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Citation	長崎大学医療技術短期大学部紀要 = Bulletin of the School of Allied Medical Sciences, Nagasaki University. 1999, 12, p.19-24
Issue Date	1999-03-02
URL	<a href="http://hdl.handle.net/10069/18282">http://hdl.handle.net/10069/18282</a>
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# Behavioral Features of Schizophrenic Patients in Day Care Activities — Assessment Indexes from Seating Behavior as Indexes —

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**Abstract** We examined how to deal with schizophrenic patients in a psychiatric day care program (DC) by analyzing some features of their behavior. The subjects of the study were 15 schizophrenic patients who were attending the DC, and we divided the subjects into two groups: patients who had been attending the DC for less than two years (a short-term attending group) and those attending for more than two years (a long-term attending group). As indexes of behavioral features, we used seat occupation assessment and distance from occupational therapists. Social life ability was evaluated according to the Life Assessment Scale for the Mentally Ill. The results were that the patients in the long-term attending group had larger territoriality, but lower social life ability and weaker affinity to the occupational therapist compared to those in the short-term attending group. These findings suggested that in DC activities we should not only focus on interpersonal skills training, but also review the treatment structure and treatment contract regularly.

Bull. Sch. Allied Med. Sci., Nagasaki Univ. 12: 19-24, 1998

**Key Words** : Schizophrenia, Day Care, Seating Behavior, Interpersonal Distance, Territorial Behavior

## Introduction

Fukazawa et al.<sup>1)</sup>, who had analyzed the seating behavioral manners of schizophrenic patients during music therapies using an ethological method, compared the results to the results of a behavioral investigation of medical students conducted by Hirao et al.<sup>2)</sup> and explained the behavioral features of schizophrenic patients as follows: 1) there was a main group at one side of the room and several small groups with a few seats between them; 2) the patients in the main group moved around more; 3) those in the small groups stayed in the same place more, moved around less and only moved within their group. Hiruta<sup>3)</sup> described the recognition and behavioral disability as the basic disability of schizophrenia through the observation of therapy scenes as follows: 1) patients get confused when facing various tasks at one time, 2) they are passive and show limited interest or attention, 3) they have difficulty in grasping the situation overall and cannot make arrangements by themselves, 4) they are inflexible and stick fast to rules and 5) they cannot change viewpoint.

We used a similar approach. We examined the behavioral features of schizophrenic patients in the hospital using two indexes. One index was a 'seat occupation rate' which shows the voluntary seating behavior of the schizophrenic patients and the other is a 'distance to a therapist' which indicates the distance from a patient to an occupational therapist. In this study, we focused on the seating behavioral at the site of the outpatient day care (DC) and examined the behavioral features of schizophrenic patients using the two indexes.

## Method

### 1. Subjects

The subjects of the study were 15 patients who had been diagnosed as having schizophrenia according to ICD-10<sup>7)</sup> and were attending the DC of The Department of Neuropsychiatry of Nagasaki University School of Medicine. As shown in Table 1, we divided the subjects into two groups, a 'short-term attending group (n=8)' (Group S), patients who have been attending the DC for less than two years, and a 'long-term attending group

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**Table 1.** Attributes of Schizophrenic patients

	Short-term DC attending group (Group S; n=8)		Long-term DC attending group (Group L; n=7)	
	mean	s. d.	mean	s. d.
Age	30.9	7.8	27.3	5.5
Duration from onset (month)	85.4	69.0	110.7	55.8
DC attendance period (month)	10.3	7.6	**	40.7 16.7

\*\* P<0.01 (Mann-Whitney test)

(n=7)' (Group L), those who have been attending the DC for more than two years. The average age was 30.9±7.8 years for Group S and 27.3±5.5 years for Group L. The average duration from onset was 85.4±69.0 months for Group S and 110.7±55.8 months for Group L. The average duration of DC attendance was 10.3±7.6 months for Group S and 40.7±16.7 months for Group L. We conducted the investigation during the DC on seven Fridays from November to December in 1997.

**2. DC programs**

The DC is held three times a week, and the contents of the DC program are changed monthly. They include 'creative activity (7 times/month)' such as handicraft, 'cooking (3 times/month)', 'sports activity (8 times/month)' involving light physical exercises, 'hobby activity (2 times/month)' such as music and penmanship, 'outside activities (4 times/month)' using social resources for recreation and 'meeting (1 time/month)' to exchange opinions on DC activities and management. During the seven weeks we conducted the investigation, patients had creative activities, Social Skills Training (SST), meetings, penmanship and free activity time (in which they can choose activities they want to do).

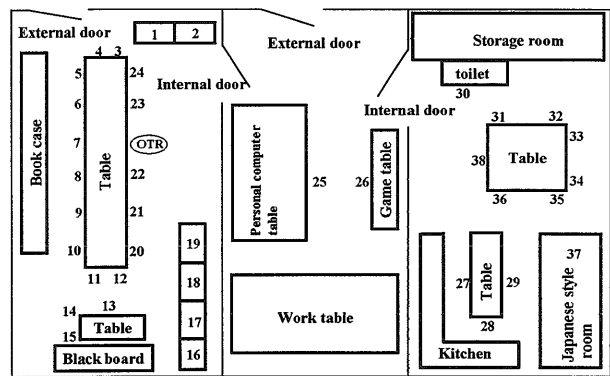
The total DC staff includes nine psychiatrists, two occupational therapists, one nurse and three volunteers, and during the investigation period, the DC was conducted by two psychiatrists, one occupational therapist and three volunteers.

**3. Social life ability and indexes of behavioral features**

The social life ability was assessed using the Life Assessment Scale for the Mentally Ill (LASMI)<sup>6)</sup>. LASMI includes five sub-scales, 'D: daily life', 'I:

interpersonal relations', 'W: work', 'E: endurance and stability' and 'R: self-recognition', and 40 items, and the rating is given on a 5-point scale, from 'Good (0)' to 'Severe (4)'.

The seating behavior of the subjects were investigated by recording the location of the seat where each subject was sitting in the DC room six times, every hour from 10:00 am to 3:00pm. The number of subjects who were in the room at the time of each record was from 5 to 12. As shown in Figure 1, the number of seats which the subjects could choose from in the DC room was 38, which was sufficient for the number of the subjects. Next, for the indexes of seating behavior, as Inadomi et al.<sup>5)</sup> did, we used a 'seat occupation rate' and a 'distance from a therapist'. The 'seat occupation rate' was obtained by dividing the number of records of a subject's seating position by the number of different seats which he/she chose. Thus, the greater the number of seats he/she chose, the lower the rate. The degree of affinity to his/her occupational therapist was shown in quantity by measuring the distance to a therapist (m).



**Figure 1.** Seat arrangements in the DC room

**4. Statistical tests**

The statistical tests used in this study are the Mann Whiney test, Welch test and the Spearman's correlation coefficient.

**Results**

**1. Seat occupation rate**

As shown in Figure 2, the seat occupation rate for Group S was 1.35 and that for Group L was 1.12, and it was significantly higher in Group S (p<0.01).

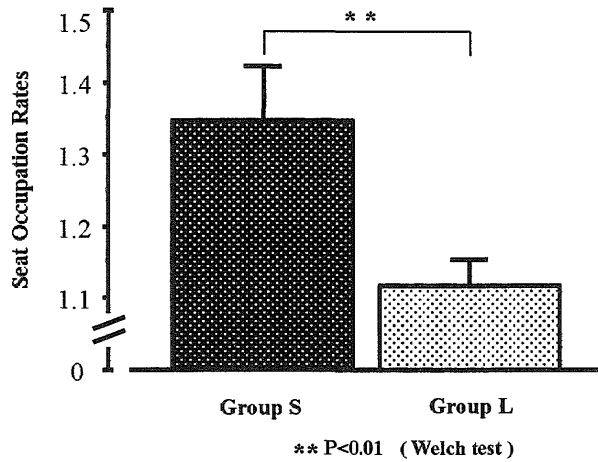


Figure 2. Comparison of Seat Occupation Rates between Group S and Group L

**2. Correlation between seat occupation rates and LASMI**

As shown in Table 2, no significant correlation was seen between seat occupation rates and any of the LASMI sub-scales.

Table 2. Correlation between Seat Occupation Rates and LASMI in the two groups

LASMI sub-scales	Group S	Group L
L-D	0.14	0.11
L-I	0.15	0.10
L-W	0.09	0.21
L-E	0.12	0.18
L-R	0.09	0.20
L-T	0.15	0.14

L-D = Daily living; L-I = Interpersonal relations; L-W = Work; L-E = Endurance and Stability; L-R = self Recognition; L-T = Total score (Spearman)

**3. Distance to an occupational therapist**

As shown in Figure 3, the distance to an

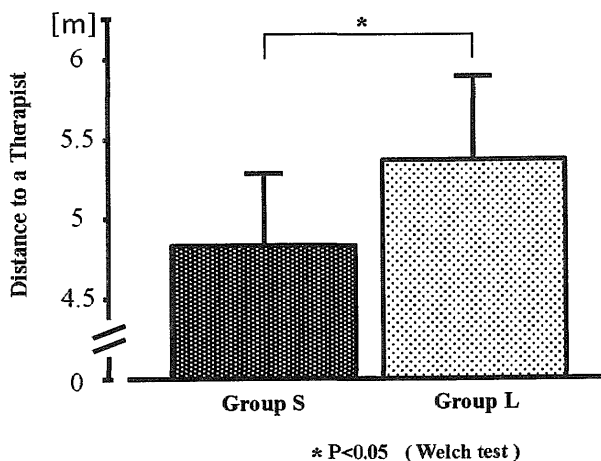


Figure 3. Comparison of Distance to a Therapist between Group S and Group L

occupational therapist was significantly larger for Group L (5.4±5.5 m) than for Group S (4.5±5.4 m) (p<0.05).

**4. Correlation between the distance to an occupational therapist and LASMI**

Table 3 shows the correlation between the distance to an occupational therapist (OT) and LASMI. In the patients of Group L, significant positive correlation was seen between the distance to an OT and LASMI sub-scales, 'D: daily life', 'I: interpersonal relations', 'endurance and stability', and 'T: LASMI total score' (rs=0.33; p<0.01, rs=0.34; p<0.001, rs=0.33; p<0.05, rs=0.29; p<0.01 respectively). No significant correlation was seen between the distance to an OT and any of the sub-scales of LASMI in Group S.

Table 3. Correlation between Distance to a Therapist and LASMI score in Group L and Group S

LASMI sub-scale	Group S	Group L
L-D	0.15	0.33**
L-I	0.90	0.34***
L-W	0.18	0.20
L-E	0.08	0.33*
L-R	0.14	0.17
L-T	0.14	0.29**

L-D = Daily living; L-I = Interpersonal relations; L-W = Work; L-E = Endurance and Stability; L-R = self Recognition; L-T = Total score  
\* P<0.05; \*\*P<0.01; \*\*\*P<0.001(Spearman)

**5. Comparison of LASMI between the two groups**

As shown in Table 4, in the LASMI sub-scales, 'D: daily life', 'I: interpersonal relations', 'W: work', 'E: endurance and stability' and 'T: LASMI total score', scores were significantly higher in Group L than Group S (p<0.01, p<0.01, p<0.001, p<0.001, p<0.01 respectively).

Table 4. Comparison of LASMI scores between Group L and Group S

LASMI sub-scale	Group S ( n=8)		Group L ( n=7)	
	mean	s.d.	mean	s.d.
L-D	14.1	11.6	** 18.0	9.7
L-I	16.2	9.2	** 19.5	7.9
L-W	16.8	8.6	*** 20.8	7.2
L-E	6.1	1.2	*** 5.0	1.4
L-R	5.3	2.4	5.6	2.3
L-T	58.5	31.5	** 69.0	26.2

L-D = Daily living; L-I = Interpersonal relations; L-W = Work; L-E = Endurance and Stability; L-R = self Recognition; L-T = Total score  
\*\*P<0.01; \*\*\*P<0.001( Mann-Whitney test )

## Discussion

In the study, we used 'a seat occupation rate' and 'a distance to an occupational therapist' as indexes to analyze the behavioral features of schizophrenic patients based on the assumption that these indexes reflect the interpersonal relations of the patients and the adaptability to their environment.

Regarding the seat occupation rate, the patients in Group L tried to sit on the same seat repeatedly less than those in Group S, and that is, they were more likely to choose a seat freely and move around the DC room. All people have some safe territory in which they can spend time freely without being interrupted by others, which is defined as 'Territoriality' in ethology<sup>4)</sup>. People with extremely narrow territoriality tend to have limited interpersonal communication and social activities, while people with wide territoriality can have an active life. Ichihashi<sup>4)</sup> remarked that the territoriality of schizophrenic patients is narrow, but the results of our study indicate that when attending DC for a long period of time, the range of territoriality becomes wider in the DC room. However, no significant correlation was seen between seat occupation rates and the assessment of social life ability, LASMI, in either group. This might indicate that the activities in the DC take place in space which is protected by therapists and widened territoriality there does not relate to the progress in social life ability.

Meanwhile, patients who were attending DC for a long period of time tended to keep longer distance from a therapist. In our observation in the DC room, patients new to the DC tended to stay rather close to a therapist to become adapted to the new interpersonal atmosphere. Keeping a longer distance to an occupational therapist could indicate either that patients have gotten used to the space and their affinity to occupational therapists has gotten weaker, or that they were wandering about seeking a place because they could not rely on their therapists. In the comparison of LASMI scores between the two groups, the patients of Group L were significantly lower in the following sub-groups, daily life, interpersonal relations, work and endurance and lower in the following sub-groups, daily life, interpersonal relations, work and endurance and stability than those in Group S. Looking at the correlation between the distance to an OT and LASMI scores in Group L, a significant

positive correlation was seen in the following items, 'independence in daily life', 'technique of interpersonal dealing', 'stability in the course of daily life' and 'overall evaluation'. This indicates that patients who kept longer distance from their OT in Group L were having difficulty in daily life, worsening in dealing with others, showed instability in leading daily life and had a lower overall social life ability. Such correlation was not seen in Group S. Therefore, although patients attending DC for a long period of time have wider territoriality than those for a short period of time, it is necessary to establish some therapy relationship in which patients feel secure in expressing their affinity to their therapists.

Generally, the purpose of DC training is considered to be an improvement of interpersonal relations techniques<sup>8)</sup>. However, in our study, we observed a few long-term DC attenders who became clever at disguising non-adapting behavior, escaping a situation and were convincing in interpersonal negotiation when facing a difficult task. This suggests that it is necessary to reconsider the structure of DC therapy overall regularly, besides focusing on the improvement of interpersonal relations. That is, we have to reestablish a therapy contract and the structure of DC programs as well as establishing various situations for training interpersonal relations in DC activities. At the same time, it seems that widening of territoriality and keeping some distance from a therapist might be related to withdrawal and fixation which are characteristic to schizophrenic patients, so it will be important to support patients in learning how to make territoriality or to keep a distance from a therapist through reconsidering therapy structure, as well as encouraging them to have interpersonal communication by examining the degree of withdrawal and fixation of each patient.

Finally, the duration of the study was very short, for two months, and we could not show the relationship between behavioral features and the evaluation of psychiatric symptoms or the dosage of medication. However, through the study, it was confirmed that two indexes, the seat occupation rate and the distance from a therapist, were convenient for measurement and they are useful as assessment indexes. In the future, we will examine the relationship between the recovery process of schizophrenia and seating behavior.

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## 精神分裂病患者のデイケア活動中における行動特性 — 着席行動を指標にして —

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**要 旨** 精神分裂病患者の行動特性を分析して、精神科デイ・ケア (DC) における精神分裂病患者への関わり方を検討した。対象は DC に通所中の精神分裂病患者15名で、DC通所期間が2年未満の短期通所群と2年以上の長期通所群に区分して検討した。行動特性の指標は、座席占有度と作業療法士 (OTR) からの距離を用いた。そして、社会生活能力は精神障害者社会生活評価尺度を用い評価した。その結果、DC 長期通所群は短期通所群に比べ、ナワバリは広いが生活能力は劣り、OTR への対人的な親和性も弱いことが示唆された。このことから、DC の活動は対人関係技能の訓練に焦点をおくだけでなく、治療構造、及び治療契約の定期的な見直しも必要であると考えられた。

長崎大医療技短大紀 12: 19-24, 1998