

Psychiatric Service and Social Adjustment of Schizophrenic Patients on Offshore Islands

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Abstract We clinically evaluated continuous treatment of 100 patients diagnosed as having schizophrenia according to DSM-III-R for four years from April 1988 to April 1992. During the four-year investigation period, 53 of the patients (Group A) received treatment by visiting as outpatients, while the remaining 47 patients (Group B) required hospitalization. In Group B compared to Group A, the level of education was significantly higher, but the employment rate was lower and the rate of receiving social welfare benefits was higher. These differences were stronger for male patients. Psychiatric symptoms and social adjustment were poorer in the patients of Group B than those of Group A. Prior to April 1988, 80% of the 100 patients had had the experience of hospitalization, but in the investigation period the rate of hospitalization decreased to 47%. Examining reasons for hospitalization in Group B, positive attitudes towards for the use of psychiatric institutions, such as hospitalization, together with family members' strong hopes for successful treatment and patients' own desire for short-term hospitalization, were seen. We also discuss the clinical advantages of on-visit rehabilitation by a group of a psychiatrist, a occupational therapist and a community nurse on offshore islands where the public transportation system is not very adequate.

Bull. Sch. Allied Med. Sci., Nagasaki Univ. 9: 1-8, 1995

Key Words : Schizophrenia, Social outcome, Reason for admission, On-visit rehabilitation, Offshore island

INTRODUCTION

Tsushima, Nagasaki, is a long, narrow island extending 85km from north to south and 18km from east to west which is located 50km southeast of the Korean Peninsula (Figure 1). The island is the third largest in Japan, but 88% of the land is mountains, 3% is land under cultivation and only 1% is for housing. The population was 48,875 in 1985, but it had decreased to 46,064 by 1990. This decrease of the population is related to the rate of high school graduates' moving out of the island, which is about 86%.

On Tsushima, 200m to 300m high mountains come close to the shoreline, and small villages with a population of less than 300 people are dotted on the narrow flat land along the beach. The average number of family members in each household is about three. One-third of employment is in farming and fishing and local industries do not offer much employment, so the rate of people on social welfare

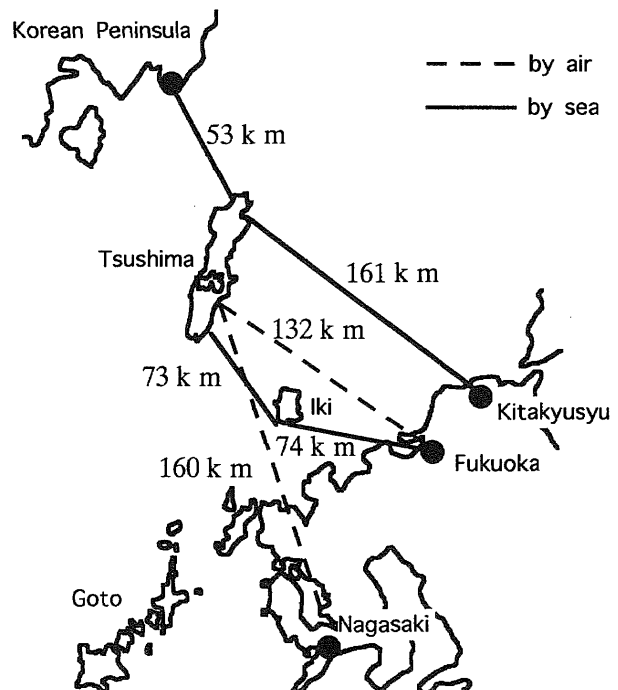


Fig. 1 Map of Tsushima

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benefits is 2.2%, quite high for Japan.

On Tsushima, psychiatric care services started with an annual traveling clinic in 1972, but most of the psychiatric care depended on medical institutions outside Tsushima. In 1979, psychiatric day-care started at Izuhara Public Health Center on the island, traveling clinical services increased to once a month in 1980, twice a month in 1981 and four times a month in 1982, and in 1984 an outpatient clinic started with a full-time psychiatrist¹⁾. In April, 1988, a psychiatric ward with 50 beds was established at Tsushima Izuhara Hospital and two psychiatrists came to work full-time. With this, the psychiatric care system on Tsushima was established. Taking advantage of having one public health center, one welfare office and one psychiatric institution looking after one region, the service started aiming at comprehensive regional psychiatric care, giving importance to crisis intervention²⁾.

This paper focuses on schizophrenic patients receiving continuous treatment from April 1988, and discussed the changes in psychiatric care on Tsushima after the establishment of the psychiatric ward and problems to be considered in the future.

SUBJECTS AND METHODS

The original subjects of the study were 115 patients who had been diagnosed as having schizophrenia according to DSM-III-R³⁾ and were visiting as outpatients on April 1, 1988 when the ward was established. Twelve patients who left the island during the investigation period, and three who died, were excluded from the analysis, leaving a final total of 100 patients.

We collected the following information by following the subjects continuously during the investigation period from April 1, 1988 until April 1, 1992. 1) Background factors (evaluation as of April 1, 1988): 1. age, 2. sex, 3. education, 4. marital status, 5. occupation, 6. source of medical payment and 7. household structure. 2) Psychiatric symptoms (evaluated at the start and the end of the investigation period)⁴⁾. 3) Clinical features: 1. age of onset, 2. years after the onset, 3. history of hospitalization, 4. index of hospitalization duration, the ratio of the number of days in the hospital to the total observation period, given as a percentage, 5. the duration of visits as an outpatient from the last discharge, 6. sub-classification of schizophrenia³⁾. 4) Clinical course: classified into 6 types using

Ciampi et al.'s Classification⁵⁾. 5) Social outcome^{6,7)}: at the beginning and the end of the investigation period, evaluated on 5 levels according to a certain definition. Score 1; very good adjustment, Score 2; Good adjustment, Score 3; Moderate adjustment, Score 4; Poor adjustment and Score 5; Very poor adjustment. 6) Classification of reasons for hospitalization in hospitalized cases during the investigation period.

We compared the above information between the patients who did not require hospitalization (Group A) and those who did (Group B) during the investigation period. The X² Test, Fisher's Direct Test and Wilcoxon's Test were used for analysis.

RESULTS

Fifty-three patients (25 males and 28 females) attended the outpatient clinic, but did not require hospitalization during the investigation period, while 47 patients (26 males and 21 females) required hospitalization.

1) Comparison of background factors (Table 1)

The average ages were 42.0 years in Group A (male:38.2 years, female:45.4 years) and 38.2 years in Group B (male:36.9 years, female:39.8 years),

Table 1 Back ground factors

	Group A	Group B
	(N: 53)	(N: 47)
Average age	42.0	38.2
(Male, Female)	(38.2, 45.4*)	(36.9, 39.8)
(Range)	(21~67)	(18~67)
Sex		
Male	25 (47.2%)	26 (55.3%)
Female	28 (52.8%)	21 (44.7%)
Education level		
Secondary school	39 (73.6%)	24 (51.1%)
High school	9 (17.0%)	19 (40.4%)
College and above	1 (1.9%)	3 (6.4%)**
Others	4 (7.5%)	1 (2.1%)
Marital status		
Never married	25 (47.2%)	25 (53.2%)
Married	13 (24.5%)	15 (31.9%)
Separated or divorced	15 (28.3%)	7 (14.9%)
Occupation		
Fishermen	4 (7.5%)	0
Laborers	2 (3.8%)	0
Office workers	0	2 (4.3%)
Service workers	2 (3.8%)	0
Professionals	2 (3.8%)	0
Housewives	6 (11.3%)	7 (14.9%)
Housekeepers	9 (17.0%)	7 (14.9%)
Unemployed	28 (52.8%)	31 (66.0%)
[Male	17/25 (68.0%)	23/26 (88.5%)†]
Medical payment		
National health insurance	35 (66.0%)	21 (44.7%)
Social insurance	8 (15.1%)	8 (17.0%)
Social welfare	10 (18.9%)	18 (38.3%)†
[Male	3/25 (12.0%)	12/26 (46.2%)†]
Household structure		
Living alone	12 (22.6%)	8 (17.0%)
Nuclear family	31 (58.5%)	30 (63.8%)
Others	10 (18.9%)	9 (19.1%)

*p<0.1 **p<0.01

and no differences were seen by sex between the two groups, either. However, in Group A there was significant difference between the sexes and male patients were younger ($P<0.05$).

Looking at education level, 18.9% of the patients in Group A were high school or college graduates, while 46.8% of those in Group B were, so the education level was significantly higher in Group B ($P<0.01$). In comparison of marital status, in both groups 50% of the patients were not married. There were more married people in Group B and more divorced people in Group A, but no significant differences were seen between the two groups.

In Group A, 52.8% of the patients were unemployed, while 66.0% of them were unemployed in Group B, but the difference was not significant. Comparing by sex, 17 males were unemployed in Group A, while 23 males were unemployed in Group B, and unemployment among males in Group B was higher than for males in Group A ($P<0.1$).

Regarding medical payment, most of the patients had national health insurance followed by people on social welfare. There were more people on social welfare in Group B than Group A ($P<0.1$). In Group A, three males were on social welfare, while in Group B 12 males were ($P<0.05$).

Regarding household structure, 22.6% of the patients in Group A and 17.0% in Group B were living alone, with no significant differences between the two groups.

2) Clinical features (Table 2) (Table 3)

The average age of onset was 28.5 years (male: 25.3 years, female: 31.4 years) in Group A and 26.2 years (male: 25.9 years, female: 26.3 years) in Group B. In Group A, onset age was significantly younger in males than females ($P<0.05$), while in Group B, there was no significant difference between the sexes.

In both groups, about 60% of the patients had chronic schizophrenia with a course of illness greater than ten years since onset, and no differences were seen in years after onset between the two groups. In Group A, there were more patients visiting the outpatient clinic for over 10 years after the last hospitalization than in Group B ($P<0.1$).

Looking at the sub-classification of schizophrenia, in Group A, there were more patients with paranoid type than with disorganized type, while in Group B, there were more patients with disorganized type

Table 2 Clinical features

	Group A (N: 53)	Group B (N: 47)
Age of onset	28.5	26.2
(Male, Female)	(25.3, 31.4*)	(25.9, 26.3)
Years after onset		
< 1 year	3 (5.7%)	2 (4.3%)
< 2 years	2 (3.8%)	0
< 3 years	1 (1.9%)	1 (2.1%)
< 5 years	5 (9.4%)	6 (12.8%)
<10 years	8 (15.1%)	11 (23.4%)
10 years ≤	34 (64.2%)	27 (57.4%)
History of hospitalization (before 1988)		
No	11 (20.8%)	6 (12.8%)
1	14 (26.4%)	13 (27.7%)
2	9 (17.0%)	7 (14.9%)
More than 3	19 (35.8%)	21 (44.7%)
The duration from the last discharge		
< 1 year	8 (15.1%)	11 (23.4%)
< 2 years	4 (7.5%)	4 (8.5%)
< 3 years	3 (5.7%)	4 (8.5%)
< 5 years	11 (20.8%)	9 (19.1%)
<10 years	15 (28.3%)	15 (31.9%)
10 years ≤	12 (22.6%)	4 (8.5%)*
Sub-classification of schizophrenia (DSM-III R)		
Catatonic type	0	1 (2.1%)
Disorganized type	23 (43.4%)	29 (61.7%)
Paranoid type	30 (56.6%)	17 (36.2%)*

* $p<0.1$ * $p<0.05$

Table 3 Index of hospitalization duration

Group A		Group B		Group (A+B)	
~1988.4.1	1988.4.1~	~1988.4.1	1988.4.1~	~1988.4.1	1988.4.1~
16.4±18.66	0	22.6±25.62	22.5±23.51	19.3±22.31	10.6±19.61***

*** $p<0.001$

than with paranoid type. There were more patients with paranoid type in Group A than in Group B ($P<0.1$).

Twenty-one percent of the patients in Group A and 13% of those in Group B had no history of hospitalization before April 1988. Looking at the indices of hospitalization duration which indicate the ratio of the number of days in hospital in the total observation period, the index during the investigation period in Group A was naturally zero, but the index before April 1988 was 16.4. In Group B, the index during the investigation period was 16.4. In Group B, the index during the investigation period was 22.5 and before April 1988 was almost the same at 22.6. The indices for the male patients in Group B were 24.9 before April 1988 and 25.8 during the investigation period, showing a slight rise. The indices for the female patients in Group B were 19.7 and 18.4, respectively, with a slight fall during the investigation period. However, no significant differences were seen by sex in Group B. Looking at the overall indices for both groups, the index before April 1988 was 19.3 and during the investigation period was 10.6, which shows a

significant fall ($P < 0.001$).

3) Clinical course since onset (Figure 2)

There were no significant differences between the two groups comparing the clinical course by clinical course type, individually Type I to Type VI, or comparing by undulating course (Group I and Group IV) and by simple course (Groups II, III, V and VI).

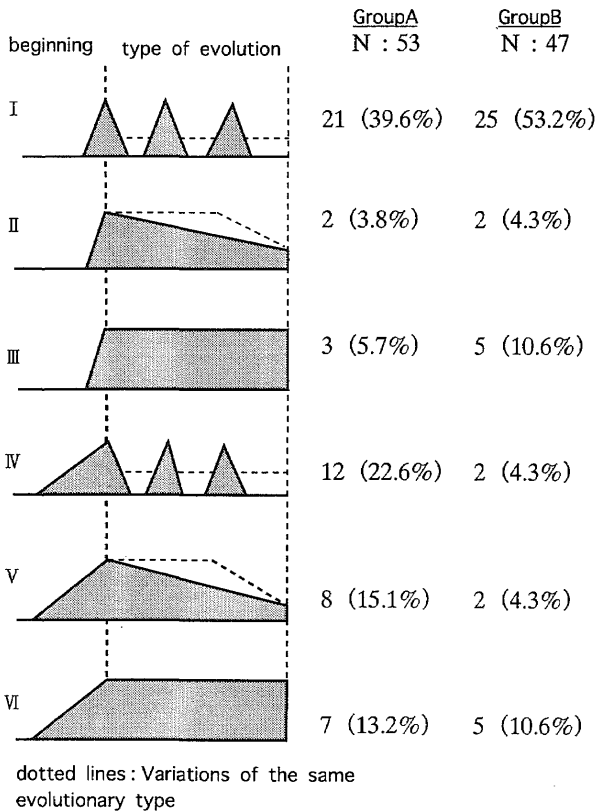


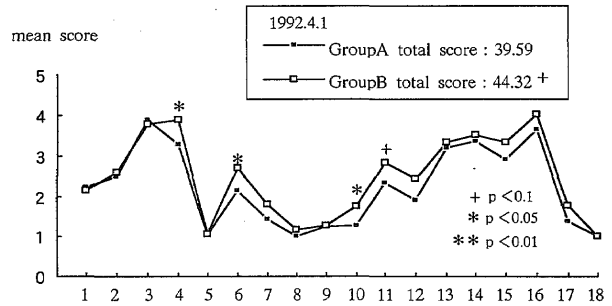
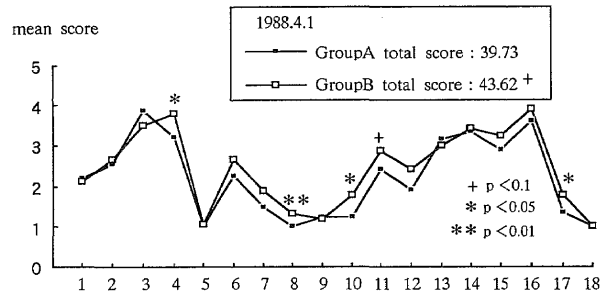
Fig. 2 Clinical course

4) Clinical symptoms (Figure 3)

We evaluated symptoms using BPRS at the beginning and at the end of the investigation period. At the beginning, conceptual disorganization, grandiosity, hostility and excitement were significantly higher ($P < 0.05$, $P < 0.01$, $P < 0.05$ and $P < 0.05$ respectively) and suspiciousness was rather higher ($P < 0.1$) in Group B than in Group A. The BPRS total score was also higher in Group B than in Group A ($P < 0.1$). At the end, conceptual disorganization, tension and hostility were significantly higher ($P < 0.05$) and suspiciousness was also higher ($P < 0.1$) in Group B than in Group A. The BPRS total score was also higher in Group B ($P < 0.1$).

5) Reasons for hospitalization during the investigation period in Group B

1. Hospitalization due to family members'



1. Somatic concern, 2. anxiety, 3. emotional withdrawal, 4. conceptual disorganization, 5. guilt feelings, 6. tension, 7. mannerisms and posturing, 8. grandiosity, 9. depressive mood, 10. hostility, 11. suspiciousness, 12. hallucinatory behavior, 13. motor retardation, 14. uncooperativeness, 15. unusual thought content, 16. blunted affect, 17. excitement, 18. disorientation.

Fig. 3 Brief Psychiatric Rating Scale

difficulties and worries, such as 'Behavior and/or appearance of the patient became weird' and 'Possibility of self-injury or harm to others was suspected by the patient's behavior and speech': 24.7%. 2. Consented hospitalization due to the patient's desire for short-term hospitalization, such as 'I want to rest a while,' and 'I want to be away from home a while': 24.7%. 3. Hospitalization due to the family members request, hoping for the improvement of the patient's condition: 13.5%. 4. Hospitalization due to the suggestion of a psychiatrist because of worsening of the patient's condition such as confusion: 13.5%. Hospitalization due to illegal behavior: 3.4%. 6. Hospitalization due to changes of the family situations: 2.2%.

6) Social outcome (Table 4)

Table 4 Social Outcome

	1988. 4. 1		1992. 4. 1	
	Group A (N : 53)	Group B (N : 47)	Group A (N : 53)	Group B (N : 47)
very good adjustment	2 (3.8%)	1 (2.1%)	4 (7.5%)	0
good adjustment	15 (28.3%)	5 (10.6%)	12 (22.6%)	6 (12.8%)
moderate adjustment	14 (26.4%)	6 (34.0%)	16 (30.2%)	18 (34.0%)
poor adjustment	16 (30.2%)	4 (51.1%)	14 (26.4%)	18 (38.3%)
very poor adjustment	6 (11.3%)	1 (2.1%)	7 (13.2%)	7 (14.9%)
average adjustment score	3.17	3.40*	3.19	3.55*

* $P < 0.1$

Adjustment scores were 3.17 in Group A and 3.40 in Group B at the beginning, and they were 3.19 in Group A and 3.55 in Group B at the end of the investigation period. In both evaluation times, scores were better in Group A ($P < 0.1$).

DISCUSSION

The advantages of conducting this study on Tsushima where an administrative division completely corresponds to a medical zone are: it is easy to understand the condition of social adjustment of patients who had not yet visited the hospital, to offer help to patients discontinuing treatment, and to give a patient consistent treatment, and have ongoing clinical evaluation by the same observer^{1,2,8)}.

Although the education level of the patients who required hospitalization during the investigation period (Group B) was significantly higher than those who did not (Group A), the employment rate of Group B was lower than that of Group A and the rate of dependence on social welfare of Group B was a marginal higher than that of Group A. Such features were seen markedly in male patients. Considering the fact that most high school graduates leave the island, where there are only a small number of local industries, it is difficult for schizophrenic patients with higher education, especially for male, to recover their social adjustment in the form of finding an occupation. Clinically, the psychiatric symptoms and social adjustment of the patients in Group B were worse than those in Group A at the beginning of the investigation period. It is assumed that these factors increased vulnerability to the relapse of schizophrenia and led to hospitalization. Tadama et al.⁹⁾ has also noted that schizophrenic patients with higher education sought a higher level social life, which could make their social adjustment harder, and this could be applied to the situations both of industrialized cities and of offshore islands whose main industry is fishing and farming.

Before April 1988, 80% of the patients had a history of hospitalization. Since duration from the onset is involved, we cannot make simple comparison, but at least during the four years of the investigation period, the hospitalization rate fell to 47%. With the patients of Group B, psychiatric symptoms and social adjustment were still worse than those of Group A at the end of

investigation period. In the patients of Group B, no significant fall was seen in the hospitalization index from before April 1, 1988 and one after that date. The overall hospitalization index for all the patients of both groups, however, fell significantly during the investigation period compared to that before April 1, 1988. We assume that the fall in the hospitalization index during the investigation period was due to the fact that some of the patients in Group A who had to be in the hospital outside the island for treatment before April, 1988 came to be able to continue receiving treatment by visiting the outpatient clinic after that. This still poses the question of whether continuous treatment for the patients of Group B with severe symptoms was clinically effective.

Since the establishment of the ward, the Psychiatric Department of Tsushima Izuhara Hospital and Izuhara Public Health Center have had a psychiatrist, a occupational therapist and a community nurse visit patients at home and give rehabilitation treatment suitable for each family situation, considering the care capacity of each family and available social resources in the community for each family^{2,10)}. As Oshima¹¹⁾ has noted, in a situation where social resources have not been well-prepared yet, it is a serious problem placed on family members. Family members' support is necessary for the life of schizophrenic patients, but in order to have good quality care continuously, it is an urgent necessity to prepare a family support system to avoid the severe problems for family members. Harada et al.¹²⁾ have noted that hospitalization tends to promote alienation between the patient and the family members and create a gap between the psychiatrist and the family members in recognition and judgment of discharge from the hospital. It seems that changes in and degeneration of family caring capacity are also involved there.

Our on-visit rehabilitation program is also aiming at the promotion of the care function of the family members of schizophrenic patients, and we have reported on our method and the results^{2,10)}. Part of the results can be seen in the reasons for the use of the psychiatric ward during the investigation period. The following features were shown by studying the reasons for the hospitalization. Hospitalization due to family members' exhaustion from the care of the patient

was 42.7%. At the same time there were also other causes for hospitalization. Hospitalization due to family members' great anticipation for improvement in the patient's conditions, such as 'Self-withdrawal has gotten worse,' or 'Won't his/her condition be improved a little?', was 13.5%. Consented hospitalization with the patient hoping to be in the hospital for a short period of time, saying 'I want to rest a while', or 'I want to be away from home a while', was 24.7%. For the prevention of relapse, it is extremely important to learn experimentally when and what type of help the patient and his family members seek subjectively. With the geographical advantage of maintaining a consistent medical care, welfare and community health system on the offshore island, a crisis intervention care system including on-visit rehabilitation services resulted in the hospitalization reasons expressed by the patients and family members of Group B. Sakyō et al.¹³⁾ has noted that in cases of schizophrenic patients with less than 10 years' clinical course, many of the family members gave worsening of social-withdrawal as a reason for hospitalization, which indicated their expectation for cure and their positive attitudes to participating in treatment. Gibbons et al.¹⁴⁾ have reported that most of the family members living with schizophrenic patients faced some kind of emotional and physical problems and their work and private life were adversely effected. They also reported, however, that family members eventually learned what they had to do and how they should deal with critical situations, so family members' distress did not necessarily correlate with the length of the time since the onset.

Many have reported that generally male patients with schizophrenia have onset of the disease at a younger age than female patients, and tend to show more socially ill-adjusted behavior, such as using violence, so the social outcome is worse with male patients¹⁵⁾. For both sexes, it is also realized in general that onset at a younger age itself is an adverse factor for outcome. There were not significant differences in the age of onset between Groups A and B, but, the onset age in Group B was about 2 years younger than that of Group A, and in the case of the females, it was 5 years younger. In the patients of Group A, the onset age of the females was significantly higher than that of the males. We should consider the possibility of this

difference in the onset age affecting the clinical course during the investigation period. The fact that the average age of onset of the female patients of Group A was high, 31.4 years, could be due to the fact that there were many patients with paranoid type. Riecher et al.¹⁶⁾ have noted that not only biological factors but also culturally sexually-tolerated help-seeking behaviors in the regions where expectations for traditional roles for each sex are high are greatly involved in onset age and clinical course. We could not clarify these factors in this study, but it is necessary to clarify the relationship between sexual role expectation and outcome of schizophrenia taking into account regional features and family capacity.

It has been noted that family capacity of Tsushima which is isolated by time and distance from the mainland has been rapidly changed due to the changes of social and economic situation, depopulation and aging, and we think when we consider improvements in treatment for schizophrenic patients on Tsushima, it is indispensable to reexamine the actual life of the patients and their family members in the region.

ACKNOWLEDGEMENTS

The authors are grateful to Y. Imamura and A. Nakano for their generous help. This research was supported by Grant-in-Aid for General Scientific Research No. 0467073 from the Ministry of Education, Science and Culture, Japan.

REFERENCES

1. Shimokawa S, Matsunaga F, Fujita C and Tominaga Y: The actual condition of social rehabilitation of schizophrenic patients in offshore islands. *Seishinka Mook*, 22:33-42, 1988 (in Japanese).
2. Hamada Y, Ito S and Ohta Y: Mental health care strategy for Japanese offshore island of Tsushima. *Ann Agric Environ Med*, 1:251, 1994.
3. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R). APA, Washington DC, 1987.
4. Overall J E and Gorham D R: The brief psychiatric rating scale. *Psychol Reps*, 10:799-812, 1962.
5. Ciompi L und Muller C: *Lebensweg und Alter der Schizophrenen. Eine Katamnestiche Langzeitstudie bis ins Senium*. Springer, Berlin, 1976

6. Jablensky A, Sartorius N, Ernberg G, Anker M, Korten A, Cooper J E, Day R and Bertelsen A: Schizophrenia; manifestations, incidence and course in different cultures: A World Health Organization, Ten-Country Study. *Psychol Med* (Monograph Supplement 20), Cambridge University Press, Cambridge, 1991.
7. Yoshitake K, Araki K and Ohta Y: Long-term outcome of schizophrenia. *Arch Psychiatr Diag Clin Eval*, 2:157-182, 1991 (in Japanese).
8. Ohta Y, Araki K, Michitsuji S and Nakane Y: A comparative study of social adjustment of schizophrenic patients between offshore islands and an urban city by using Katz Adjustment Scale. *Jpn J Soc Psychiatry*, 15:131-145, 1992 (in Japanese)
9. Tadama I, Hirai S, Nakagawa Y, Hanada T and Iguchi T: A study on schizophrenic patients in an outpatients clinic; Factors to keep outpatients in long-term treatment. *Jpn J Soc Psychiatry*, 11:159-167, 1988.
10. Nozoe Y, Hamada Y, Motoyama S and Shugyo A: On-visit rehabilitation for schizophrenic patients in a offshore island in Nagasaki Prefecture. *Jpn J Soc Psychiatry*, 14:237, 1991 (in Japanese).
11. Oshima I: A study on family support system for the mentally disabled from the perspective of its functions and resources. *Psychiat Neurol Jpn*, 89:204-241, 1987 (in Japanese).
12. Harada T, Sato M, Horii S, Mimura K, Nagao T, Tanaka K and Hirata J: The discharge of schizophrenic inpatients; Comparison of recognition of schizophrenic inpatients and their families on the discharge. *Seishin Igaku*, 28:21-27, 1986 (in Japanese).
13. Sakyō T, Toyoda K, Eto K, Uemura M, Tanaka G and Ohta Y: A socio-psychological study of the reasons for admission and embarrassing problems in daily life reported by the family members of schizophrenic patients. *Jpn J Clin Psychiatry*, 23:929-938, 1994 (in Japanese).
14. Gibbons J S, Horn S H, Powell J M and Gibbons J L: Schizophrenic patients and their families: A survey in a psychiatric service based on a DGH. *Br J Psychiatry*, 144:70-77, 1984.
15. Hambrecht M, Maurer K and Hafner H: Gender differences in schizophrenia in three cultures; Results of the WHO collaborative study on psychiatric disability. *Soc Psychiatry Psychiatr Epidemiol*, 27:117-121, 1992.
16. Riecher A, Maurer K, Löffler W, Fatkenheuer B, Heiden W an der, Munk Jorgensen P, Stromgren E and Hafner H: Sex differences in age at onset and course of schizophrenic disorders. In: Hafner H and Gattaz W F (Ed.), *Search for the causes of schizophrenia, VolIII*. Springer-Verlag, Berlin, 1991, pp14-33.

離島の分裂病者に対する精神科サービスと社会的適応について

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要 旨 DSM-Ⅲ Rの基準で診断された分裂病者 100例に対し、1988年4月～1992年4月の期間に行われた継続的治療を臨床的に評価した。1988年4月から始まった観察期間4年間で外来のみで経過したのは53例（A群）、入院を必要としたのは47例（B群）であった。B群はA群より教育水準は有意に高いが、就業率は低く、生活保費護費受給率も高かった。この特徴は男性に顕著に現れていた。B群の精神症状や社会適応度もA群より悪かった。1988年4月以前は100例の約80%が入院歴を有していたが、観察期間内の入院率は47%に低下した。B群の入院理由を検討すると、家族の治療的意欲が大きい入院希望や患者自身の短期入院など、精神科施設の積極的な利用が目立った。交通の便が悪い離島においては、精神科医・精神科作業療法士・保健婦の三者による訪問リハビリテーションの実施が臨床的に有効であることについても言及した。

長崎大医療技短大紀 9: 1-8, 1995