

Functional remission and employment among patients with schizophrenia in Malaysia

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Abstract

Objective: The study aimed to determine the rates of functional remission and employment as well as the factors associated with functional remission among patients with Schizophrenia, receiving community psychiatric service in an urban setting in Malaysia.

Methods: From a total of 250 patients randomly selected, 155 fulfilled the study requirement and were assessed on their functional remission status using the Personal and Social Performance Scale. The relationships between functional remission and socio-demographic factors, clinical factors, social support, symptom remission and rates of hospitalization were examined.

Results: The results revealed that 74% (n = 115) of the respondents had functional remission with only 20% (n = 31) currently employed. Functional remission was found to be significantly associated with good social support (84.4% versus 36.4% p < 0.001, OR = 9.487 [95% CI = 4.008–22.457]); shorter illness duration of less than 10 years (81.2% versus 66.7% p = 0.038, OR = 2.167 [95% CI = 1.035–4.535]); good medication compliance (79.1% versus 50.0% p = 0.002, OR = 3.778 [95% CI = 1.570–9.090]); hospital admissions of lower than 3 per year (80.5% versus 44.4% p < 0.001 OR = 5.150 [95% CI = 2.145–12.365]) and; symptomatic remission (87.3% versus 37.4% p < 0.001 [95% CI = 0.070 (0.029–0.168)]). A multiple regression analysis revealed only social support, lower hospitalization rate and symptom remission, as significant predictors of functional remission.

Conclusion: A majority of patients with Schizophrenia in this study achieved functional remission, however, only a small percentage of them were employed. Functional remission was influenced by severity of illness and levels of social support in these patients.

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1. Introduction

The concept of recovery in schizophrenia has been extended beyond symptom remission to recovery of functioning. Employment as one of the major areas of functioning has been taken as one of the goals in the management of schizophrenia. This emphasis grew out of

the high unemployment rates among this group of people causing a high burden to the patients, families and countries. The rates of unemployment were reported to be as high as 80%–90% in Europe [1], and 75%–85% in the United States [2,3] even in the context that most people with SMIs consistently expressed their keenness to work [2,4].

In Malaysia, according to the National Schizophrenia Registry for 2003 and 2004, 50% of patients with Schizophrenia were unemployed during their first contact with Psychiatric services [5]. This finding was replicated in another study among people with schizophrenia attending an outpatient clinic setting [6]. This lower rate compared to those of the Western countries may be partly due to the studies employing a looser term of employment. In the first study, only 17% of were in full-time employment, while the

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rest were in some forms of employment [5]. These two studies also presumably focussed on the less disabled group of patients based on their study setting.

Patients who are referred to the community psychiatric services are typically more disabled with more complex illness and psychosocial needs. In Malaysia, community psychiatric service (CPS) has slowly developed since 1990s [7] with the main purpose of reducing hospital admission as a result of inadequate bed numbers. It caters to patients with multiple readmissions due to many reasons such as having poor insight towards illness leading to poor compliance towards medication, having poor support from the caregivers or having many unmet needs. It is now a part of the national service development strategies [8]. In the Malaysian model, community psychiatric team members are based in the hospitals where psychiatric resources are located unlike in the western models where services are based at community mental health centers, equipped with better levels of resources and provide more comprehensive services [9,10]. The hospital-based community psychiatric service (HCPS) in Malaysia, generally has larger patients load and does not operate after office hours [11] because of limitations in resources.

To date, no study has ever looked into the functional remission or employment among patients receiving this relatively new service in Malaysia. Thus, the main aim of the present study was to determine the rates of functional remission and employment as well as the factors associated with functional remission among patients with Schizophrenia receiving HCPS in an urban setting of Kuala Lumpur. The results from this study may be useful in informing further service development.

2. Materials and methods

2.1. Study design, setting and subjects

This cross sectional study was conducted among patients with Schizophrenia, who had received HCPS for at least one year in the largest general hospital in Malaysia i.e. Hospital Kuala Lumpur (HKL), located at the centre of metropolitan city of Kuala Lumpur. Its community psychiatry service caters to patients with severe mental illnesses within a catchment area of 30 km radius from the hospital. Simple random sampling was employed, and data collection was done within a 3-month period from February to May 2010.

The service team was multidisciplinary in nature, offering community service from 8 am to 5 pm. They typically started work on any day with a team meeting to discuss the management and progress of the patients receiving active interventions in the community. The team had 11 case managers who were trained psychiatric nurses and medical assistants. Each case manager managed approximately 40 patients [12].

Generally, those with frequent admissions of 3 or more per year were managed by this team. The team treated an average

of 500 patients per month. The services were individualized and the intensity depended on the needs of each patient based on the severity of the psychiatric symptoms and functional capacity especially of self-care and social support [12].

All patients who met the study requirement based on the inclusion and exclusion criteria were recruited into the study. The inclusion criteria were: (i) Having diagnosis of schizophrenia based on DSM-IV(TR) by consultant psychiatrists, (ii) Having received home care for at least one year, (iii) Age between 18 and 60 years; (iv) Consenting to participate. Exclusion criterion was: (i) those who refused to give consent. Information was gathered through interviews during the home visits and from the medical records. Approval from the ethics committee was obtained prior to conducting the study.

The case notes of 553 patients receiving the community service at the time of the study were screened for suitability to participate in the study. Out of this, 303 fulfilled the exclusion criteria where 243 had received the service for less than one year and 60 had other diagnosis than schizophrenia. A simple random sampling was done on the remaining 250 eligible patients, however, 8 refused consent and 15 were admitted in a mental hospital and 2 did not complete the questionnaire, leaving the final sample of 155.

2.2. Study instruments and procedures

2.2.1. Socio-demographic questionnaires

The socio-demographic questionnaire was devised to obtain information from patients regarding their socio-demographic variables such as age, gender, ethnicity, marital status, education, employment and total income. Other relevant social variables that were included in the questionnaire were: family and social support.

Family support was assessed with two main questions on: (i) Monitoring treatment — with the response options of *yes*, *not bothered*, and *seldom*; and (ii) Support for rehabilitation — with the response options of *giving support* and *not bothered*. Family support was rated as good if the responses were *yes* and *giving support* for item 1 and 2 respectively. Social support was measured based on 3 items with response options as the following: (i) Relationship with neighbor — *good* and *poor*; (ii) Neighbour/community support — *accepting and helping patient*, *accepting their presence in the community* or *not accepting patient in the community*; (iii) Patient's involvement in the social activities — *involved in activity/activities*, *isolate him/herself* or *involvement in activity/ies not allowed*. Social support was considered good when it was rated as *good* for item 1 and either *accepting and helping patient* or *accepting their presence in the community* for item 2 and *involved in the activity/ies* for item 3. Information on family and social support was obtained from a key family member, taking into account, judgment from case managers.

2.3. Personal and Social Performance (PSP)

The PSP [13] measured routine social functioning. It contained four main areas namely socially useful

activities, personal and social relationships, self-care, as well as disturbing and aggressive behavior [13]. It is a recommended tool among the others to measure social functioning outcomes in schizophrenia [14]. The PSP was evaluated according to the rating for individual items in 4 domains; each item was rated using a six-point scale from *absent* to *very severe*, where lower ratings indicated better functioning. These ratings become a guide in obtaining the total score that ranges from 0 to 100 with higher scores indicating better functioning. One of the authors who collected the data had attended several training on the use of the questionnaire prior to conducting this study and reliability analysis was also performed for the present study.

2.4. Brief Psychiatric Rating Scale (BPRS)

The BPRS [15] is an 18-item scale measuring positive symptoms, general psychopathology and affective symptoms. Each item is rated on a seven-point scale from *not present* to *extremely severe*. It is among the most researched instruments used in the evaluation of patients with schizophrenia. The psychometric properties such as reliability, validity and sensitivity have been extensively examined [16]. It should be administered by a clinician who is knowledgeable concerning psychotic disorders and able to interpret the constructs used in the instrument. Furthermore, it is the individual behavior over the previous 2–3 days and this can be reported by the patient's family member.

In this study, the abbreviated BPRS was administered to determine the status of symptomatic remission. This was in accordance with the Remission in Schizophrenia Working Group [17] where symptom remission is defined as simultaneous attainment of a score of 3 or less for the items on 3 dimensions of psychopathology (Psychoticism (items no 8, 11, 15, 120); disorganization (items no 4, 7) and negative symptoms (item no 16) for a minimum duration of 6 months).

2.5. Statistical analyses

Data were entered into SPSS version 15. The main outcome of the study was functional remission of the respondents which was defined as a score above 60 from the total score of functionality as measured using the PSP based on a previous study measuring functional remission [18]. Readmission per patient was treated as a binary variable (high rate versus low rate). Readmission of 3 and more in the past 1 year was considered as *high rate* and below 3 as *low rate*. All variables were found to be non-normally distributed. Hence, functional remission was compared between socio-demographic and clinical groups using the Chi-square (for categorical variables) and Mann Whitney U test (for continuous variables). After bivariate analysis, independent predictive factors were determined using logistic regression. Significance level was set at $p < 0.05$.

3. Results

A total of 155 patients participated in the study. The socio-demographic and clinical characteristics of the subjects were described elsewhere [19]. A majority of them were between 20 and 49 years old (61%, $n = 95$), male (72%, $n = 112$) and never married (72%, $n = 111$). Most (76%, $n = 117$) had completed between 7 and 11 years of schooling. The median (IQR) total family income was RM 1000 (600–1500), where RM 1000 is equivalent to USD 300. In terms of clinical characteristics, the median (IQR) duration of illness was 10 (6–18) years and duration of receiving ACT 3 (2–5) years. Most (90%, $n = 140$) had less than 3 hospitalizations within the past one year and 67% ($n = 94$) were on combination of oral and depot antipsychotics. The median (IQR) total PSP score was 66(57–76). A majority of the patients (74%, $n = 115$) had functional remission. Only 20% ($n = 31$) of the respondents were currently employed.

Table 1 shows the relationship between socio-demographic and clinical variables with functional remission. Functional remission was found to be significantly associated with good social support (84.4% versus 36.4% $p < 0.001$, OR = 9.487 [95% CI = 4.008–22.457]); shorter illness duration of less than 10 years (81.2% versus 66.7% $p = 0.038$, OR = 2.167 [95% CI = 1.035–4.535]); good medication compliance (79.1% versus 50.0% $p = 0.002$, OR = 3.778 [95% CI = 1.570–9.090]); hospital admissions of lower than 3 per year (80.5% versus 44.4% $p < 0.001$ OR = 5.150 [95% CI = 2.145–12.365]) and; symptomatic remission (87.3% versus 37.4% $p < 0.001$ [95% CI = 0.070 (0.029–0.168)]. When these variables were entered into a multiple regression model, only good social support, lower hospitalization rate and symptom remission, were found to be significant predictors of functional remission (Table 2).

4. Discussion

One important finding observed in the present study was the high rate (74%, $n = 115$) of functional remission among patients with schizophrenia receiving community psychiatric service. However, this high rate of functional remission did not match with the rate of employment, at 20% ($n = 39$). This is in contrast to the national labour force participation rate of 65% and the general unemployment rate of 3% [20]. Malaysia is a country where job opportunities are considered high based on the increasing need of work agencies to recruit foreign workers every year [21].

It is true that functional remission is not equal to capacity for employment but the big gap between both rates may imply other factors as potential explanations. The patients' interest in work which was not measured in this study may offer one explanation. It may also be possible that these patients were ready and keen for work but could not get access to opportunities for employment. Important to note,

Table 1
Association between clinical factors and functional remission.

Socio-demographic	Functionality		p value	OR (95% CI)
	Remission	Non-remission		
	n (%) / Median (IQR)	n (%) / Median (IQR)		
Age	34 (28.5–44)	37.5 (29.5–43)	0.620 ^a	
Gender				
Male	80 (71.4)	32 (28.6)	0.204 ^b	0.571 (0.239–1.365)
Female	35 (81.4)	8 (18.6)		
Ethnic				
Malay	83 (76.1)	26 (23.9)	0.392 ^b	1.397 (0.649–3.008)
Other ethnics	32 (69.6)	14 (30.4)		
Marital status				
Married	18 (75.0)	6 (25.0)	0.922 ^b	1.052 (0.386–2.867)
Other status	97 (74.0)	34 (26.0)		
Educational Level				
≥ Secondary	103 (75.7)	33 (24.3)	0.241 ^b	1.821 (0.662–5.005)
≤ Primary	12 (63.2)	7 (36.8)		
Employment Status				
Presently employed	33 (84.6)	4 (15.4)	0.086 ^b	2.280 (0.876–5.940)
Presently unemployed	82 (70.7)	34 (29.3)		
Total family income (RM)	1000 (750–1500)	900 (500–1500)	0.099 ^a	
Social support				
Good	103 (84.4)	19 (15.6)	<0.001 ^b	9.487 (4.008–22.457)
Poor	12 (36.4)	21 (63.6)		
Family support				
Yes	110 (75.9)	35 (24.1)	0.071 ^b	3.143 (0.859–11.493)
No	5 (50.0)	5 (50.0)		
Illness duration (years)				
Shorter (< 10)	65 (81.2)	15 (18.8)	0.038 ^b	2.167 (1.035–4.535)
Longer (≥ 10)	50 (66.7)	25 (33.3)		
Duration of receiving ACT (years)				
Longer (≥ 5)	74 (77.1)	22 (22.9)	0.294 ^b	1.477 (0.711–3.066)
Shorter (< 5)	41 (69.5)	18 (30.5)		
Antipsychotics				
Oral (Atypical/Typical)	78 (77.1)	29 (22.9)	0.582 ^b	0.800 (0.360–1.774)
Conventional depot/Combination	37 (69.5)	11 (30.5)		
Medication compliance				
Yes	102 (79.1)	27 (20.9)	<0.002	3.778 (1.570–9.090)
No	13 (50.0)	13 (50.0)		
Substance involvement				
Yes	42 (70.0)	18 (30.0)	0.342 ^b	0.703 (0.339–1.458)
No	73 (76.8)	22 (23.2)		
Hospitalization rates (adm/patient/year)				
Low (<3)	103 (80.5)	25 (19.5)	<0.001 ^b	5.150 (2.145–12.365)
High (≥3)	12 (44.4)	15 (55.6)		
Symptoms remission (BPRS)				
Yes	103 (87.3)	15 (12.7)	<0.001 ^b	0.070 (0.029–0.168)
No	12 (32.4)	25 (67.6)		

^a Mann Whitney test.

^b Pearson chi square.

work opportunities and work-related support system for patients with severe mental illness are still lacking in Malaysia. To the best of our knowledge, there has not been any study which has ventured to look into the employers' level of acceptance of patients with mental illnesses, to date. However, the public attitude towards people with mental illness is generally unfavorable [22]. It seems that employment opportunities for this group of people need to be initiated and supported by the mental health agencies rather than depending totally on the mainstream employment

agencies. In the study setting, there is currently no specific employment program provided for this group of patients. Attempts to set up employment program at other places in Malaysia for this group of patients, seem to yield encouraging results despite the general initial resistance from potential employers.

In this study, several factors were observed to be significant predictors of functional remission in the studied sample. Good social support was found to be the strongest predictor of functional remission. This finding is consistent

Table 2
Predictors of functional remission from a logistic regression test.

	B	Std Error	Wald	Exp (B)	p value	95% CI for B
Social support						
Good	1.791	0.589	9.245	5.994	<0.002	1.890–19.015
Poor						
Illness duration (years)						
Shorter (< 10)	–0.073	0.507	0.021	0.992	0.885	0.344–2.513
Longer (≥ 10)						
Medication compliance						
Yes	0.590	0.635	0.862	1.803	0.353	0.519–6.259
No						
Hospitalization rates						
Low (<3)	1.342	0.604	4.928	3.826	0.026	1.170–12.508
High (≥3)						
Symptom remission						
Yes	1.103	0.715	2.383	3.013	<0.001	0.743–12.225
No						

with findings from previous studies [23,24]. Social support serves as a protection against symptoms and improves life satisfaction among people with mental illness [23]. Among people with severe mental illness receiving community services, social support from case managers was reported to improve respondents' subjective overall life satisfaction [24]. In this study, social support was measured through subjective report from a key carer and case manager and covered the areas of relationship with the people in the neighborhood, their acceptance of the patient and patients' involvement in social activities. While the result from this study is tampered with the limitation of the use of a self-developed measurement of social support, it may serve as a preliminary finding that warrants more in-depth studies on this important area.

Similar to the findings reported in several past studies [25–27], the present study found symptom remission as a significant predictor of functional remission. Brissos et al., 2011 [25], in a similar cross-sectional study, reported that symptom remission was found to be associated with better social functioning. Another study by Breier et al., 1991 [26] was a longitudinal study on 58 young patients over 2 to 12 years and it also reported a similar finding. On a similar note, a study reported strong correlation between symptomatology and levels of disability [28]. This indicates symptomatology and functionality go hand-in-hand and rightfully should be included in the definition of recovery. On the other hand, symptomatology has been inconsistent in predicting capacity for employment and work performance. Several studies observed symptomatology to have an influence either on work skills during rehabilitation, employment and work performance [29–31]. However, as concluded by Tsang et al., 2000 [32] in his review paper involving 35 controlled studies, symptomatology showed inconsistent relationship with employment outcome.

Lower hospitalization rate was also found to be a significant predictor of functional remission in this study. While information on this factor as a predictor of functional

remission is scarce, hospitalization was reported to have an influence on employment outcome [33–35]. Razanno et al., 2005 [33], in their study on outpatient population, reported recent hospitalization besides other factors were consistently associated with poor employment outcome. This finding was echoed by Honkonen et al., 2007 [34] on a sample of discharged long-stay patients. A cross-sectional study in Saudi Arabia [35], showed frequent hospitalization among others contributed to unfit for work. It can be concluded from this study, that the severity of illness in terms of lower hospitalization rate and symptomatic remission has some influence on the functional remission. Other factors which also reflect illness severity i.e. shorter illness duration and medication compliance were also showing near-significant trend in association to functional remission.

The findings from this study need to be interpreted in light of a few limitations faced by the study. The measurement of social support using a self-developed questionnaire may pose a problem in the validity of the result. Judging from the significant association found between social support and functional remission, it would be worthwhile for future studies to explore the area using validated measurement tools. Similar issue applies to the measurement of medication compliance and substance involvement, where the former was assessed using the clinical judgment of the case managers and the latter based on the patients' report. Secondly, the cross-sectional design of the study limits the interpretation of the findings in terms of whether community psychiatric service has any role in mediating functional remission in the studied patients.

5. Conclusion

From this study, a majority of patients with Schizophrenia receiving community psychiatric service were observed to achieve a state of functional remission, however, most of them were unemployed. It is time for community mental

health teams in Kuala Lumpur to expand their services and establish employment program as part of recovery-oriented services. Lesser severity of illness was a significant influence of functional remission in these patients. This may indicate the need to optimize illness management as one of the areas of priority in service delivery. Social support is an area worthwhile to be explored in future studies to inform further development of community psychiatric service. As the present study focused on one metropolitan city in Malaysia, it would be recommended for future studies assessing employment and functionality in this group of people to include other areas, including rural areas, to see the whole scenario in the country.

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