's Chugoku and Shikoku regions,

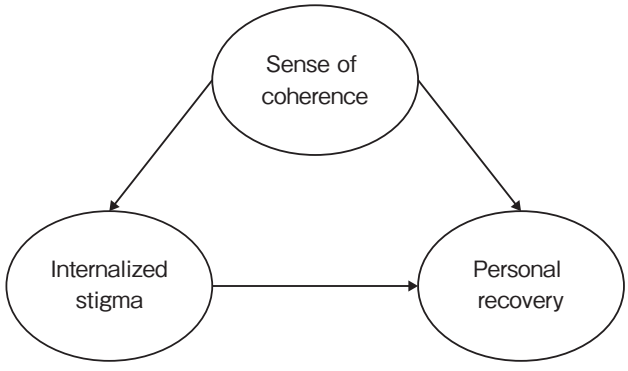


Fig. 1 The hypothetical model of the relationships among internalized stigma, sense of coherence, and personal recovery.

which are considered to have relatively close geographical and social environments, as target facilities. To select target facilities, we searched the list of 1,186 hospitals (as of April 19, 2022) on the Japan Psychiatric Hospitals Association websiteb <https://www.nisseikyo.or.jp>, setting the facility criterion as 'psychiatric day/night care'. We selected 94 facilities as candidates. A letter explaining the outline of the study was mailed to the hospital administrator of each facility, and the 15 facilities that gave consent were selected as cooperating facilities for the study (consent rate: 16.0%).

The study subjects were persons with schizophrenia who live in the community while using psychiatric daycare. We defined persons 'living in the community' as those living at home, rented accommodations (such as an apartment or condominium), or in a group home; we excluded patients who were hospitalized. We enrolled individuals who: (1) had been diagnosed with schizophrenia and were aware of their illness, (2) were >18 years old with schizophrenia and were living in their community (regardless of whether or not they were living with one or more relatives), (3) had been using the psychiatric daycare center for >6 months and had a calm daily emotional life, (4) were judged by the daycare administrator and psychiatrist to have no obstacles to participation in the study, and (5) understood the purpose of the study, agreed to it, had read the study instructions, and were able to complete the study's questionnaire.

***Data collection methods and duration.*** A letter explaining the study, the survey form, and envelopes were sent to the administrators of the collaborating psychiatric daycare facilities and were distributed to the

participants by the administrators. The participants' responses were requested to be delivered by mail within 2 weeks of distribution. The survey was conducted from September 2022 to February 2023.

***Questionnaire content.*** The questionnaire consisted of questions related to internalized stigma, sense of coherence, personal recovery, and basic attributes.

**1. Internalized stigma.**

The Japanese version of the 10-item Internalized Stigma of Mental Illness Scale (ISMI-10) was used. The Japanese version of the ISMI-10 was translated into Japanese by Tanabe [21] from a shortened 10-item version created by Boyd *et al.* [22]. The scale's reliability and validity have been confirmed [21]. ISMI-10 consists of two sub-concepts: eight items for internalized stigma and two items for stigma resistance. Each item is graded on a four-point Likert scale ranging from '1: Do not agree at all' to '4: Very much agree.' The stigma resistance items are reversal items. The scores for each item are summed and then divided by the total number of items answered, resulting in a mean score ranging from 1 to 4 points. We used the two-category method of Ritsher & Phelan [23] and the four-category method of Lysaker *et al.* [24] to interpret the scores.

In Ritsher & Phelan's method, 1.00-2.50 points as the score are rated as low internalized stigma and 2.51-4.00 points are considered high. In the present study, we evaluated the four categories according to the method used by Lysaker *et al.*: 1.00-2.00 points are rated as no or minimal internalized stigma, 2.01-2.50 points are reflect mild internalized stigma, 2.51-3.00 points are considered moderate internalized stigma, and 3.01-4.00 points are rated as severe internalized stigma. Cronbach's alpha coefficient in this study was 0.803.

**2. Sense of coherence.**

We used the 13-item Japanese version of the Sense of Coherence Scale (SOC-13), which was developed by Yamazaki *et al.* based on the sense of coherence scale proposed by Antonovsky, the reliability and validity of which have been confirmed [12]. The scale consists of 13 items: five items for comprehensibility, four items for manageability, and four items for meaningfulness. Five of these items include reversal items. Responses are each measured by the semantic differential method with a score range of 7 points (1-7). Scores range from 7 to 35 points for comprehensibility and from 7 to 28 points for manageability and meaningfulness, with a total score range of 13 to 91 points. Higher scores indicate a greater sense of coherence. Cronbach's alpha coefficient in this study was 0.767.

**3. Personal recovery.**

Personal recovery is a concept with diverse aspects. As noted in the Introduction, Jose *et al.* stated that recovery is both a process and an outcome, and they noted that their party-based definition of recovery includes elements that are related primarily to personal well-being and social inclusion [5]. Thronicroft & Slade also reported that 'establishing outcomes related to personal recovery requires the use of subjective outcome measures related to well-being and progress toward personal goals from the perspective of the parties themselves' [25]. Our present investigation thus considered a Questionnaire about the Process of Recovery (QPR) and a Subjective Well-being Under Neuroleptic Drug Treatment Scale (SWNS). This study was designed to provide a holistic view of personal recovery by measuring both the process as well as the well-being (outcome) that results from recovery.

For the process of recovery, we used the Japanese version of the Questionnaire about the Process of Recovery (QPR-J), which is considered the scale that best reflects the CHIME framework; the questionnaire created by Neil *et al.* [26] was translated into Japanese by Kanehara *et al.*, and its reliability and validity were confirmed [27,28]. It consists of two sub-concepts comprising 17 intrapersonal items and five interpersonal items. Each item is answered on a five-point scale ranging from '0: do not agree at all' to '4: strongly agree,' with scores ranging from 0 to 88 points. Higher scores indicate a more advanced state of recovery. Cronbach's alpha coefficient in this study was 0.930.

To assess the participants' subjective well-being, we used the SWNS Short form, Japanese version (SWNS-J). This scale was created by Naber *et al.* [29] and translated into Japanese by Shimohira (Watanabe) *et al.* [30]. Its reliability and validity have been confirmed [30]. The SWNS-J consists of five sub-concepts (mental functioning, self-control, emotional regulation, physical functioning, and social integration), each with four items. The 20 items are answered using a six-point scale ranging from 'not at all' to 'feel very much so,' with scores ranging from 20 to 120 points. Higher scores indicate better subjective well-being. Cronbach's alpha coefficient in this study was 0.894.

**4. Basic attributes.**

The questionnaire asked the respondent about his or

her age, sex, living environment, living situation, marital status, academic background, medication usage, feeling that the medication is suited to him/her, age at first psychiatric consultation, frequency of psychiatric consultations, experience with psychiatric hospitalization (and if so, the number of years since the last discharge from a hospital), the number of years and the frequency of psychiatric daycare use, the use of services other than psychiatric daycare, and sense of belonging. For our evaluation of the participants' sense of belonging, we used the Sense of Belonging Scale for Persons with Mental Illness, which was developed by Kunikata *et al.*; its reliability and validity have been confirmed [31]. The scale's eight items are answered on a four-point scale ranging from '1: not applicable' to '4: applicable,' with scores ranging from 8 to 32 points. Higher scores indicate a greater sense of belonging. Cronbach's alpha coefficient in this study was 0.867.

***Statistical analysis.*** Descriptive statistics were performed to examine the relationships among the participants' basic attributes and their internalized stigma, sense of coherence, and personal recovery. We calculated correlation coefficients and examined them for associations among internalized stigma, sense of coherence, and personal recovery, and we performed structural equation modeling to examine the relationships among the three concepts. To determine the model fit, we used the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), and the root mean square error of approximation (RMSEA). Modifications were repeated until a good-fit model was obtained. In general, if the GFI and CFI are $>0.90$ and the RMSEA is $<0.05$, the model is judged to fit the data [32]. IBM SPSS Statistics 28 and Amos 28 software were used for the statistical analyses. Since there were missing values for 0-6 cases in each variable, we replaced the missing values with the series mean values for the analyses.

***Compliance with ethical standards.*** This study was approved by the Research Ethics Committee of the Kagawa University Faculty of Medicine (approval no. 2022-069). We obtained informed consent for participation and data publication from each participant.

## Results

***The participants' basic attributes and the scores for each variable.*** Questionnaires were sent to 270 individuals at 15 collaborating institutions. Responses were obtained from 149 individuals (55.2% response rate). The number of individuals at each facility ranged from a minimum of one to a maximum of 100. We excluded those who did not consent to participate in the study, had used psychiatric daycare for $<6$ months, or provided responses that were not eligible. A final total of 140 individuals were included in the analyses (valid response rate: 94.0%),

The basic attributes of the participants and their associations with internalized stigma, sense of coherence, and personal recovery are shown in Table 1. The scores for each variable are given in Table 2, and the distribution of internalized stigma scores is provided in Table 3. The average age of the participants was $54.3 \pm 11.7$ years, and $>60\%$ were male. Most of the participants had attended their first psychiatric consultation in their 20s, and $>40\%$ were consulting a psychiatrist ~1×/month. Almost all had a history of psychiatric hospitalization, and $8.6 \pm 9.0$ years had passed since their last discharge. They had been using psychiatric daycare for $8.3 \pm 7.0$ years, and the frequency of use was $3.3 \pm 1.7$ times/week. Regarding the use of services other than psychiatric daycare, more than half of the participants described using home nursing (50.0%), a disability pension (63.6%), or a mental disability health and welfare certificate (58.6%).

In relation to the participants' basic attributes and each variable, a sense of belonging was significantly different from the other variables for internalized stigma, sense of coherence, and personal recovery ($r = -0.358$ to 0.611, $p<0.05$). Other significant items for sense of coherence were education (high school vs. university/graduate school, $p=0.004$) and frequency of psychiatric consultation (once every 2 weeks vs. other, $p=0.002$). Regarding personal recovery, the QPR-J scale includes marital status (currently married vs. divorced or widowed, $p=0.049$), academic background (high school vs. university/graduate school, $p=0.035$), and feeling that the medication is suited for them ('not sure' vs. 'very much,' $p=0.000$). In the distribution of internalized stigma scores, 37 participants (26.4%) had no or minimal internalized stigma, and 31 (22.2%) had moderate or severe internalized stigma.

Spearman's rank correlation coefficients were calculated for the associations among internalized stigma, sense of coherence, and personal recovery (Table 4). We observed a negative correlation between internalized stigma and sense of coherence ($r=-0.537$) and a negative correlation between internalized stigma and

**Table 1** Basic attributes of the participants and their associations with internalized stigma, sense of coherence, and personal recovery scores N = 140

| Characteristics | | N (mean) | % (SD†) | Internalized stigma Score | Internalized stigma p/r value | Sense of coherence Score | Sense of coherence p/r value | Process of recovery Score | Process of recovery p/r value | Subjective well-being under neuroleptic drug treatment Score | Subjective well-being under neuroleptic drug treatment p/r value | Test Methods |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age, years | | 54.3 | 11.7 | 2.3 ± 0.5 | −0.016 | 54.9 ± 11.9 | 0.118 | 57.0 ± 12.8 | −0.089 | 76.4 ± 15.0 | 0.081 | #1 |
| Sex | Male | 90 | 64.3 | 2.2 ± 0.5 | 0.035* | 54.7 ± 11.5 | 0.882 | 58.0 ± 12.5 | 0.170 | 78.2 ± 15.0 | 0.177 | #2 |
| | Female | 48 | 34.3 | 2.4 ± 0.4 | | 55.4 ± 12.7 | | 55.4 ± 13.6 | | 73.4 ± 14.7 | | |
| | (−) | 2 | 1.4 | 2.7 ± 0.3 | | 51.0 ± 17.0 | | 50.0 ± 4.2 | | 68.5 ± 19.1 | | |
| Living enviroment | Home | 59 | 42.1 | 2.2 ± 0.4 | 0.173 | 56.9 ± 12.5 | 0.132 | 57.4 ± 13.4 | 0.595 | 78.2 ± 14.4 | 0.406 | #2 |
| | Rented accommodation (condominium, apartment) | 39 | 27.9 | 2.3 ± 0.5 | | 52.2 ± 11.5 | | 55.0 ± 12.5 | | 74.8 ± 16.4 | | |
| | Group home | 41 | 29.3 | 2.4 ± 0.5 | | 54.0 ± 11.8 | | 57.8 ± 12.4 | | 74.2 ± 14.5 | | |
| | Unknown | 1 | 0.7 | | | | | | | | | |
| Living situation | Single | 58 | 41.4 | 2.3 ± 0.5 | 0.562 | 53.9 ± 13.2 | 0.411 | 54.7 ± 12.4 | 0.344 | 74.8 ± 14.3 | 0.660 | #2 |
| | With family | 53 | 37.9 | 2.3 ± 0.4 | | 56.0 ± 10.8 | | 58.5 ± 12.0 | | 77.8 ± 15.0 | | |
| | Other | 29 | 20.7 | 2.2 ± 0.5 | | 54.9 ± 11.3 | | 58.7 ± 14.8 | | 77.0 ± 16.7 | | |
| Marital status | Unmarried | 106 | 75.7 | 2.3 ± 0.4 | 0.158 | 53.7 ± 11.4 | 0.134 | 56.9 ± 12.2 | | 75.4 ± 14.5 | 0.087 | #2 |
| | Currently married | 13 | 9.3 | 2.0 ± 0.6 | | 61.9 ± 14.7 | | 62.8 ± 19.6 | 0.049** | 86.8 ± 18.7 | | |
| | Divorced/widowed | 21 | 15.0 | 2.4 ± 0.4 | | 56.6 ± 11.6 | | 53.8 ± 10.2 | | 74.7 ± 13.0 | | |
| Academic background | Junior high school | 19 | 13.6 | 2.2 ± 0.4 | 0.054 | 53.9 ± 13.9 | | 57.2 ± 15.5 | | 78.5 ± 14.5 | | #2 |
| | High school | 60 | 42.9 | 2.4 ± 0.5 | | 52.4 ± 12.1 | | 53.4 ± 12.4 | | 70.7 ± 13.8 | | |
| | Vocational school | 17 | 12.1 | 2.2 ± 0.4 | | 57.6 ± 8.6 | 0.004** | 62.3 ± 12.1 | 0.035** | 79.1 ± 12.1 | 0.000** | |
| | Junior college | 12 | 8.6 | 2.3 ± 0.4 | | 52.4 ± 11.9 | | 54.5 ± 9.2 | | 74.4 ± 15.1 | | |
| | University/Graduate school | 30 | 21.4 | 2.1 ± 0.5 | | 60.8 ± 10.0 | | 62.3 ± 11.7 | | 86.6 ± 13.9 | | |
| | Other | 2 | 1.4 | 2.7 ± 0.3 | | 45.5 ± 9.2 | | 51.5 ± 6.4 | | 62.5 ± 10.6 | | |
| Medication usage‡ | Self-management | 102 | 72.8 | 2.3 ± 0.5 | 0.026* | 54.0 ± 11.8 | 0.058 | 57.7 ± 12.5 | 0.666 | 76.4 ± 15.2 | 0.162 | #2 |
| | Partial assistance from family members | 37 | 26.4 | 2.3 ± 0.5 | | 55.7 ± 11.1 | | 54.3 ± 12.9 | | 74.6 ± 14.1 | | |
| | Use of long-acting injectable drugs | 10 | 7.1 | 2.5 ± 0.5 | | 57.9 ± 14.0 | | 60.7 ± 12.7 | | 75.6 ± 15.0 | | |
| Feeling that the medication is suited | Not at all | 3 | 2.1 | 2.9 ± 0.5 | 0.044* | 51.7 ± 21.4 | 0.288 | 48.7 ± 13.6 | | 69.6 ± 17.9 | 0.159 | #2 |
| | Not so much | 8 | 5.7 | 2.4 ± 0.3 | | 52.0 ± 7.0 | | 58.6 ± 6.9 | | 74.4 ± 10.8 | | |
| | Not sure | 28 | 20.0 | 2.3 ± 0.4 | | 51.9 ± 13.1 | | 48.3 ± 14.5 | | 70.9 ± 12.1 | | |
| | Somewhat | 55 | 39.3 | 2.3 ± 0.4 | | 55.0 ± 9.4 | | 57.5 ± 12.6 | 0.000** | 76.8 ± 14.8 | | |
| | Very much | 46 | 32.9 | 2.1 ± 0.5 | | 57.3 ± 13.7 | | 61.9 ± 10.0 | | 80.0 ± 16.7 | | |
| Age at first psychiatric consultation | Teens | 29 | 20.7 | 2.3 ± 0.3 | 0.718 | 54.2 ± 12.0 | 0.453 | 58.9 ± 11.6 | 0.876 | 74.3 ± 13.6 | 0.623 | #2 |
| | 20s | 67 | 47.9 | 2.3 ± 0.5 | | 54.9 ± 9.7 | | 57.0 ± 14.0 | | 77.1 ± 14.6 | | |
| | 30s | 25 | 17.9 | 2.3 ± 0.6 | | 54.2 ± 15.3 | | 56.0 ± 13.2 | | 75.4 ± 19.1 | | |
| | 40s | 11 | 7.9 | 2.4 ± 0.3 | | 55.6 ± 15.5 | | 54.9 ± 10.2 | | 75.5 ± 10.8 | | |
| | 50s | 6 | 4.2 | 2.1 ± 0.5 | | 63.2 ± 12.4 | | 55.0 ± 8.8 | | 86.3 ± 16.0 | | |
| | 60s | 2 | 1.4 | 2.7 ± 0.6 | | 45.0 ± 7.1 | | 59.0 ± 21.2 | | 71.0 ± 5.7 | | |
| | More older | 0 | 0.0 | | | | | | | | | |
| Frequency of psychiatric consultations | About once a week | 11 | 7.9 | 2.4 ± 0.4 | 0.418 | 52.2 ± 10.9 | | 57.6 ± 15.0 | 0.905 | 70.8 ± 14.0 | 0.370 | #2 |
| | About once every 2 weeks | 39 | 27.9 | 2.3 ± 0.4 | | 50.4 ± 11.4 | | 56.1 ± 13.5 | | 74.0 ± 13.8 | | |
| | About once a month | 61 | 43.6 | 2.3 ± 0.5 | | 55.6 ± 11.3 | 0.002** | 58.5 ± 11.3 | | 77.6 ± 16.5 | | |
| | Other/Unknown | 26 | 20.6 | 2.2 ± 0.5 | | 61.0 ± 12.6 | | 56.2 ± 12.4 | | 79.7 ± 13.9 | | |
| Experience with psychiatrichospitalization | Yes | 133 | 95.0 | 2.3 ± 0.4 | 0.355 | 54.8 ± 11.6 | 0.507 | 56.7 ± 12.9 | 0.104 | 76.2 ± 14.5 | 0.231 | #3 |
| | No | 6 | 4.3 | 2.2 ± 0.8 | | 56.7 ± 18.2 | | 63.0 ± 11.3 | | 80.3 ± 26.2 | | |
| | Unknown | 1 | 0.7 | | | | | | | | | |
| Previous hospitalization<br>Number of years since last discharge from a hospital | | 8.6 | 9.0 | 2.3 ± 0.5 | 0.024 | 54.9 ± 11.9 | 0.141 | 57.0 ± 12.8 | 0.021 | 76.4 ± 15.0 | 0.060 | #1 |
| Number of years of psychiatric daycare use | | 8.3 | 7.0 | 2.3 ± 0.5 | −0.048 | 54.9 ± 11.9 | 0.079 | 57.0 ± 12.8 | 0.099 | 76.4 ± 15.0 | 0.052 | #1 |
| Frequency of psychiatric daycare use (days per week) | | 3.3 | 1.7 | 2.3 ± 0.5 | 0.012 | 54.9 ± 11.9 | 0.071 | 57.0 ± 12.8 | −0.011 | 76.4 ± 15.0 | 0.044 | #1 |
| Use of services other than psychiatric daycare‡ | Community activity support center | 26 | 18.6 | 2.3 ± 0.5 | 0.753 | 52.8 ± 12.4 | 0.481 | 57.8 ± 14.6 | 0.808 | 75.9 ± 18.1 | 0.386 | #2 |
| | Type B support for continuous employment | 22 | 15.7 | 2.4 ± 0.3 | | 53.1 ± 9.1 | | 59.5 ± 10.8 | | 74.4 ± 9.7 | | |
| | Type A support for continuous employment | 3 | 2.1 | 2.0 ± 0.5 | | 53.8 ± 10.6 | | 54.0 ± 15.1 | | 74.7 ± 20.8 | | |
| | Home-visit nursing care | 70 | 50.0 | 2.3 ± 0.4 | | 54.5 ± 11.8 | | 57.2 ± 12.7 | | 75.7 ± 13.7 | | |
| | Home helpers | 13 | 9.3 | 2.2 ± 0.4 | | 53.1 ± 12.4 | | 58.6 ± 10.0 | | 79.5 ± 15.4 | | |
| | Disability pension | 89 | 63.6 | 2.2 ± 0.5 | | 55.4 ± 12.2 | | 58.1 ± 13.3 | | 77.2 ± 15.7 | | |
| | Mental disability health and welfare certificate | 82 | 58.6 | 2.3 ± 0.4 | | 54.6 ± 12.7 | | 57.7 ± 12.5 | | 77.4 ± 16.0 | | |
| | Other | 5 | 3.6 | 2.4 ± 0.5 | | 51.9 ± 9.5 | | 55.2 ± 7.1 | | 74.0 ± 12.1 | | |
| | None | 6 | 4.3 | 2.3 ± 0.9 | | 55.8 ± 22.5 | | 49.3 ± 23.4 | | 71.7 ± 25.9 | | |
| Score on the sense of belonging scale | | 22 | 5.5 | 2.3 ± 0.5 | −0.358** | 54.9 ± 11.9 | 0.231** | 57.0 ± 12.8 | 0.611** | 76.4 ± 15.0 | 0.466** | #1 |

† SD: Standard deviation

‡ Total percentage will exceed 100 due to multiple responses

#1: Spearman's rank correlation coefficient, #2: Kruskal-Wallis test (Boferroni method), #3: Mann-Whitney's U test

*No significant difference by Bonferroni method

**$p < 0.05$

Table 2 Scores for each variables

N=140

| | Range | Mean | SD | Median | Minimum | Maximum |
|---|---|---|---|---|---|---|
| Internalized stigma | | | | | | |
| Total | 1–4 | 2.3 | 0.5 | 2.3 | 1 | 3.7 |
| Internalized stigma | 1–4 | 2.3 | 0.5 | 2.3 | 1 | 4 |
| Stigma resistnace | 1–4 | 2.4 | 0.6 | 2.5 | 1 | 4 |
| Sense of coherence | | | | | | |
| Total | 13–91 | 54.9 | 11.9 | 55.0 | 16 | 91 |
| Comprehensibility | 5–35 | 20.4 | 5.8 | 20.4 | 5 | 35 |
| Manegeability | 4–28 | 15.9 | 4.5 | 16.0 | 5 | 28 |
| Meaningfullness | 4–28 | 18.6 | 4.3 | 19.0 | 4 | 28 |
| Process of recovery | | | | | | |
| Total | 0–88 | 57.0 | 12.8 | 57.0 | 12 | 88 |
| Intrapersonal | 0–68 | 44.3 | 10.5 | 45.0 | 10 | 68 |
| Interpersonal | 0–20 | 12.7 | 3.0 | 13.0 | 0 | 20 |
| Subjective well-being under neuroleptic drug treatment | | | | | | |
| Total | 20–120 | 76.4 | 15.0 | 75.0 | 33 | 117 |
| Mental functioning | 4–24 | 14.9 | 3.7 | 14.0 | 4 | 24 |
| Self-control | 4–24 | 15.7 | 3.3 | 15.7 | 4 | 24 |
| Emotional reguration | 4–24 | 15.5 | 3.3 | 15.0 | 6 | 24 |
| Physical functioning | 4–24 | 15.3 | 3.9 | 15.0 | 6 | 24 |
| Social integration | 4–24 | 15.0 | 3.7 | 15.0 | 4 | 24 |

SD: standard deviation.

Table 3 Distribution of internalized stigma

N = 140

| | Range | N | % |
|---|---|---|---|
| No or minimal internalized stigma | 1.00–2.00 | 37 | 26.4 |
| Mild internalized stigma | 2.01–2.50 | 72 | 51.4 |
| Moderate internalized stigma | 2.51–3.00 | 25 | 17.9 |
| Severe internalized stigma | 3.01–4.00 | 6 | 4.3 |

personal recovery (r = −0.475 to −0.615). In contrast, we observed a positive correlation between sense of coherence and personal recovery (r = 0.418 to 0.699). Each variables of internalized stigma, sense of coherence and personal recovery were found to be related.

***The relationships among internalized stigma, sense of coherence, and personal recovery.*** We first analyzed the association between internalized stigma and personal recovery by performing structural equation modeling. In the original model, $\chi^2(26) = 112.248$, $p = 0.000$, GFI = 0.852, CFI = 0.872, and RMSEA = 0.154. All paths were significant at $p < 0.05$, but not at statistically acceptable levels. With reference to the adjusted index, a model modified in a way that allowed for an examination of the correlations among the error variables is shown in Fig. 2. In the modified model, $\chi^2(25) = 45.780$, $p = 0.007$, GFI = 0.939, CFI = 0.969, and RMSEA = 0.077; moreover, all paths were significant at $p < 0.05$. With this modification, we considered the model in which internalized stigma inhibits personal recovery statistically acceptable.

We added sense of coherence to this model to examine the associations among internalized stigma, sense of coherence, and personal recovery. The first model assumed $\chi^2(51) = 172.290$, $p = 0.000$, GFI = 0.827, CFI = 0.863, and RMSEA = 0.131; however, the paths from internalized stigma to personal recovery and from sense of coherence to personal recovery were not significant. The model was modified, and in the modified model, $\chi^2(49) = 95.540$, $p = 0.000$, GFI = 0.900, CFI = 0.948, and RMSEA = 0.083 (Fig. 3); the path from sense of coherence to personal recovery was not significant ($p = 0.291$), but all other paths were significant at $p < 0.05$. The explanation rate for personal recovery in this model was 82%, and both the path from sense of coherence to internalized stigma and the path from internalized stigma to personal recovery were negatively associated, confirming the indirect effect of sense of coherence.

**Table 4** Associations among internalized stigma, sense of coherence, and personal recovery

| | | Internalized stigma | | | Sense of coherence | | | | Process of recovery | | | Subjective well-being under neuroleptic drug treatment | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Internalized stigma | Stigma resistance | Total | Comprehensibility | Manageability | Meaningfulness | Total | Intrapersonal | Interpersonal | Total | Mental functioning | Self-control | Emotional regulation | Physical functioning | Social integration |
| Internalized stigma | Total | – | | | | | | | | | | | | | | | |
| | Internalized stigma | 0.972** | – | | | | | | | | | | | | | | |
| | Stigma resistance | 0.560** | 0.395** | – | | | | | | | | | | | | | |
| Sense of coherence | Total | −0.537** | −0.540** | −0.292** | – | | | | | | | | | | | | |
| | Comprehensibility | −0.414** | −0.436** | −0.189* | 0.871** | – | | | | | | | | | | | |
| | Manageability | −0.411** | −0.422** | −0.204* | 0.785** | 0.528** | – | | | | | | | | | | |
| | Meaningfulness | −0.503** | −0.458** | −0.395** | 0.689** | 0.453** | 0.385** | – | | | | | | | | | |
| Process of recovery | Total | −0.475** | −0.429** | −0.459** | 0.418** | 0.311** | 0.225** | 0.460** | – | | | | | | | | |
| | Intrapersonal | −0.491** | −0.445** | −0.449** | 0.449** | 0.338** | 0.250** | 0.492** | 0.985** | – | | | | | | | |
| | Interpersonal | −0.266** | −0.225** | −0.360** | 0.183* | 0.132 | 0.071 | 0.200* | 0.775** | 0.684** | – | | | | | | |
| Subjective well-being under neuroleptic drug treatment | Total | −0.615** | −0.615** | −0.390** | 0.699** | 0.640** | 0.432** | 0.562** | 0.663** | 0.680** | 0.428** | – | | | | | |
| | Mental functioning | −0.498** | −0.502** | −0.346** | 0.606** | 0.570** | 0.377** | 0.501** | 0.483** | 0.509** | 0.245** | 0.865** | – | | | | |
| | Self-control | −0.500** | −0.504** | −0.286** | 0.601** | 0.554** | 0.362** | 0.481** | 0.533** | 0.558** | 0.295** | 0.823** | 0.648** | – | | | |
| | Emotional regulation | −0.525** | −0.513** | −0.388** | 0.498** | 0.400** | 0.280** | 0.554** | 0.620** | 0.631** | 0.418** | 0.767** | 0.632** | 0.583** | – | | |
| | Physical functioning | −0.542** | −0.548** | −0.305** | 0.558** | 0.528** | 0.346** | 0.414** | 0.576** | 0.588** | 0.371** | 0.836** | 0.671** | 0.597** | 0.568** | – | |
| | Social integration | −0.560** | −0.534** | −0.381** | 0.618** | 0.554** | 0.430** | 0.474** | 0.549** | 0.554** | 0.405** | 0.779** | 0.606** | 0.591** | 0.482** | 0.586** | – |

Spearman's rank correlation coefficient $^{**}p<0.01$, $^{**}p<0.05$

## Discussion

***The participants' background variables and their relationship to internalized stigma, sense of coherence, and personal recovery.*** Our participants were mostly males in their 50s, most of whom had been using psychiatric daycare for about 8 years, ~3×/week. Approximately 20% of the participants had moderate or high internalized stigma shown by the four-category method. A study using the two-category method reported that approx. 20% of persons with schizophrenia had high internalized stigma and that internalized stigma was associated with high medication side effects and low subjective well-being [33]. In the present study, internalized stigma was also negatively correlated with the process of recovery and subjective well-being. An investigation of Japanese psychiatric daycare users 'coming out' (telling others that they have a mental disorder) reported that persons with schizophrenia had lower intentions to come out than persons with mood disorders [34]. This suggests that there is a background of reluctance or difficulty in telling others that one has schizophrenia. In relation to the present participants' basic attributes, those who felt that their medication was very suitable for them had significantly higher QPR-J scores than those who were undecided as to whether the medication was suitable for them. These findings suggest that carefully asking participants about their adherence to their antipsychotic medications, such as their medication status and comfort level, may help to reduce internalized stigma and promote personal recovery.

The sense of coherence score of our participants was 54.9 ± 11.9 points. In another study of persons with schizophrenia who were hospitalized or using psychiatric daycare, the score was 56.6 ± 17.1 points [13], 53.3 ± 13.1 points [14], and 52.1 ± 10.7 points [15], which were generally similar to the scores in the present study. The mean SOC-13 score, which was representative of the Japanese population, was reported to be 59.0 ± 12.2 [35], suggesting a slightly lower value in comparison. A possible explanation for this difference is that some of the present participants had full sense of coherence scores, which may be because some of the questions in the sense of coherence questionnaire were abstract; they thus chose options at both ends that were relatively easy to understand when answering the questions. However, since this was a mail survey and the

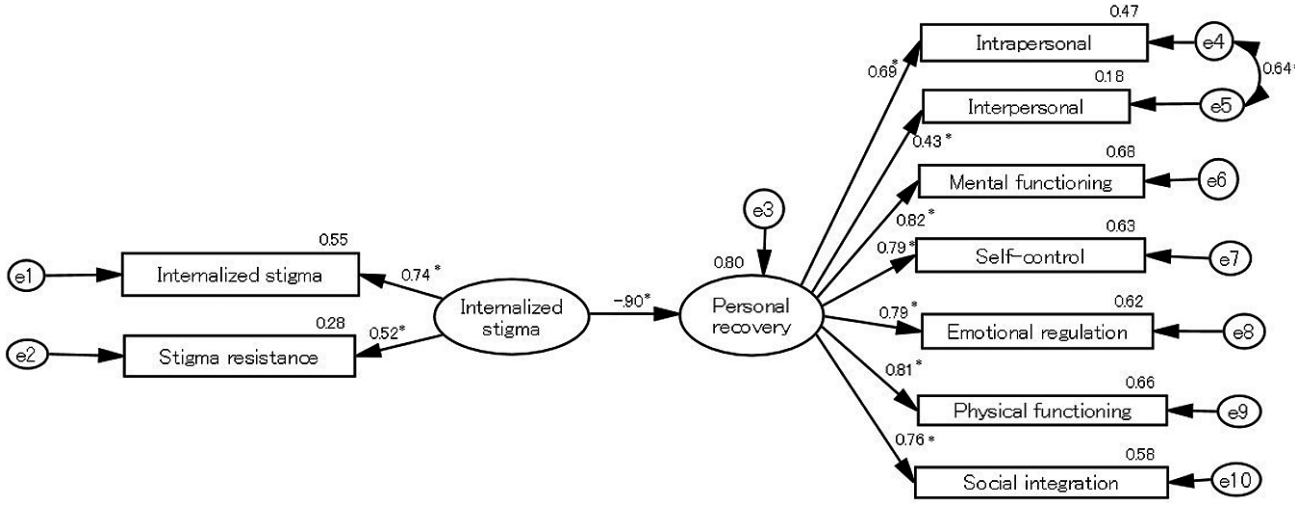


**Fig. 2** The relationship between internalized stigma and personal recovery. The *unidirectional arrows* in the figure represent predictive/explanatory relationships, and the *bidirectional arrows* represent correlations. The variable that starts the arrow is the influencing variable, and the variable that receives the arrow is the affected variable. The number listed beside each arrow is the path coefficient, which is a numerical value indicating the strength and magnitude between variables. Error variables are indicated by 'e.' The number beside personal recovery is the explanatory rate of personal recovery in this model. $^{*}p < 0.05$.

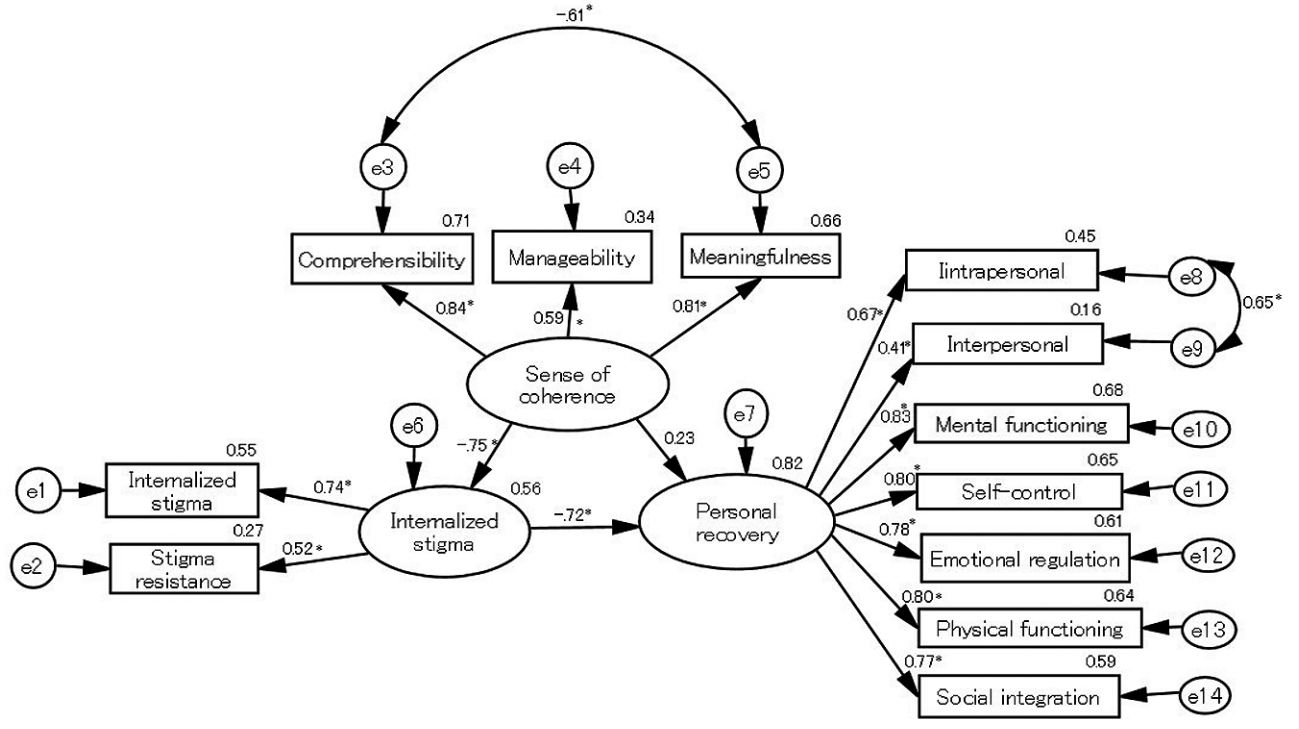


**Fig. 3** The relationships among internalized stigma, sense of coherence, and personal recovery. The *unidirectional arrows* in the figure represent predictive/explanatory relationships, and the *bidirectional arrows* represent correlations. The variable that starts the arrow is the influencing variable, and the variable that receives the arrow is the affected variable. The number listed beside each arrow is the path coefficient, which is a numerical value indicating the strength and magnitude between variables. Error variables are indicated by 'e.' The number beside personal recovery is the explanatory rate of personal recovery in this model. $^{*}p < 0.05$.

detailed background of the respondents was unknown, we cannot rule out the possibility that the sense of coherence of the respondents themselves may actually be very high.

Regarding items related to personal recovery, in previous studies the participants' QPR-J scores were 56.8 ± 12.8 [27, 28] and the SWNS-J scores were 71.8 ± 11.9 [36]. Both scores are very similar to those obtained in the present study; however, the background factors are different. The previous QPR-J studies [27, 28] were limited to persons with mental illness and not schizophrenia, and the previous SWNS-J study [36] included individuals with schizophrenia who were hospitalized. Although simple comparisons cannot be made, all of those studies enrolled only people with mental illness in Japan, and we believe that they provide some informative value with regard to personal recovery for individuals with schizophrenia in Japan.

One of the characteristic items in relation to the basic attributes of the present study's participants and each concept is that we observed significant differences for the sense of coherence and personal recovery in terms of academic background (high school vs. university/graduate school). The age at the onset of schizophrenia is from late teens to mid-30s, a period in life when many people are studying as well as learning about relationships and social relationships. Although most people with schizophrenia are sheltered by their parents through high school, they gradually move away from their parents upon graduation from high school, aiming to be on their own. This is a period in which they experience not only academic challenges but also challenges related to interpersonal relationships, life skills, work, and many other aspects of life. It has been reported that one's sense of coherence is unstable until adolescence but stabilizes in adulthood after various life experiences [12], and that the average sense of coherence increases with aging [35]. During high school and college, an individual has much more discretion in both learning and life in general and begins to take the initiative in his or her own life. Thus, the differences in the sense of coherence and personal recovery between high school graduates and graduates of university/graduate school may be due to the amount of independent life experience.

Our analyses also revealed that a sense of belonging showed a weak negative correlation with internalized stigma and a weak-to-moderate positive correlation with sense of coherence and personal recovery. A sense of belonging was defined by Kunikata *et al.* as 'the sense of being in a place where you can be there, where you can be yourself, and where you can recognize that you can be there as you are' [31]. It has been reported that a sense of belonging buffers the effects of internalized stigma in persons with mental disabilities [37], and that being accepted by society, being employed, and being productive increase both hope and a sense of belonging in persons with schizophrenia [38]. In our present study population, there were 3 to 26 persons who used community activity support centers and Type A and Type B support for continuous employment in addition to psychiatric daycare, although in some cases there was overlap. Although we did not obtain further details of social participation other than psychiatric daycare in this study, we observed that the participants used psychiatric daycare 3.3 ± 1.7 times/week. Psychiatric daycare facilities may contribute to a reduction of internalized stigma and the promotion of a sense of coherence and personal recovery.

***The relationships among internalized stigma, sense of coherence, and personal recovery.*** The structural equation modeling among the three concepts revealed a negative association from a sense of coherence to internalized stigma and a negative association from internalized stigma to personal recovery, whereas the direct path from a sense of coherence to personal recovery was not significant. Our findings thus suggest that among individuals with schizophrenia, a sense of coherence does not directly promote personal recovery but does lead indirectly to personal recovery by reducing the effects of internalized stigma.

Other research groups have described a self-concept and the continuity of community life for persons with schizophrenia [39, 40]. They reported that persons with schizophrenia have difficulty accepting their own disability and find it difficult for others to understand their experiences and behaviors. Negative symptoms are among the symptoms of schizophrenia, and the characteristics of the illness often inhibit the individual's independence. It may thus be that a vicious cycle of 'I can't do it anyway' to 'I won't do it,' and 'I won't do it' to 'I can't do it,' occurs, and the process of personal recovery is inhibited. In a study of factors that reduce internalized stigma among persons with schizophrenia [41], it was observed that the subjects with mild internalized stigma recognized that 'even if they are accepted as indi-

viduals, the prejudice of the world will remain strong.' However, they were able to have a successful experience, which was described as an 'experience of being accepted as a person with mental disability and being able to work in society' by 'me and my family who understand and accept mental disability as an individuality regardless of what people around me think' and 'positive and attentive support (information provision) that is not intrusive' outside of the family. This is a positive experience that enhances persons with schizophrenia individuals' sense of self-efficacy and leads to a positive perception of themselves.

Shimamoto & Hiroshima [41] do not directly refer to a sense of coherence; but in an interpretation of their findings from the perspective of a sense of coherence, it could be said that persons with schizophrenia 'comprehend' that prejudice due to their illness would not change, and that their illness is 'managed' with support from family and others, that they are accepted, and that they gain 'meaningfulness' by working in society.

***Implications for practice.*** There are at least two possible approaches to nursing practice aiming to promote the personal recovery of persons with schizophrenia living in the community: internalized stigma reduction and sense of coherence intervention. The approach to reducing internalized stigma, which is closely related to public stigma, requires long-term and multifaceted support. A phenomenological study of internalized stigma in persons with schizophrenia showed that these individuals experienced 'origin (external and internalized experience of stigma)' followed by 'suffering (alienation from others and negative internal feelings),' which led to 'coping (acceptance and change of mind);' these three processes influenced each other [42]. The study's authors indicated that among their subjects, internalized stigma was formed in the context of social connections, and then the subjects found ways to cope with it.

Several intervention studies on reducing internalized stigma in persons with schizophrenia have also been reported. Group approaches with narrative enhancement and cognitive therapy [43] and programs consisting of psychoeducation, cognitive behavioral therapy, and social skills training [44], which work on the individual's cognition, have been reported to be effective. A Japanese study on metacognitive training in psychiatric daycare reported no significant difference in results between persons with schizophrenia and those without schizophrenia [45]. Psychiatric daycare often has a variety of programs planned throughout the day, and this may be made more effective by conducting efforts to intervene in the cognition of persons with schizophrenia.

Many of the participants in our present investigation had been using psychiatric daycare on a continuous and long-term basis. The effectiveness of a continuous use of psychiatric daycare was also reported by Cechnicki & Bielańska [46] and Kao *et al.* [47]. A study of the process of nurses' support for the independence of middle-aged and older users of psychiatric daycare [48] demonstrated that psychiatric daycare nurses recognized that users had difficulty having motivation to transition to other institutions, and they observed the usefulness of attending psychiatric daycare as a place to stay. Our present results support these findings, as our analyses revealed that a sense of belonging was related to each variable. In this context, having opportunities to share one's own experiences in a group (such as talking about one's own experiences in a small group or discussing problems in daily life with each other) is also considered to be an activity that encourages independence. It was reported that 'those who answered that they had gained something from their illness experience' and 'those who had experienced peer support' had significantly higher recovery levels than 'those who had not' [49]. The self-efficacy of the interpersonal behavior of persons with schizophrenia who use psychiatric daycare was also reported to contribute to interpersonal behavior and neurocognitive functioning [50]. Peer support involvement that promotes interpersonal interactions may also be helpful in reducing internalized stigma, resulting in personal recovery.

Misconceptions of mental illness continue to be widespread, and deep-rooted prejudice and discrimination regarding schizophrenia remain. There have been reports of medical personnel undermining the rights of mentally ill patients [51, 52], suggesting that there is prejudice and discrimination from medical personnel too. Among persons with schizophrenia, the age at onset and the length of hospitalization were observed to be predictors of perceived discrimination, with the length of hospitalization contributing most significantly [53]. This may be a detrimental effect of long-term hospitalization in psychiatric facilities in Japan. Persons with schizophrenia often use the same psychiatric daycare facility for a long period of time, and their relationship with their supporters is frequently longstanding;

although this has the advantage of providing a good grasp of the persons' progress and a stable relationship with the persons, there is concern that this may have the disadvantage of fixing the ways that persons interact with caregivers. It is therefore necessary for medical personnel and supporters to have opportunities to review their own provision of care on a regular basis.

There have been several reports on approaches to a sense of coherence among individuals with schizophrenia. A program has been described that mixes philosophical dialogue with salutogenic group talks for long-term hospitalized patients with schizophrenia. A total of eight 30-minut salutogenic group talks held once a week provided participants with an opportunity to become aware of their own thinking and to change their meaning-making of their familiar environment through dialogue. Participants were highly satisfied and had a sense of positive change after the intervention [54]. Similarly, repeated interviews based on salutogenic theory have been reported to improve patients' sense of coherence [55], suggesting the possible effectiveness of intentional interventions on sense of coherence in persons with schizophrenia. Our present findings suggest that the approach to a sense of coherence among individuals with schizophrenia living in the community contributes to personal recovery through internalized stigma, which may encourage a more active focus on the effectiveness of interventions based on the sense of coherence concept.

In summary, the results of this study suggest that nurses and supporters should support persons with schizophrenia living in the community to engage in opportunities to reflect on their own experiences through practical activities. Moreover, caregivers should enable persons with schizophrenia to share their experiences within the group and to reflect on their own support. This may lead to a reduction of internalized stigma and an improvement in persons with schizophrenia's sense of coherence, which in turn promotes personal recovery.

***Limitations.*** There are three limitations to this study. We were unable to adequately examine the background factors of the subjects. The novel coronavirus pandemic had not yet subsided during the study period, and we thus refrained from entering each facility and instead conducted the survey by mail; it was therefore not possible for the researchers to provide explanations to the subjects or to directly confirm their situation and condition. In addition, since this study was conducted using a self-administered questionnaire, no items were included to confirm details, such as drugs used, as it was considered difficult for the subjects to self-report their condition. Moreover, in the selection of subjects, we did not assess the severity of illness or psychiatric symptoms but left the selection to each facility based on their own selection criteria, which may have resulted in a wide range of conditions among facilities. In future studies, it is necessary to conduct more detailed studies by adding evaluations based on indicators such as the severity of the subjects' illness. In addition, the number of collaborating institutions among the target institutions was small, and the numbers of subjects varied from institution to institution. There is a possibility that bias may have occurred due to the status of the collaborating facilities.

Second, the model in this study and its goodness of fit require further investigation. A sense of coherence, which is the power of the individual, is expected to be affected by illness and medical conditions such as cognitive dysfunction due to schizophrenia. Moreover, because personal recovery is a concept that includes diverse aspects, in this study, the assessment of personal recovery was based on the QPR and SWNS. In the structural equation modeling applied herein, a sense of coherence had an indirect effect on personal recovery; however, the explanatory rate of personal recovery was similar in the two-concept model of internalized stigma and personal recovery and in the three-concept model with the addition of sense of coherence. Further studies are needed to assess the construction of personal recovery and the validity of the model. As our respondents' previous experiences and lives differ greatly, the ways that they perceived internalized stigma, sense of coherence, and personal recovery are also likely to have differed. Further qualitative research is necessary to clarify the precise experiences of the subjects involved.

Third, the regions and institutions where this study was conducted were limited to psychiatric daycare facilities in Japan's Chugoku and Shikoku regions. The ways in which societies approach individuals with mental disorders in urban versus rural areas and the accompanying manners in which those individuals face their disorders may vary. In addition, although we surveyed psychiatric daycare facilities that were affiliated with private psychiatric hospitals, sample bias may exist because some other types of hospitals and facilities have

psychiatric daycare facilities. The employment of persons with mental disabilities has been expanding in recent years, and it is possible that they are living in more socially relevant ways. Further surveys that expand the regions and facility types are needed.

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