

## Rehospitalizations Among Psychiatric Patients Whose First Admission was Involuntary: A 10-Year Follow-Up

Paula Rosca, MD,<sup>1</sup> Arie Bauer, MD, LLD,<sup>1</sup> Alexander Grinshpoon, MD, MHA,<sup>2</sup> Razek Khawaled, MA,<sup>1</sup> Roberto Mester, MD,<sup>2,4</sup> and Alexander M. Ponizovsky, MD, PhD<sup>3</sup>

<sup>1</sup> Forensic Psychiatry Unit, Mental Health Services, Ministry of Health, Jerusalem, Israel

<sup>2</sup> Mental Health Services, Ministry of Health, Jerusalem, Israel

<sup>3</sup> Department of Research, Mental Health Services, Ministry of Health, Jerusalem, Israel

<sup>4</sup> Sackler School of Medicine, Tel Aviv University, Ramat Aviv, Israel

**Abstract:** *Objectives:* To examine the characteristics of patients whose first admission to Israel's psychiatric units was involuntary, and to identify a specific profile of the patients at increased risk for future readmissions. Our hypothesis was that when the first admission of a patient was involuntary, the number and duration of future hospitalizations would be greater. *Method:* We used information extracted from the National Psychiatric Case Registry on all patients admitted for the first time during 1991 (N=2,150) and on their follow-up over the next ten years. Chi-square statistics were used to test for significance differences in demographic and clinic variables between patients hospitalized voluntarily and those hospitalized involuntarily. Multiple regression analysis was performed to identify a specific profile of risk of recidivism during a ten-year period (1991-2000). *Results:* Compared with patients admitted voluntarily, those who were admitted involuntarily had a significantly greater number and duration of rehospitalizations. They were more likely be diagnosed as suffering from schizophrenia while the voluntarily admitted patients were more likely be diagnosed as having an affective disorder. Risk factors for the number of readmissions included: young age, legal status (involuntary) of the first admission, as well as period of residence in the country. Risk factors affecting the duration of readmissions were single/widowed status, native born and a suicide attempt in the two months prior to the first admission. *Conclusions:* Two distinct profiles for the number of readmissions and inpatient days were identified. A diagnosis of schizophrenia and selected demographic variables were better at predicting risk of recidivism than the involuntary legal status of the first admission.

### Introduction

The pattern of mental health inpatient care in Israel is undergoing major changes. The aim of these changes is to reduce the number of beds for patients with chronic conditions and the length of their stay, and to develop community-based services. The reforms take in not only the structure of the mental health services, but also the financial coverage and legislation. With regard to the latter, there are proposals to modify the Patients' Rights Law, 1996 (1), including the rights of patients with psychiatric disorders. Accordingly, special efforts are being made to extend the implementation of orders for involuntary ambulatory treatment and to limit the involuntary hospitalization modality. Prompted by politics arising from the Reform, the Mental Health Services at the Israel Ministry of Health need to be able to pre-

dict with greater accuracy the number and duration of psychiatric hospitalizations, including those which are involuntary. This need is an outcome of the findings of a recent national survey that revealed a trend of increasing involuntary psychiatric admissions over the last decade (2).

Given the worldwide trend of increasing psychiatric readmissions (3, 4), many investigators have tried to determine clinical, social and demographic factors, which are associated with or are able to predict repeated hospitalizations (Table 1). Most studies have been conducted in the U.S. and identified the two major groups of risk factors: patient-related and service-related factors. The following patient-related factors/predictors have been reported: male gender (5); young age (6-8); unmarried and unemployed status (9, 10); diagnoses of schizophrenia (11); alco-

Address for Correspondence: Alexander M. Ponizovsky, MD, PhD, Mental Health Services, Ministry of Health, 2 Ben Tabai St., Jerusalem 93591, Israel. E-mail: alexander.ponizovsky@moh.health.gov.il

hol/drug dependence (12-14); personality, mood, bipolar or schizoaffective disorders (7, 15, 16); and first involuntary admission (10, 17). Among the service-related factors predicting rehospitalization: short length of hospitalization (18, 19), inadequate community services (20) and involuntary status of first hospitalization (17) have been found.

Fennig et al.'s study (21), conducted in Israel on a large national sample of patients with schizophrenia,

found a strong association between involuntary legal status at first admission and both involuntary legal status and number of subsequent readmissions. Their results suggest that an involuntary first admission strongly contributed to rehospitalization rates. Unfortunately, other risk factors were not examined in that study, and the study's conclusions cannot be generalized to the population of patients with no schizophrenic mental disorders.

Table 1. *Predictors of re-hospitalizations studies*

Author	Year	Country	Factors	Risk*
Figuroa et al. (19)	2004	USA	Short length of hospitalization (less than 10 days)	+
Baron & Hays (8)	2003	USA	Short first hospitalization	+
			Younger age on first admission	+
Feigon & Hays (10)	2003	USA	Involuntary commitment	+
			Longer hospital stay	+
Cuffel et al. (11)	2002	USA	Schizophrenia, bipolar disorders, dual diagnosis	++
			Non-compliance treatment	+
			lack of family and social support	+
			readmissions 12 months before index admission	+
Bernardo & Forchuk (7)	2001	Canada	Young age, male, divorced, unemployed	+
			Schizophrenia	++
			Behavioral problems	+
Houston & Mariotto (5)	2001	USA	Male gender linked with involuntary hospitalization	++
Sipos et al. (16)	2001	Great Britain	Manic symptoms	++
			Drug misuse	+
Chang et al. (13)	2001	China	Age under 40, alcohol-drug abuse, dysthymia, borderline personality disorder, GAF <50.	+
Fennig et al. (21)	1999	Israel	Involuntary first admission — type of readmissions	+
			Involuntary admission — male,	++
			low social class, single	++
Klinkenberg & Calsyn (20)	1996	USA	Inadequate community support variables	+
Sanguineti et al. (6)	1996	USA	Young age, male, unmarried	+
			schizophrenia	++
Haywood et al. (12)	1995	USA	Alcohol-drug abuse,	++
			Non-compliance with medication	++
Munk-Jorgensen et al. (17)	1991	Denmark	First admission involuntary	++
Colenda & Hamer (18)	1989	USA	Short length of hospitalization (15 days)	+
Miller et al. (14)	1984	USA	Schizophrenia, drug abuse,	++
			Failure to attend out-patient treatment	+

+ high risk; ++ very high risk

Table 2. Sociodemographic and clinical characteristics of psychiatric inpatient by legal status of first admission

Characteristic		Hospitalization				Total	
		Voluntary (N=1,649)		Involuntary (N=501)		(N=2,150)	
		N	%	N	%	N	%
Gender <sup>a</sup>	Male	825	50.0	324	64.7	1149	53.4
	Female	824	50.0	177	35.3	1001	46.6
Age at admission <sup>b</sup> (yr.)	18-24	377	22.9	123	24.5	500	23.3
	25-44	755	45.8	268	53.5	1023	47.6
	45-64	375	22.7	79	15.8	454	21.1
	65 and over	142	8.6	31	6.2	173	8.0
	Unknown	28	2.0	19	3.8	47	2.2
Marital status <sup>c</sup>	Single	654	39.7	243	48.5	897	41.7
	Married	706	42.8	168	33.5	874	40.6
	Divorced/Separated	164	9.9	54	10.8	218	10.1
	Widowed	97	5.9	17	3.4	114	5.3
	Unknown	28	2.0	19	3.8	47	2.2
Years of education <sup>d</sup>	0-8	350	22.0	109	22.9	459	22.2
	9-12	858	53.9	199	41.8	1057	51.1
	13 and over	212	13.3	80	16.8	292	14.1
	Unknown	171	10.8	88	18.5	259	12.5
Immigration date <sup>e</sup> (yr.)	Before 1971	372	44.2	107	43.3	479	42.5
	1972-1988	138	15.7	46	18.6	184	38.6
	1989 and over	371	42.1	94	38.1	465	41.2
Country of origin <sup>f</sup>	Israel	756	45.8	237	47.3	993	46.2
	Eastern Europe	502	30.4	133	26.6	635	29.5
	Western Europe	51	3.1	18	3.4	69	3.2
	Asia	102	6.2	37	7.4	139	6.5
	Africa	187	11.3	57	11.4	244	11.3
	North America	23	1.4	9	1.8	32	1.5
	Latin America	23	1.4	10	2.0	33	1.5
	Oceania	1	.05	0	0.0	1	.05
	Unknown	4	0.2	0	0.0	4	0.2
Number of hospitalizations <sup>g</sup>	1	858	52.1	200	39.9	1,058	49.2
	2-5	634	38.4	218	43.5	852	39.6
	6-10	127	7.7	60	12.0	187	8.7
	11+	30	1.8	23	4.6	53	2.5
Inpatient days <sup>h</sup>	0-7	237	14.4	81	16.2	318	14.8
	8-90	755	45.8	182	36.3	937	43.6
	91-365	407	24.7	129	25.7	536	24.9
	365+	250	15.1	109	21.8	359	16.7
Diagnostic category <sup>i</sup>	Schizophrenia	646	39.2	260	51.9	906	42.2
	Affective Disorder	369	22.4	56	11.2	425	19.8
	Personality Disorder	222	13.5	69	13.8	291	13.5
	Other	412	24.9	116	23.1	528	24.6

<sup>a</sup> $\chi^2=33.10$ ,  $df=1$ ,  $p<.0001$ ; <sup>b</sup> $\chi^2=16.92$ ,  $df=3$ ,  $p<.001$ ; <sup>c</sup> $\chi^2=27.91$ ,  $df=5$ ,  $p<.0001$ ; <sup>d</sup> $\chi^2=31.32$ ,  $df=3$ ,  $p<.0001$

<sup>e</sup> $\chi^2=1.86$ ,  $df=2$ , NS; <sup>f</sup> $\chi^2=6.15$ ,  $df=8$ , NS; <sup>g</sup> $\chi^2=33.99$ ,  $df=3$ ,  $p<.0001$ ; <sup>h</sup> $\chi^2=18.91$ ,  $df=3$ ,  $p<.001$ ; <sup>i</sup> $\chi^2=39.69$ ,  $df=3$ ,  $p<.0001$

In the study reported here, a nation-wide group of patients admitted for the first time to any one of Israel's psychiatric units during 1991 was followed-up over the following 10 years with regard to the number and duration of rehospitalizations. The aim was to identify a specific profile characterizing the patient group at high risk of readmission. Based on the literature, we hypothesized that patient-related factors associated with the number and duration of readmissions would include: male gender, young age, unmarried and unemployed status, diagnoses of schizophrenia, alcohol/drug dependence, personality disorder, mood disorder and involuntary first admission. The service-related factors will be the focus of a further study.

## Methods

### Data source and sampling

The National Psychiatric Case Registry was used to identify all patients admitted for the first time to psychiatric inpatient units between January 1 and December 31, 1991. The total number and duration of psychiatric admissions of these patients over the 10 year follow-up period (up until December 31, 2000) were extracted from this database which contains complete information on all psychiatric admissions and discharges in Israel since 1950 (22). The Registry also includes information on gender, age, marital status, years of education, national-religious affiliation (Jewish, Muslim, Christian, etc.), country of origin, date of immigration, duration of hospitalization, diagnosis at admission and discharge, and recent suicide attempt (during the two months prior to admission).

In the study sample were included only case-records fulfilling the following inclusion criteria: 1) age 18 years and older; 2) belonging to one of four religious groups (Jews, Muslim-Arab, Christian-Arab, and Druse); and 3) alive at the time of follow-up (December 31, 2000). In addition, given the likelihood of heterogeneity of the involuntary patient group, we excluded from the sample those who were defined as involuntary upon admission, but who changed their legal status during the entire time of the hospitalization. Thus, out of the total of 3,424 patients regis-

tered as first time admitted during the year 1991, only the 2,150 were analyzed.

### Data Analysis

The analysis examined the type of admission according to law (voluntary vs. involuntary) and its association with 1) demographic and clinical characteristics of inpatients admitted for the first time, during 1991, and 2) the number and duration of rehospitalizations that took place over the next 10 years. We used Chi-square statistics to test for significance between-group differences in proportions. The predictors of the number of psychiatric rehospitalizations and cumulative time spent in hospitals over the follow-up decade (dependent variables) were estimated by multiple regression models with stepwise forward inclusion of independent variables in the regression equation. These included gender, age and marital status at first admission, years of education, national-religious affiliation, country of origin and time since immigration, and nine ICD-10 diagnostic categories at first discharge, legal status of hospitalization at first admission, and attempted suicide two months before first admission. For all analyses, the level of statistical significance was defined as alpha less than 0.05. All analyses were performed with the SAS 8.2 software for Windows-2000.

## Results

The distribution of demographic and clinical variables between voluntarily and involuntarily admitted inpatients who had their first admission in any of the psychiatric units during the year 1991 is shown in Table 2. Chi-square comparisons of the demographic data were highly significant for all variables studied, with the exception of time since immigration ( $\chi^2=1.86$ ,  $df=2$ , NS) and country of origin ( $\chi^2=6.15$ ,  $df=8$ , NS). In comparison with the voluntarily admitted patients, the involuntarily admitted group included a relatively greater proportion of single males between the ages of 25-44, and of people with a poor level of education.

The two groups differed significantly on all three characteristics studied: 1) *number of hospitalizations*: 60% of involuntarily admitted patients were readmitted more than one time over the follow-up decade compared with 48% of voluntarily admitted

( $\chi^2=39.69$ ,  $df=3$ ,  $p<0.0001$ ); 2) *time spent in hospital*: 22% of involuntarily admitted patients collected more than 365 inpatient days over the decade compared with 15% of their voluntarily admitted counterparts ( $\chi^2=18.91$ ,  $df=3$ ,  $p<0.001$ ); and 3) *ICD-10 diagnostic category*: a greater proportion of the involuntarily admitted patients was diagnosed with schizophrenia while the voluntarily admitted patients had mostly a diagnosis of mood (affective) disorder ( $\chi^2=39.69$ ,  $df=3$ ,  $p<0.0001$ ).

In order to explore a profile of the group at risk for recidivism, multiple regression analysis was performed with the number and duration of rehospitalizations as dependent variables and the independent variables listed in Data analysis section (Table 3). Out of the 17 variables, nine were associated with the number of readmissions (model 1) and eight with cumulative time spent in hospital over the decade (model 2). There were six common variables for both models: ICD-10 diagnostic categories

Table 3. Regression models predicting the number and duration of psychiatric rehospitalization over the 10-year follow-up period from selected clinical and demographic variables

Predictor	Standardized estimation ( $\beta$ )	t-value ( $\beta=0$ )	Probability level	Total % variance accounting for
<b>Number of Rehospitalization model</b>				
Schizophrenia diagnosis	.982	79.56	.0001	3.71
First admission (compulsory)	.835	31.75	.0001	1.46
Time since immigration (yr.)	.894	23.02	.0001	1.05
Education (yr.)	-.009	23.44	.0001	1.05
Marital status (divorced)	.640	5.55	.02	0.25
Age at first admission (yr.)	-.011	7.01	.01	0.31
Affective disorder diagnosis	.756	9.94	.002	0.44
Personality disorder diagnosis	.489	4.45	.04	0.20
Religious affiliation (Jewish)	.494	4.29	.04	0.19
$R^2=9.60$ ; $F=24.15$ , $df=9$ , $p<.0001$				
<b>Duration of Rehospitalization model</b>				
Schizophrenia diagnosis	1.458	219.90	.0001	9.62
Affective disorder diagnosis	.860	57.35	.0001	2.44
Religious affiliation (Jewish)	.688	43.52	.0001	1.82
Marital status (single)	.495	13.44	.001	0.56
Country of origin (Israel)	-.433	23.59	.0001	0.97
Personality disorder diagnosis	.387	9.06	.003	0.37
Attempted suicide*	-.341	8.66	.003	0.35
Marital status (divorced)	.304	3.78	.052	0.15
Marital status (widowed)	.326	3.31	.069	0.13
Education (yr.)	-.002	2.63	.105	0.11
$R^2=16.50$ ; $F=40.70$ , $df=10$ , $p<.0001$				

\* 2 months before first admission

of schizophrenia, affective disorder and personality disorder, years of education, divorced status and Jewish religious affiliation. Age at, and involuntary legal status of the first admission, and time since immigration were associated with the number of rehospitalizations. Single or widowed status, Israeli origin and attempted suicide two months before first admission were associated with the length of hospital stay. These models accounted for 9.6% ( $F=24.15$ ;  $df=9$ ;  $p<0.0001$ ) and 16.5% ( $F=40.70$ ;  $df=10$ ;  $p<0.0001$ ), respectively, of the total variance in the number of rehospitalizations and cumulative inpatient days. In each model, diagnosis of schizophrenia accounted for 3.71% and 9.62%, respectively, of the total variance in the dependent variables. First involuntary admission accounted only for 1.49% of the total variance in the number of rehospitalizations.

## Discussion

The results of this study show that first-in-life involuntary hospitalization is a statistically significant but weak predictor of further psychiatric hospitalizations during the following decade. In addition, it does not predict the duration of hospital stay. This discrepancy might be explained by the fact that involuntary hospitalizations are now ordered according to the criteria laid out in the Mental Health Law, which was introduced in 1991 (23). Since that time, the presence of well-documented and imminent violence or serious physical risk to self or others has become mandatory in order to prolong the involuntary hospitalization beyond 14 days. Difficulties in providing such evidence frequently and substantially shorten the length of involuntary hospitalizations, since few patients agree to convert their involuntary hospitalization to a voluntary one (4). Because we dealt with only those patients whose first hospitalization was involuntary from the beginning to the end, it is very probably that they constitute a self-selected group, including the most uncooperative patients with lack of insight or/and those who are nonresponders to treatment. This deliberate self-limitation allowed us to obtain a homogenous and unbiased group of involuntary patients.

Another explanation of the correlation between involuntary status of first hospitalization and consequent frequent readmissions is that these patients

tend to be noncompliant with treatment and to stop their medication immediately after discharge from hospital, thereby turning themselves into “revolving door” patients (24, 25).

The lack of resources and funds in mental health probably could influence the dropout and re-hospitalization rates of discharged patients, although we do not have systematic data on the outreach procedures in the outpatient care settings. It is indicative, however, that a recent study, investigating six-month outpatient follow-up after hospital discharge, concluded that intensive discharge planning and outreach did not substantially reduce re-hospitalization rates (11). From the legal point of view, contrary to those who try to limit involuntary hospitalizations to the severely dangerous psychotic patients, there are those who propose the introduction of “preventive detention” of dangerous psychiatric patients, as already exists in England (14). This is mainly the request of representatives of the families of the patients, who believe that this approach would reduce harm to the patients and to their environment and would shorten hospital stay. However, this approach is considered by the majority of people to demonstrate a lack of respect for patients’ rights and dignity.

Our findings support data from previous studies, showing that a diagnosis of schizophrenia is a strong predictor of rehospitalizations, involuntary admissions and length of stay (7, 11). One possible explanation is that schizophrenia is the most severe and incapacitating of the mental disorders (26). The literature shows that earlier age of onset is associated with more severe psychopathology, course and outcome (27). Furthermore, young people in the early phases of schizophrenia are less stable than older people (27), and hence they may require more frequent or prolonged hospitalizations. In accordance with that, we also found that early age of onset was a useful predictor of increased number of rehospitalizations.

Among clinical factors predicting length of hospital stay we identified single and widowed marital status and attempted suicide before admission. We suggest that lack of social support from family and social isolation is the constellation that might explain more prolonged cumulative hospital stay. In addition, widowed status is well documented as a

factor increasing suicide risk (26). Likewise, social isolation, loneliness, and inadequate social support are common traits of both patients with schizophrenia and suicidal persons.

In the context of the current mental health reform our results emphasize the importance of developing assertive community programs, enhancing social networks and social supports in an effort to diminish social isolation and to reduce the impact of the factors mentioned above.

Certain limitations of this study should be noted: Selection bias is a common limitation of retrospective database studies. As a rule, these administrative databases contain very limited number of clinical variables and measures, and do not include at all variables reflecting the environmental or situational context in which violent behavior is likely to occur. Likewise, the quality of these data depends on accurate reporting by hospitals. However, unlike most studies which are based on highly selected populations and data sources, this report, relying on a large-scale collection of all first admissions from national population, provides unique information about the implementation of the Mental Health Law, 1991 (23). Although the data were collected over a period of 10 years, the data collection system remained unchanged during this time.

In conclusion, the predictive validity of the first compulsory psychiatric admission is lower than that of diagnosis of schizophrenia or affective disorder, and selected demographic variables. A further study should be conducted focusing on the impact of differential community settings and community rehabilitative treatment models on rehospitalization rates.

## Acknowledgements

The authors thank H. Kargel and R. Yoffe for statistical support, and the Department of Information and Evaluation, Mental Health Services, Ministry of Health, Jerusalem, Israel for the datasets provision. A special thank to Dr. I. Levav for his editing help.

## References

1. Patients' Rights Law, the State of Israel, 1996.
2. Bauer A, Grinshpoon A, Rosca P, Khawaled R, Mester R, Ponizovsky AM. Trends in involuntary psychiatric hospitalizations in Israel 1991-2000. *Br J Psychiatry* 2005 (submitted).
3. Riecher-Rossler A, Rossler W. Compulsory admission of psychiatric patients: An international comparison. *Acta Psychiatr Scand* 1993;87:231-236.
4. Salize HJ, Dressing H. Epidemiology of involuntary placement of mentally ill people across the European Union. *Br J Psychiatry* 2004;184:163-168.
5. Houston KG, Mariotto M. Outcomes for psychiatric patients following first admission: Relationships with voluntary and involuntary treatment and ethnicity. *Psychol Rep* 2001;88:1012-1014.
6. Sanguineti VR, Samuel SE, Schwartz SL, Robeson MR. Retrospective study of 2,200 involuntary psychiatric admissions and readmissions. *Am J Psychiatry* 1996; 153:392-396.
7. Bernardo AC, Forchuk C. Factors associated with readmission to a psychiatric facility. *Psychiatr Serv* 2001;52: 1100-1102.
8. Baron K, Hays JR. Characteristics of readmitted psychiatric inpatients. *Psychol Rep* 2003;93:235-238.
9. Riecher A, Rossler W, Loffler W, Fatkenheuer B. Factors influencing compulsory admission of psychiatric patients. *Psychol Med* 1991;21:197-208.
10. Feigon S, Hays JR. Prediction of readmission of psychiatric inpatients. *Psychol Rep.* 2003;93:816-818.
11. Cuffel BJ, Held M, Goldman W. Predictive models and the effectiveness of strategies for improving outpatient follow-up under managed care. *Psychiatr Serv* 2002;53: 1438-1443.
12. Haywood TW, Kravitz HM, Grossman LS, Cavanaugh JL Jr., Davis JM, Lewis DA. Predicting the "revolving door" phenomenon among patients with schizophrenic, schizoaffective, and affective disorders. *Am J Psychiatry* 1995;152:856-861.
13. Chang CM, Lee Y, Lee Y, Yang MJ, Wen JK. Predictors of readmission to a medical-psychiatric unit among patients with minor mental disorders. *Chang Gung Med J* 2001;24:34-43.
14. Miller DJ, Beck NC, Fraps C. Predicting rehospitalization at a community mental health center: A double cross validation. *J Clin Psychol* 1984;40:35-39.
15. Kendell RE. The distinction between personality disorder and mental illness. *Br J Psychiatry* 2002;180:110-115.
16. Sipos A, Harrison G, Gunnell D, Amin S, Singh S. Patterns and predictors of hospitalization in first-episode psychosis. *Br J Psychiatry* 2001;178:518-523.
17. Munk-Jorgensen P, Mortensen PB, Machon RA. Hospitalization patterns in schizophrenia. A 13-year follow-up. *Schizophr Res* 1991;4:1-9.

18. Colenda CC, Hamer RM. First admission young patients to a state hospital: Relative risk for rapid readmission. *Psychiatr Q* 1989;60:227-236.
19. Figueroa R, Harman J, Engberg J. Use of claims data to examine the impact of length of in-patient psychiatric stay on readmission rate. *Psychiatr Serv* 2004;55:560-565.
20. Klinkenberg WD, Calsyn RJ. Predictors of receipt of aftercare and recidivism among persons with severe mental illness: A review. *Psychiatr Serv* 1996;47:487-496.
21. Fennig S, Rabinowitz J, Fennig S. Involuntary first admission of patients with schizophrenia as a predictor of future admissions. *Psychiatr Serv* 1999;50:1049-1052.
22. Lichtenberg P, Kaplan Z, Grinshpoon A. The goals and limitations of Israel's Psychiatric Case Register. *Psychiatr Serv* 1999;50:1043-1048.
23. Mental Health Law, the State of Israel, 1991.
24. Craig TJ, Fennig S, Tanenberg-Karant M, Bromet EJ. Rapid versus delayed readmission in first-admission psychosis: Quality indicators for managed care? *Ann Clin Psychiatry* 2000;12:233-238.
25. Ram R, Bromet EJ, Eaton WW, Pato C, Schwartz JE. The natural course of schizophrenia: A review of first-admission studies. *Schizophr Bull* 1992;18:185-207.
26. Gooch C, Leff J. Factors affecting the success of community placement: The TAPS Project 26. *Psychol Med* 1996;26:511-520.
27. Kposowa AJ. Marital status and suicide in the National Longitudinal Mortality Study. *J Epidemiol Community Health* 2000;54:254-261.