Brain Disorders & Therapy
ISSN: 2168-975X

Tsuneoka et al., Brain Disord Ther 2015, 4:4
DOI: 10.4172/2168-975X.1000181

Research Article Open Access

The Effect of Multi-Disciplinary Psycho-Education for Hospitalized Schizophrenia Patients: The Key Factors for Re-Hospitalization

Toshiaki Tsuneoka[1,3], Koji Hori[2,3]*, Atsuko Inamoto[2,3], Satoru Sugisawa[1,4], Tomohiro Ikeda[1,3] and Akira Iwanami[1,3]

[1]*Karasuyama Hospital Showa University, School of Medicine,Tokyo,Japan*
[2]*Department of Psychiatry, Showa University Northern Yokohama Hospital, Kanagawa, Japan*
[3]*Department of Psychiatry Showa University, School of Medicine*
[4]*Department of Hospital Pharmaceutics, School of Pharmacy, Showa University*

Abstract

Object: We discovered the relationship between any experience and discharge, readmitted. Psycho-education effect schizophrenia patients to discharge. Cognitive function is most important factor about re-admission.

Backgrounds: Today, in Japanese psychiatric hospital, more and more patients are taking an early discharge. This trend has caused a major concern in the psychiatric hospitals because more number patients are being re-hospitalized within a few months after their first discharge.

Methods: We have conducted an experiment in which we offered multi-disciplinary psycho-education to 160 schizophrenia patients. The experiment was conducted in the time span of nearly three years (Dec. 2009-Jul. 2013), with all the patients' agreement. The patients showed significant improvement in all of the following when compared with prior to the psycho-education: GAF, SAI-J, DAI-10, and objective SCORS-J. Comparing the 137 patients who were able to discharge with 23 patients who were not. And we comparing the 22 patients who re-admitted within one year and the 77 who were not.

Results: Comparing discharge or not, there was no significant difference in the amount of CP. However, there was a great improvement in PANSS, BPRS, GAF, SAI-J, and both objective and subjective SCORS-J. Comparing re-admitted or not, PANSS, BPRS and most of other indicators showed any noticeable difference, objective SCORS-J showed a trend that non-readmitted patients had higher scores.

Conclusions: This research suggests the potential of psycho-education's function for schizophrenia patients as a preventive measure of re-hospitalization, and the significance of cognitive function as a critical factor.

Introduction

In recent years in Japan, psychiatric treatment industry is experiencing a big change. It has been pointed out that there are a greater number of hospitalized patients, compared to other developed countries. Patients with schizophrenia numbered 17.2 million people out of 29.3 million in-hospital patients in 2011 [1].

Although the number of hospitalized patients have decreased from 32.9 million (21 million with schizophrenia) since 1991, it is yet much greater than many other developed countries [2]. Since schizophrenia patients have hard time spending their time as easy as healthy people, they often struggle to spend average social lives. Therefore, many of them were isolated to live in an environment full of protection. As a result, with the fear towards the news about mentally disabled people committing serious crimes, a strongly biased argument was created in Japanese peoples' minds: mentally disabled people should be under protection of hospitals [3,4].

Under the slogan of "from the hospital to home", the Japanese government has been making an attempt to shorten the hospitalization for schizophrenia patients [5]. A specialized ward with a preferential treatment on medical insurance for schizophrenia patients called "super emergency ward" was said to be necessary by the government [6]. When we consider the fact that the average hospitalization term for mental disabled patients in 2012 was only 292 days, three months is a very short period for the hospital to send the patients away [7]. So many patients are discharged, but many patients are re-hospitalized after an early discharge from the hospital. This phenomenon is called "Revolving door syndrome" and is becoming a serious social issue.

The "Revolving door syndrome" harms the patients` social lives deteriorating the negative symptoms, and reduces their potential for participating in the society. One of the reasons this symptom occurs, is based on the patients' lack of knowledge about the governmental programs. Other reasons are the lack of knowledge about the patients' own illness, such as how to take medicine, how to obtain quality sleep, how to keep a well-regulated lifestyle, or how to send a "SOS" signal. Considering these points the necessity of psychological education has been pointed out, [8-10] however it is impossible to be conducted by sole profession [11].

Thus, we have conducted a psycho-educational team that consists of doctors, nurses, pharmacists, nutritionists, psychologists, psychological social workers, and occupational therapists. The team gives an hour-long lecture to the patients eight times a week. Using this method, we believe that many patients are able to be free from the "Revolving door syndrome" and sustain their social life. However there are still certain numbers of patients who are re-hospitalized. In our research, we aimed

***Corresponding author:** Koji Hori, Department of Psychiatry, Showa University Northern Yokohama Hospital, 35-1 Chigasakichuo, Tsuzukiku, Yokohama-City, Kanagawa, 224-8503, Japan, Tel: +81-45-949-7000; Fax: +81-45-949-7927; E-mail: kojihori@med.showa-u.ac.jp

Received July 01, 2015; **Accepted** August 25, 2015; **Published** August 31, 2015

Citation: Tsuneoka T, Hori K, Inamoto A, Sugisawa S, Ikeda T, et al. (2015) The Effect of Multi-Disciplinary Psycho-Education for Hospitalized Schizophrenia Patients: The Key Factors for Re-Hospitalization. Brain Disord Ther 4:181. doi:10.4172/2168-975X.1000181

to establish the idea that psycho-education helps to stabilize patients' social lives and to identify predictors of the "Revolving door syndrome". The following is the overview of our research. Starting from the subjects & methods, we put the results we have tested. Based on the results, we raised some controversial points to be discussed, followed by the conclusion of the overall experiment.

Materials and Methods

Materials

We tested 160 Schizophrenia patients who met the diagnostic criteria for ICD-10. We have collected all of the patients' signatures on conducting this experiment. These subjects have received psychological education in sub-acute ward from December 2009 to July 2013 at Karasuyama Hospital. Karasuyama Hospital owns two super emergency wards that accept patients with critical symptoms every day. In cases where short-term treatment in the super emergency wards is insufficient for hospital discharge, the sub-acute ward accepts patient transfers. Doctors there aim for hospital discharge after 3-6 months of ongoing treatment (Figure 1).

Methods

"Community life support program (the program)", which is conducted by 7 facilitators with different occupation, is based on multidisciplinary psychological education intervention. On enrollment, patients had to be measured in several terms: Positive and Negative Syndrome Scale (PANSS) and Brief Psychiatric Rating Scale (BPRS). We have also tested the following to observe if there is any difference before and after the program: Global Assessment of Functioning (GAF), Schedule for Assessment of Insight - Japanese version (SAI-J), Patient Drug Adherence scores using the 10-item version of the Drug Attitude Inventory (DAI-10), and Schizophrenia Cognition Rating Scale - Japanese version (SCORS-J).

Chlorpromazine equivalent was also tested to make a comparison after the program ends [12]. The patient's primary physician rated the GAF. We also had the primary physician rate SAI-J by giving the patient a semi-structured interview. Complete administration of the SCORS-J included two separate sources of information that generated three different ratings: an interview with the patient, an interview with an informant of the patient (family member, friend, social worker, etc.), and rating by the interview who administered the scale to the patient and informant. In the present study, the SCORS-J was evaluated in two ways, one by the patient ("self-rating") and the other by the primary physician and the nurse ("physician-rating"). In addition, we measured correlation between clinical records during convalescence and the test results. As some of the participants were discharged without being evaluated after the program, their data was not taken into account.

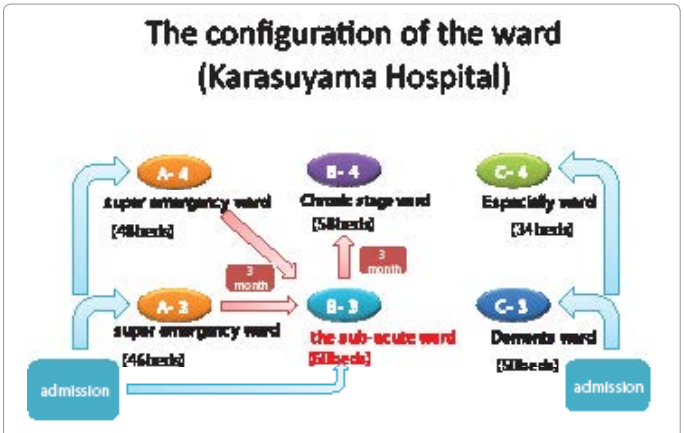

Figure 1: Two super emergency wards (A-3, A-4) accept patients with critical symptoms every day. The patients move to subacute ward (B-3) if they cannot discharge within three months. Further three months after, they go to chronic stage ward (B-4).

Specialty of the program: Showa University Karasuyama Hospital has 6 wards including 2 super acute wards. Many patients with acute symptoms in the special wards arrived there accompanied by their family or the police. In the super acute ward, we try to discharge patients within 3 months. Patients who need more time will be sent to another ward "the sub-acute unit". This unit also aims at discharging the patients in another three to six months by giving them the Program. The purpose of the Program is to "maintain a stable social life without recurrence". The Program consists of 8 units (1 unit/week, on certain days at a certain time), and all units have two parts. The first part (30 minutes) is a lecture given by specialists and the second part (30 minutes) is discussion based on the lecture. The lectures are given by a variety of specialists: doctors, nurses, pharmacists, clinical psychologists, psychiatric social workers, and occupational therapists. Each of the specialists will give a lecture upon their own view for supporting the patients to live independently after the discharge. One of the lectures is given by a certified social worker from in their neighborhood to raise patients' awareness of being connected socially with the hospital even after their discharge. There is also a lecture that takes the patients to visit the day-care room or the outpatients' occupational therapy room.

This is aimed to alleviate the urge to reject going to such facilities after discharge [13,14].

The Program holds the following two principals. One is to support the patients' independency. Second, which is related to the doctor's side, is that doctors must strive to have a versatile perspective of understandings towards the patient, instead of having a one-sided narrow comprehension.

As for our first principal, there are many cases where the doctors harm the potential of the patients' independency by giving decisive instructions. Therefore, the society around the patient, such as their family and friends and even him/herself, acts only in the way that the medical personnel told him/her to. Although the advice is rational and patients must follow the medical personnel's instructions, patients must gradually become able to deal with their daily lives based on their own thinking, beyond the instructions. When the fact that being re-hospitalized is unavoidable without the ability to think and act on their own, we strongly believe the significance of such abilities. As for the second principal, currently there is a new trend spread in the mental health segment. More and more people are starting to support the idea that the responsibility of medical treatment should belong to the team with multiple specialists, instead of sole attending doctor [15]. By working in a unit of different specialists, we get to understand more about the patient from a wider range of perspective.

Statistical analysis: Among the investigated factors, paired t-test and Wilcoxon's signed rank sum test were performed on measurements of efficacy indicators before and after the Program. For the comparison of the 2 groups (discharged group and non-discharged group/ readmission group and non-readmission group), either Welch-t test, Student-t test or chi-square test were performed. SPSS ver. 19 (IBM SPSS Statistics) was used for analysis, with a 5% level of significance in two-tailed tests.

Ethical consideration: This study was approved by the Ethics Committee of the Showa University School of Medicine. (No. 811)

Results

Changes in the measurements of the program's efficacy

The average age of the 160 participants (82 male, 78 female) was 42.7 year old. The average score of PANSS was 94.8 (20.2), and BPRS average score was 52.5 (16), which indicates a moderate severity of schizophrenia (Table 1). While the calculated dose of Chlorpromazine (CP) did not differ significantly before and after the Program, GAF (pre 48.6, post 57.0 p<0.001), SAI-J (pre 11.5, post 15.1 p<0.001), and DAI-10 (pre 2.9, post 5.3 p<0.001) significantly improved after the Program. SCORS-J, the indicator of cognitive function in schizophrenia, did not show significant change when self-rated however, improved significantly when rated the physician (pre 39.7, post 35.1 p<0.001) (Table 1).

Outcomes

	Participants		
	Pre	Post	p
Age (year)	42.7		
PANSS	94.8 (20.2)		
CP (mg)	913 (486)	890.5 (499)	0.421
BPRS	52.5 (16)		
GAF	48.6 (12.1)	57.0 (110.)	<0.001
SAI-J	11.5 (4.6)	15.1 (3.9)	<0.001
DAI-10	2.9 (4.7)	5.3 (4.1)	<0.001
SCORS-J (self)	41 (12.8)	41.6 (12.2)	0.658
SCORSJ (physician)	39.7 (12.8)	35.1 (12.5)	<0.001

Table 1: All participants.

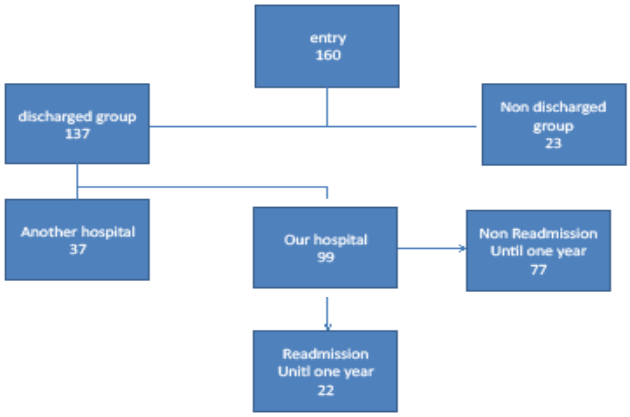

Figure 2: Outcome of the program after the end of one year. 137 patients were discharged within a year after the Program. 23 were not discharged; after discharge, 99 continued attending our hospital as outpatients and 37 were transferred to a different hospital. Within a year, 22 patients were readmitted.

	The admission form	
	First admission	Re-admission
Voluntary	8 (6%)	7 (32%)
Medical care and protection	83 (52%)	15 (68%)
Documents for involuntary	68 (42%)	0 (0%)

Table 2: The admission form.

Of all the patients who participated in the entire Program, 137 (86%) patients were discharged within a year after the Program, 23 patients (14%) were not discharged; they remained in our hospital or transferred to other hospitals for further meditation. Among those 137 patients who were discharged, 99 (72%) continued attending our hospital as outpatients and 37 (28%) were transferred to a different hospital due to commuting problems. All 99 outpatients continued attending to our hospital and none stopped upon their self-decision. 5 (5%) patients were readmitted within 3 months after the discharge, 16 (16%) were readmitted within 6 months. Within a year, 22 (22%) patients were readmitted (Figure 2).

The admission form of psychiatry in Japan is roughly divided into three forms: "Voluntary hospitalization", "hospitalization for medical care and protection", and "Documents for involuntary hospitalization ordered by prefectural governor". When patients are willing to be hospitalized or gives the consent, the admission form given out is "Voluntary hospitalization" [16]. "hospitalization for medical care and protection" is the case where the officially admitted psychiatrist agrees to hospitalize and provide medical care along with the guardian's consent, regardless of the patient's willingness [17]. Finally, the "Documents for involuntary hospitalization ordered by prefectural governor" is the case in which the police or government agencies propose the patient's hospitalization in terms of security means, considering their risk of harming themselves as well as other people. The proposal is only activated after two examinations by specified psychiatrists [18].

Out of the 160 patients, 68 (42%) were admitted by "Documents for involuntary hospitalization ordered by prefectural governor", 83 (52%) by "hospitalization for medical care and protection", and only 8 (6%) by "Voluntary hospitalization".

Further research showed that among the 137 discharged patients, 58 (42%) were admitted by "Documents for involuntary hospitalization ordered by prefectural governor", 71 (52%) by "hospitalization for medical care and protection", and 8 (6%) by "Voluntary hospitalization". It can be concluded that there were no significant difference that can be observed between the successfully discharged and their counterpart.

As for the 22 readmitted patients within one year, 15 (68%) were admitted by "hospitalization for medical care and protection", 7 (32%) by "Voluntary hospitalization". In fact, none of them were admitted by "Documents for involuntary hospitalization ordered by prefectural governor" (Table 2).

Indicator and prognostic

Now, we have compared the results of various rating scales for both discharged group and non-discharged. There was no significant difference in amount of CP, however, the score of PANSS, BPRS for the discharged group was significantly low (PANSS p=0.007, BPRS p=0.042). The score of pre and post GAF, and post SAI-J for discharged group were significantly high (pre GAF p=0.05, post GAF p<0.001, post SAI-J p=0.031). Furthermore, we found significant difference in cognitive function scale pre SCORS-J (rated by physician) (p=0.01) (Table 3).

Next, we divided the 99 patients after completing the Program into two groups: readmitted and non-readmitted. Comparing the two, results showed no significant difference in patients' background factors such as age, sex, and several results of mental state scales (PANESS, BPRS) also did not show noticeable change. The score of pre and post SCORS-J (rated by physician) showed a significant difference (pre

	Discharged	Non-discharged	p value
PANSS (year)	92.5 (20.1)	102 (13.2)	0.007
CP (pre) (mg)	919.4 (480.2)	871.9 (564.4)	0.715
CP (post) (mg)	895.5 (485.3)	940.2 (576.8)	0.734
BPRS	52.2 (16.4)	56.6 (6.9)	0.042
GAF (pre)	49.1 (12.4)	41 (10.5)	0.05
GAF (post)	58.4 (10.5)	47.4 (10.1)	<0.001
SAI-J (pre)	11.5 (4.7)	10.6 (4.4)	0.441
SAI-J (post)	15.5 (3.6)	12.9 (5.1)	0.031
DAI-10 (pre)	3.0 (4.9)	2.9 (4.1)	0.959
DAI-11 (post)	5.0 (4.4)	6.4 (3.3)	0.244
SCORS-J (pre/self)	40.3 (12.6)	45.8 (11.3)	0.071
SCORS-J (post/self)	40.1 (13.3)	49.4 (14.2)	0.378
SCORS-J (pre/physician)	41.2 (12.4)	44.2 (9.8)	0.011
SCORS-J (post/physician)	33.9 (11.5)	45.0 (15.5)	0.137

Tables 3: Discharged compare non- discharged.

	Non-readmission	Readmission	p Value
PANSS	93.7 (22.1)	89.6 (20.7)	0.462
CP (pre)	888.2 (451.2)	948.4 (483.2)	0.602
CP (post)	850.9 (454.6)	963.9 (512.5)	0.338
BPRS	50.7 (14.6)	52.2 (21.4)	0.702
GAF (pre)	50.3 (12.1)	48.9 (11.1)	0.633
GAF (post)	59.8 (9.8)	56.3 (8.7)	0.169
SAI-J (pre)	11.1 (4.9)	13.1 (4.2)	0.114
SAI-J (post)	15.7 (3.5)	14.0 (4.6)	0.112
DAI-10 (pre)	4.1 (5.0)	1.4 (5.3)	0.037
DAI-11 (post)	5.5 (4.5)	4.4 (4.5)	0.35
SCORS-J (pre/self)	38.2 (12.8)	43.811.9)	0.073
SCORS-J (post/self)	39.4 (13.0)	44.4 (1.3)	0.152
SCORS-J (pre/physician)	37.8 (13.3)	45.4 (12.9)	0.049
SCORS-J (post/physician)	31.4 (9.5)	42.5 (12.3)	0.001

Table 4: Two groups of readmitted and non-readmitted.

p=0.049, post p=0.001) is the only measure that showed distinct change (Table 4).

Discussion

We implemented the psychological education for schizophrenic patients who do not meet the criteria (ex. severe housing environment, unstable psychiatric symptoms). CP dose and SCORS-J (rated by patient) did not alter significantly before and after the Program. However, GAF, SAI-J, DAI-10 (self-rating), and the physician-rating SCORS-J all showed significant improvement compared with the pre and post Program. The result indicates, that the increase in patients' acknowledgment of their own sickness and medication adherence leads to the improvement in DAI-10 and SAI-J through the Program.

The result of SCORS-J (which indicates the cognitive function of the schizophrenia patients) showed an interesting aspect. While the physician's third-person rating showed an improvement, the patients' subjective assessment on cognitive function did not improve. We assume that this is due to degradation of confidence, spending a long time being hospitalized. Participation of the Program itself was not enough to improve the patients' own assessment of their cognitive function. However, there were positive outcomes as well. The discharging rate from the sub-acute wards improved up to 86%. Even more, the rate of outpatients who continue attending after the discharge also improved up to 72%. One patient who takes more than two hours of commuting on one way, continue attending to our hospital in spite of our recommendation for transferring to a local hospital.

We have not conducted a comparison with the re-hospitalization rate under the same conditions. However, only 5% of the patients who struggle to discharge due to their unstable mental health were readmitted within three months after discharge. This is a considerably low rate considering their re-hospitalized rate. According to the report by "Health Science Research Project of the Heart" [19], the readmission rate of schizophrenia patients within six months marks 30%. Fujita, who conducts his original program for schizophrenia in the acute ward, reported that the readmission rate within a year for the program participants was 23.6% (60.5% for non-participants [20]). Considering these data, our Program succeeded in proving its effectiveness. The readmission rate within six months is 16%, and within one year the rate was only 22%.

Regarding the hospitalization form, the percentage of the voluntary hospitalized patients is increasing. The Program encourages patients and their family to consult their doctors about their medical condition even in critical situations. The fact that there was no "Involuntary Hospitalization" indicates that patients were less reluctant to visit the hospital and consult the primary physician, with the assist of their families in needed. We believe that a firm relationship between family, doctors and patients was established through the Program.

A comparison of those who discharged and those who were not able to discharge did not show any difference in the scores of PANESS, BPRS, and CP. The self-rating scale DAI-10 and SCORS-J also did not show any difference while the score of GAF, and SAI-J showed some differences. The result suggests that in terms of early discharge, physician's rating of the disease and the sociability of the patients are more important than the self-rated mental symptoms.

Prior to the experiment, we assumed SAI-J, which involves in medication adherence, was the most important factor for the readmission. However, we could not find any difference in SAI-J score in the both groups (discharged and non-discharged) who re-admitted after one year. Instead, we found a significant difference in SCORS-J. Although all patients who took the Program are well educated of the significance of adherence, some patients gradually start to degrade the lesson. We believe this has much to do with the patients' cognitive function. Support with a great deal of generosity is necessary, especially for those who have low cognitive function.

Worldwide, relation between cognitive function and schizophrenia is well known and many studies and papers are going on[1] [21]. Relationship between cognitive function and QOL [22], cognitive function and rehabilitation [23] are also reported. However, to our knowledge, no studies have examined the relationship between cognitive function and re-hospitalization. In Japan, psychiatric patients are admitted to hospital when psychiatrist deemed necessity at disease exacerbation, regardless of their economic conditions and their consent. So re-admission (especially in involuntary hospitalization) in Japan represents disease exacerbation, which is rare in the world.

In many countries, hospitalization is decided according to their disease condition, economic state, and family environment and so on. Therefore, this result must be interpreted with caution. It may need to decipher as follows. "Schizophrenia patients who improved after psychological education whether or not to exacerbate, depends on patients cognitive function". Recently, reports about improvement on cognitive function through mental training are found here and

there [24,25]. Currently, we are analyzing the effects of "face to face cognitive function training" in our hospital as well. Aside from patients obtaining the insight of their own sickness from the Program, and to make the program more effective, the improvement of the cognitive function through the cognitive function training have the potential for preventing the "Revolving door syndrome". Also, we are conducting a trial of comprehensive rehabilitation program [26]. Which combines psychological education and cognitive function improvement therapy.

Conclusion

We implemented a psychological education program and confirmed its effect by investigating the predictors of hospital readmission and hospital discharge. We found considerable improvement through the Program in GAF, SAI-J, DAI-10, and physician-rated SCORS-J. The Program has stimulated patients' sociability and patients' medication adherence. We suggest that the primary difference in the discharged group and non-discharged group is revealed through cognitive function (SCORS-J) aspect, and not through psychiatric symptoms (PANSS, BPRS). Also, the main difference between the non-readmission group and the readmission group was observable in self-rating cognitive function instead of the global assessment of function (GAF), nor the assessment of insight for the disease (SAI-J). Adding to that, as for the discharge and re-admission, the cognitive function is strongly involved, rather than the psychiatric symptoms. We are required to provide comprehensive treatment that treats not only positive and negative symptoms but also treats for improvement of cognitive function.

This study was supported by the science research subsidy from the Ministration of Health, Labor and Welfare, and the subsidy from No6. Research Group for Schizophrenia.

Acknowledgements

My heartfelt gratitude goes to Director General Dr. Kato whose feedbacks and suggestions were incredibly valuable throughout the course of my study. Also, I would like to express special thanks to the Ward staff whose meticulous comments were an enormous help for us. Last but not least, my gratefulness and deepest love goes to my family for their warm support and encouragements.

References

1. http://www.mhlw.go.jp/kokoro/speciality/data.html.
2. Yusuke F (2015) Psychiatric hospitalization: How should it work? Japanese Journal of Clinical Psychiatry 44: 313-318.
3. Takemura K (1988) Nihon.syuyourettouno, Kindaibungeisya, Tokyo, Japan.
4. Osamu T (2015) Syowa Seisineiseihoukaiseitosonojidai. Seishinigaku 57: 229-235.
5. Kono T, Shiraishi H, Tachimori H (2012) Discharge dynamics and related factors of newly-admitted patients in psychiatric hospitals. Psychiatria et Neurologia Japonica 114: 764-781.
6. Kunitoshi H (2012) The Super Emergency Ward and Tokyo Emergency System for the mental illness. Japanese Journal of Clinical Psychiatry 4: 381-390.
7. http://www.mhlw.go.jp/kokoro/speciality/data.html.
8. Falloon IR, Boyd JL, McGrill CW, Razani J, Moss HB, et al. (1982) Family management in the prevention of exacerbations of schizophrenia: a controlled study. N Engl J Med 306: 1437-1440.
9. Shimodera S, Inoue S, Mino Y, Tanaka S, Kii M, et al. (2000) Expressed emotion and psycho-educational intervention for relatives of patients with schizophrenia: A randomized controlled study in Japan. Psychiatry Res 96: 141-148.
10. Uchino T (2011) Psychosocial interventions for complementing pharmacotherapy to reduce relapsing in patients with schizophrenia (review). Japanese Journal of Clinical Psychopharmacology 14: 1625-1632.
11. Ito J, Suzuki J (1997) Ssttoshinrikyoiku. Chuohoki Publishing, Japan 52-53.
12. Inagaki A, Inada T (2012) Dose equivalence of psychotropic drygs.Part XXⅢ ~ dose equivalence of novel antipsychotics ～ paliperidone extended release. Japanese Journal of Clinical Psychopharmacology 15: 397-404 .
13. Tsuneoka T, Sugisawa S, Ikeda T, Ogawa H, Yamamoto K et al.(2014) Effect of psycho-education by multidisciplinary for schizophrenia patients in the hospital. Japanese Journal of Clinical Psychopharmacology 43: 101-108.
14. Yamamoto K, Kanagawa Y, Ikeda T, Sugisawa S, Tsuneoka T et al. (2011) Kanjano tiikisei katsu jittaini sokushi tanyuu innsinnri kyouikupu roguramun okouka kensyou. Japanease Hospital and Community Psychiatry Association 54: 63-66.
15. Shinsuke K (2012) Evidence of psychosocial intervention and family support in early psychosis and at risk mental stat. Japanese Journal of Clinical Psychiatry 41: 1455-1461.
16. Masashi H, Masamichi S (2002) Voluntary hospitalization and/or hospitalization for medical care and protection. Japanese Journal of Clinical Psychiatry 31: 1495-1500.
17. Sawa Y (2013) Medical care custody admissions (admission report, periodical mental state review, discharge report). Japanese Journal of Clinical Psychiatry 42: 93-98.
18. Jin T (2013) Documents for involuntary hospitalization ordered by prefectural governor. Japanese Journal of Clinical Psychiatry 42: 83-92.
19. www.ncnp.go.jp/nimh/keikaku/vision/pdf/visionh19.pdf.
20. Fujita A, Shirai T (2014) The effects of psychoeducation in a psychiatric emergency medical center of Hyogo. Emergency Psychiatry 17: 116-122.
21. Reichenberg A, Harvey PD (2007) Neuropsychological impairments in schizophrenia: Integration of performance-based brain imaging findings. Psychol Bull 133: 833-858.
22. Savilla K, Kettler L, Galletly C (2008) Relationships between cognitive deficits, symptoms and quality of life in schizophrenia. Aust N Z J Psychiatry 42: 496-504.
23. Wykes T, Huddy V, Cellard C, McGurk SR, Czobor P (2011) A meta-analysis of cognitive remediation for schizophrenia:methodology and effect sizes. Am J Psychiatry 168: 172-485.
24. Hirofumi A (2009) A trial of cognitive remediation therapy for schizophrenia the effect of training using car driving simulator. Clinical Psychiatry 51: 65-69.
25. Ikebuchi Emi (2010) Cognitive rehabilitation effectiveness and feasibility for treatment of schizophrenia. Clinical Psychiatry 52: 6-16.
26. Nakatsubo T, Inamoto A, Tsuneoka T, Ogawa H, Ikeda T (2014) Cognitive remediation therapy in several domains by means of one-to-one consultation. Japanese Journal of Clinical Psychiatry 43: 413-420.