International journal of child development and mental health
ISSN: 2286 - 7481; E-ISSN: 2586-887X
Vol. 11 No. 1 January – June 2023 (11-20)

Predictors of Participation and Effectiveness in Community-based Psychiatric Rehabilitation Program in People with Severe Mental Illness

Yi-chia Liu[1,2], Ching-lin Chu[1,3], Pai-chuan Huang[1,2], Tsung-hua Lu[1], Kao-chin Chen[1], Wei-yun Hsu[1], Shih-hsien Lin[1,4], Yen-kuang Yang[1,4,5*]

[1] Department of Psychiatry, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan.
[2] Department of Occupational Therapy, College of Medicine, National Cheng Kung University, Tainan, Taiwan.
[3] Department of Educational Psychiatry & Counseling, National Pingtung University, Pingtung, Taiwan.
[4] Institute of Behavioral Medicine, College of Medicine, National Cheng Kung University, Tainan, Taiwan
[5] Department of Psychiatry, Tainan Hospital, Ministry of Health and Welfare, Tainan, Taiwan.
.

How to Cite: Liu Y.-c., Chu C.-L., Huang P.-C., Lu T.-H., Chen K.C., Hsu W.-Y., Yang Y.K.(2023). Predictors of Participation and Effectiveness in Community-based Psychiatric Rehabilitation Program in People with Severe Mental Illness. *International Journal of Child Development and Mental Health, 11*(1), 11-20.

***Corresponding author:**
Email: ykyang@mail.ncku.edu.tw

Article Info:
Received: 4 January 2023
1st Revision: 16 March 2023
Accepted: 25 May 2023

Abstract

The effectiveness of a community-based psychiatric rehabilitation (CBPR) program had been proven for people with severe mental illness (SMI), but a high discontinuation rate was also noted. The aim of this study was to explore predictors of utilization and outcome of the CBPR program. This retrospective design explored predictors of the program utilization. The data of demographics, illness history, and occupational functioning were collected during an 8-year period and after 2 years follow-up. 162 participants were referred. Forty nine participants (30.25%) refused to participate in (non-attendance group) and 113 (69.75%) attendance in the program (rehabilitation utilizing group). Compared to the non-attendance group, the rehabilitation utilizing group had single status, higher education level, younger age of onset, lived during the hospital-based day center services, a higher proportion of day center services referral, work experience prior to onset, and less than 3 months consecutive work experience prior to onset. Furthermore, the individuals in the rehabilitation utilizing group had higher successfully return to the community and significantly lower acute hospitalization at 1 and 2 years follow-up. In addition to the demographic factors, that individuals' previous and current occupational functioning were potential factors for those who successfully attended CBPR service. CBPR may be beneficial to people with SMI in prompted occupational functioning and reduced relapse. We should consider the factors, and make corresponding plans to support engagement in recovery and wellness for people with mental illness.

Keywords:
Community-based psychiatric rehabilitation, Retrospective design, Severe mental disorder, Utilization of mental services, Outcome.

Introduction

Community-based psychiatric rehabilitation (CBPR) was a model of care that had been widely used for people with severe mental illness (SMI). Previous work had shown that CBPR programs provided significant benefits and improvements for the participants (Pratt CW, 2014). Positive results, revealed by studies involving various CBPR programs, include reductions in symptoms and relapse, better quality of life, and greater functional improvement in terms of social, work, independent living outcomes (Lundqvist, Ivarsson, Brunt, Rask, & Schröder, 2016; McKay, Nugent, Johnsen, Eaton, & Lidz, 2018). Putting the pursuit for cure from an illness aside, the concept of recovery embedded in CBPR programs focus on empowerment and meaningful occupation participation. Valuing occupation-based participation implies that rehabilitation programs emphasize successful engagement in meaningful daily activities, such as work, home maintenance, leisure, and self-care. Thus well-being and independence of adults with SMI would be improved by living a balanced and satisfying life (Leufstadius, 2018).

In order to achieve a better outcome for people with SMI who had just recovered from their first episode, being able to utilize a CBPR service at the earliest point possible is particularly crucial (Killackey, Jackson, Gleeson, Hickie, & McGorry, 2006; McKay et al., 2018). Unfortunately, such services were still greatly under-utilized (Fleury, Grenier, Bamvita, & Caron, 2011). For example, the National Health Insurance program in Taiwan has provided and reimbursed the services, that promoted CBPR, in community rehabilitation centers and half-way houses since 1995, but the utilization rate of the targeted population was still as low as 7% after more than a decade (Chen, 2014). In CBPR program efficacy studies addressing lower non-engagement rates in clinical practice, researchers rarely discussed and explored the underlying reasons for discontinuation of CBPR program except demographics (Schofield et al., 2011). Service engagement of individuals with SMI in need of rehabilitation remains a challenge (Bond & Drake, 2017). In order to increase the usage rate of a CBPR service, comparing the characteristics of people who fail to attend versus who successfully utilize the service would provide us insights as to how to change this difficult situation. To our knowledge, some studies looked into predictors of better outcomes after treatments (Kurtz, Wexler, Fujimoto, Shagan, & Seltzer, 2008), but few studies specifically investigated the characteristic profile of drop-outs versus remainders. Kurtz et al. (2011) reviewed one hundred and twenty-seven people with schizophrenia or schizoaffective disorder to explore the predictors of drop-out from a community outpatient psychosocial rehabilitation program. Among demographic variables of age, sex, education, and race/ethnicity, symptom measures, and a series of neurocognitive assessment, they identified younger age, and lower verbal fluency in clients with a history of higher number of hospitalizations to be predictors of a greater likelihood of drop-out from the program. Shim et al. (2017) found that, among their African Americans sample, having an alcohol use disorder was associated with lower rate of mental health follow up attendance. At this stage, the existing literature so far is too scarce to see the whole picture, even fewer studies had been performed in Asian populations (Akiyama et al., 2008; Chatterjee, Pillai, Jain, Cohen, & Patel, 2009). Thus, this study intended to provide our own clinical-based evidence to contribute. Based on clinical observation, in addition to demographic factors, we suspect that individuals' experiences regarding illness history and work might be potential factors. Therefore, this study also included illness history (i.e. acute ward entry, day care center participation, community rehabilitation participation, and referral source) and occupational functioning (i.e. past work experience and current work status) as variables. After considering the results of effectiveness, we also compared refused or attend groups for relapse and rehospitalization outcomes after the 6, 12, and 24 months follow-ups.

Objectives

To explore the factors that might distinguish the group who refused to attend to versus the group who remained in a CBPR program in a naturalistic setting,

this study analyzed practice-based data and aimed to compare the differences between the two groups, compared variables included (i) demographics & work experience, (ii) occupational functioning, and (iii) rehospitalization rate over a 2-years period after the CPBR program. This study also explored (iv) significant predicting factors for remaining in the program. Therefore, it was hoped that through this study: (i) Understand the willingness to participate in rehabilitation at the outset of the people, it will be helpful for rehabilitation after the outcome. (ii) Provided to support engagement in recovery and wellness through occupational performance. Hopefully in the future, it may be increased for people with SMI the sufficiency of community participation.

Materials and methods

Participants and procedure

This is a single center naturalistic study. The data were all collected in a rehabilitation center in a university hospital in Taiwan. Practice-based data were analysed by reviewing charts over an 8-year period retrospectively at one clinical site. Included participants were clients with DSM-IV/DSM-5 diagnoses of mental. Medical and related administrative work records of participants who were referred to a CBPR program from January, 2011 to June 2018 and 2-years follow-up (to June 2020) after entering the CBPR program were reviewed (Figure 1). This study was approved by a local institutional review board. The review was administered by a coder who was graduate students of Occupational Therapy and had received prior training on coding. The referral sources included (i) the university or regional hospital, (ii) the Vocational Training and Employment Services Center of City government. In total, 162 participants who were eligible to attend this program and had been referred were selected for review. Among them, 35 participants who were referral repeatedly during the eight years and the data of their first referral time was used as the baseline for analysis. Participant characteristics including demographic data, illness history, referral sources, and occupational functioning were collected. The occupational functioning included work experience and the highest employment level prior to onset and after the first episode of the illness. The employment level classification was based on the definition of Dictionary of Occupational Titles (DOT), a publication of Department of Labor of the Republic of China (Standard occupational classification system of the Republic of China, 2010). The four grades from high (level 4) to low (level 1) were as follows: level 4 as professionals (elected representatives, administrative or business executives, managers, and professionals), level 3 as technicians and assistant professionals, level 2 as technical workers (affairs, services, agriculture, forestry, fisheries and animal husbandry-related work personnel, technical workers and operators and assembly workers), and level 1 as non-technical and manual workers.

The community-based psychiatric rehabilitation program

The CBPR program was based on the laws regulated by the Mental Health Act and monitored by the Ministry of Health and Welfare of Taiwan Government. Participants who agreed to attend the program would follow a daily schedule. Prior to officially being enrolled in the program, there was a 2-weeks trial period. Our program was defined as daytime attendance at a non-medical services day setting, emphasizing recovery-oriented approach, that involved creating person-centered services enhancing daily living and work-oriented engagement. The purpose of this psychiatric rehabilitation was to assist people with SMI to adapt to social life gradually, by providing support in building work ability, work attitude, psychological reconstruction, ability to manage daily life. Our program also included several types of sheltered and supported employment, such as book rental clerk job, meals and dessert preparation, meal delivery, cleaning, document processing, and general affairs.

Data analysis

In terms of the pre-referral characteristics of the participants, the t test was conducted for continuous variables. The $\chi 2$ test and Fisher's exact test were used for categorical variables. The logistic

regression analysis was conducted to investigate significant predicting factors for remaining in the CBPR program. The level of significance was set at $p < 0.05$ (two-tailed). All analyses were performed using SPSS software (version 17.0, SPSS Inc., Chicago, IL, USA).

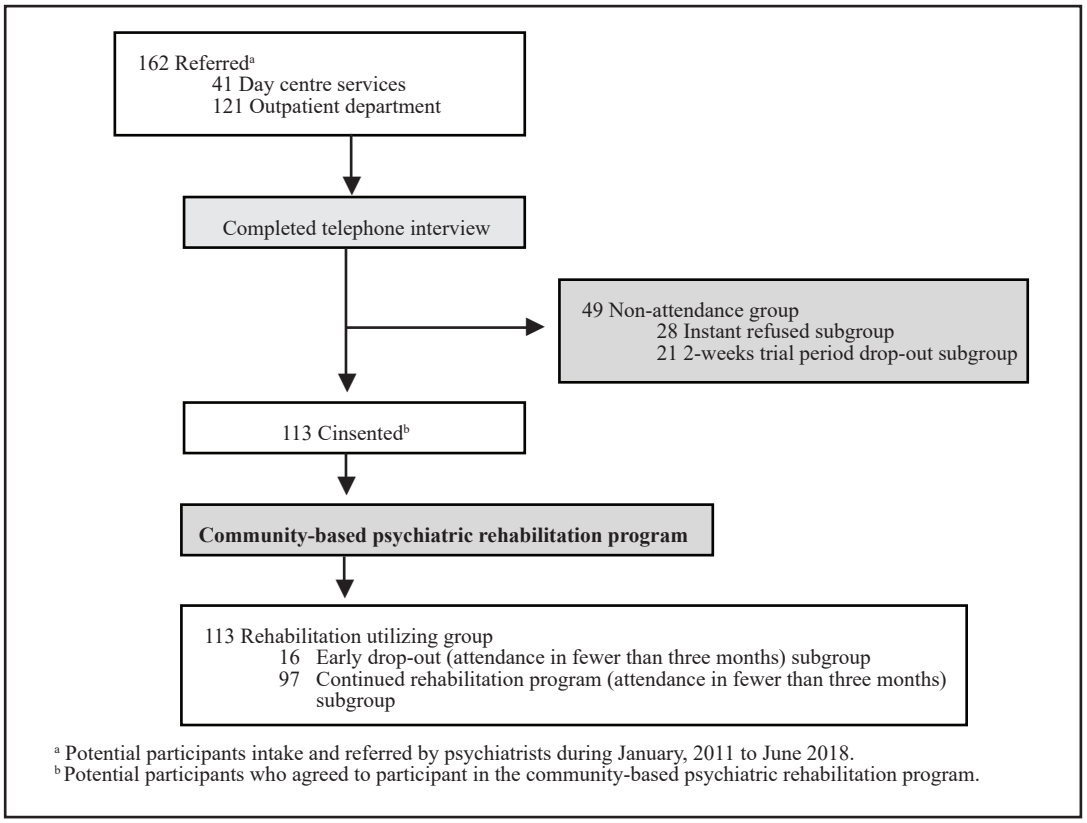

Figure 1. Flow diagram of study participants.

Table 1: Demographics and illness history of the participants.

	Non-attendance group (n = 49)	***Rehabilitation utilizing group (n = 113)***	***Statistics***	
	number (%)	**number (%)**	**t /χ2**	*p*
Age (years), mean (SD)[a]	36.62 (9.88)	34.73 (9.07)	1.17	0.24
Gender			0.04	0.84
female	29 (59.2%)	65 (57.5%)		
male	20 (40.8%)	48 (42.5%)		
Education[b]			10.56	0.01*
elementary and Secondary school	8 (17.4%)	7 (6.2%)		
high school	25 (54.3%)	45 (39.8%)		
university and above	13 (28.3%)	61 (54.0%)		

	Non-attendance group (n = 49)	*Rehabilitation utilizing group (n = 113)*	*Statistics*	
	number (%)	**number (%)**	**t /χ2**	*p*
Marital status			7.17	0.01*
single	35 (71.4%)	100 (88.5%)		
married and other	14 (28.6%)	13 (11.5%)		
Primary caregiver			3.23	0.07
parent	32 (65.3%)	89 (78.8%)		
other	17 (34.7%)	24 (21.2%)		
Diagnosis			2.98	0.23
schizophrenia/schizoaffective	27 (55.1%)	78 (69.1%)		
affective disorder	19 (38.8%)	31 (27.4%)		
others	3 (6.1%)	4 (3.5%)		
Onset of age (years), mean (SD)[b]	26.00 (9.02)	22.24 (7.22)	2.52	0.01*
Episodic frequency, mean (SD)[a]	3.64 (6.47)	3.36 (3.18)	0.36	0.72
Acute ward			5.29	0.07
ever	38 (80.9%)	97 (85.8%)		
never	9 (19.1%)	16 (14.2%)		
Day center services			13.90	<0.001**
ever	13 (26.5%)	66 (58.4%)		
never	36 (73.5%)	47 (41.6%)		
Community rehabilitation			2.56	0.11
ever	7 (14.3%)	29 (25.7%)		
never	42 (85.7%)	84 (74.3%)		
Referral source			23.80	<0.001**
day center services	0 (0%)	41 (36.3%)		
outpatient department and other	49 (100%)	72 (63.7%)		

Note 1. Due to missing data (non-attendance group), an = 47; bn = 46.
Note 2. The F-test for unequal variance on the age is 0.43, p = 0.51. The degree of freedom was not adjusted, as the equal variance is not violated, even the sample size is unequal.
p < 0.05;p < 0.01*

Results

Among all referred clients, forty-nine clients (30.25%) refused or failed to participate in the program (non-attendance group). Reasons included instant refused (initial lack of motivation, n = 22; disease instability, n = 6) and drop-out within the 2-weeks trial period (n = 21). On the other hand, the total number of the attendances of the program (rehabilitation utilizing group) was 113 (69.75%). Demographic characteristics of the two groups were shown in Table 1. A subsequent analysis explored what factors differentiated the two groups. There were significant differences in education, marital status, onset of age, prior experience of hospital-based day center services, and referral sources. The rehabilitation utilizing group had a significantly

higher education (university and above: 54.0% vs. 28.3%, p = 0.01), single status (88.5% vs. 71.4%, p = 0.01), younger onset age (22.24 y/o vs. 26.00 y/o, p = 0.01). A significantly higher proportion of them had had experience utilizing day center service (58.4% vs. 26.5%, $p < 0.001$) and were referred from the day center service (36.3% vs. 0%, $p < 0.001$). There were no other significant differences between the two groups (Table 1). When comparing the occupational functioning between the two groups, results showed that the percentages of having "work experience prior to onset" (55.1% vs. 36.3%, p = 0.03) and "at least 3 months consecutive working experience prior to onset" (53.1% vs. 34.5%, p = 0.03) were significantly higher in the non-attendance group. In addition, the percentage of participants who had "at least 3 months consecutive work experience after first episode" was higher in the rehabilitation utilizing group (44.2% vs. 31.9%, p = 0.04) (Table 2).Considering the best working ability before and after the illness, six people (12.5%) of the non-attendance group were engaged in level 1 grade work experience before illness, fourteen people (29.2%) in level 2, four people (8.3%) in level 3, two people (4.2%) in level 4. One person (0.9%) of the rehabilitation utilizing group was engaged in level 1 work experience before illness, twenty-six people (23.0%) in level 2, and nine people (6.2% each) in level 3 and 4 people. About the people of highest employment level after first episode, ten people (21.3%) were level 1, thirteen people (27.7%) in level 2, one person each in level 3 and 4 (2.1% each) in the non-attendance group. In the rehabilitation utilizing group, there were seven people (6.2%) in level 1, fifty-six people (49.6%) in level 2, three people (2.7%) in level 3, and four people (3.5%) in level 4. In order to effectively compare the differences in working ability that we divided participants into two groups: no work experience and level 1, and the other group was level 2 to 4. It was founded that the rehabilitation utilizing group had a higher employment level after first episode (55.8% vs. 31.9%, p = 0.01) (Table 2).

Table 2: Current and previous occupational functioning.

	Non-attendance group (n = 49)	***Rehabilitation utilizing group (n = 113)***	***Statistics***	
	number (%)	**number (%)**	**t /χ2**	*p*
Work experience prior to onset	27 (55.1%)	41 (36.3%)	4.97	0.03*
At least 3 months consecutive work experience prior to onset	26 (53.1%)	39 (34.5%)	4.89	0.03*
At least 3 months consecutive work experience after first episode[a]	15 (31.9%)	50 (44.2%)	6.73	0.04*
Highest employment level before illness[b]			.57	0.45
never and level 1	28 (53.8%)	73 (64.6%)		
level 2 and above	20 (41.7%)	40 (35.4%)		
Highest employment level after first episode[a]			7.55	0.01*
never and level 1	32 (68.1%)	50 (44.2%)		
level 2 and above	15 (31.9%)	63 (55.8%)		

Note. Due to missing data (non-attendance group), an = 47; bn = 48.
**p < 0.05*

The 6, 12, and 24 months follow-ups revealed that the rehabilitation utilizing group showed a significant reduction in the hospital readmission rate at the 12 and 24-months (10.6% vs. 25.0%, p = 0.02; 20.4% vs. 37.5%, p < 0.01) (Table 3).We also explored the model to predict the rehabilitation

utilizing group by a forward Wald logistic regression analysis, putting dummy variables "education (1: university degree and above)," "married status (1: married)," "onset age (1: 26 and above," "day center services utilizing experience," "having work experience prior to onset," "having at least 3 months consecutive work experience prior to onset," "having at least 3 months consecutive work experience after first episode," and "highest employment level after first episode (1: level 2 and above)" as potential predictors. The results showed that "university degree and above", "married status", and "prior day center services utilizing experience" were significant predictors, after controlling the effect of age and sex, as shown in Table 4.

Table 3: Rehospitalization rates of participants.

Non-attendance groupa (n = 49)	*Non-attendance group[a] (n = 49)*	*Rehabilitation utilizing group (n = 113)*	*Statistics*	
	Rehabilitation utilizing group	**number (%)**	**t /χ2**	*p*
After 6 months	6 (12.5%)	6 (5.3%)	4.83	0.09
After 1 year	12 (25.0%)	12 (10.6%)	7.77	0.02*
After 2 years	18 (37.5%)	23 (20.4%)	10.69	<0.01**

Note. Due to missing data (non-attendance group), [a]n = 48.
***p < 0.05; **p < 0.01.*

Table 4: Predictors for rehabilitation utilizing.

	B	*S.E.*	*Wald*	*p*	*Exp (B)*
Constant	-0.51	0.87	0.34	0.56	0.60
Age	0.01	0.02	0.34	0.56	1.01
Male	0.12	0.39	0.09	0.77	1.12
Previous day-care service	1.46	0.41	12.92	0.00	4.32
Marriage	-1.13	0.52	4.66	0.03	0.32
University degree and above	1.13	0.41	7.57	0.01	3.10

and routines as the most stressful faca, 't ini

Discussion

We found that 3/4 of referred clients successfully engaged the program. Clients who had a single status, higher education, earlier onset age, no working experience prior to onset, and prior experience of receiving day care service were more likely to successfully engage the CBPR program. We also found that, within 1 and 2 years post the initial registration of the analyzed period, clients who successfully received the CBPR service were less likely to experience rehospitalization.

The immediately refused plus early drop-out rate of our CBPR program was 30.25% (n = 49), which was higher than those programs addressing the vocational rehabilitation (McGurk & Mueser, 2006). But this was consistent with psychosocial rehabilitation programs (Kreyenbuhl, Nossel, & Dixon, 2009), such as the one conducted by Kurtz et al. (2011), where their drop-out rate was 37% (Luo et al., 2018). We found gender having no significant effects on drop-out or not. This finding was similar with the results regarding psychosocial rehabilitation programs, suggesting that these may not be predictingfactors for both types of programs (Kurtz et al., 2011). However, there was something worth noting regarding education, and marital status. People with single status and higher

level of education, might be more willing to participate in the CBPR program. However, reasons such as low education level people can't express their needs adequately or single status more anxiety expecting to be more independent incomplete (Luo et al., 2018). We also found that participants referred from the hospital-based day center services were less likely to withdraw from the CBPR program. There may be two possible explanations. First, participants showed potential to work would have been referred by psychiatrists, which introduces selection bias. Second, people with SMI could break passivity and isolation and become active and experiencing meaningfulness in daily life (Leufstadius, 2018). This might imply that a longer occupational training program would be more suitable for participants referred from other sources. This strategy was to increase the utilization suitable eligibility criteria for participants and a greater awareness. In this study, the work experience prior to onset impact also influenced clients' participation in the CBPR program. That was, individuals with no previous work experience, were more likely to participant in the program. This result was similar to previous finding indicating that occupational functioning leads to rehabilitation outcome (Christensen et al., 2015). In addition to participants' motivation playing a part in the process of job hunting, we also speculated that whether participants' previous level of functioning and their goals of the prevocational training program matched was very important. It was associated with that people with SMI improved self-esteem and feeling of well-being in the recovery process with vocational rehabilitation (Modini et al., 2016). About the occupational function, we found that people's work experience may also be a predictor. We originally assumed that participants with higher functioning (previous work experience) may affect the participation in the CBPR program. But we could not find the result in the logistic regression analysis due to fewer high occupational function participants in this study and mental illness impact. Eligibility criteria for clients to participate in the program were not established among multidisciplinary. It was known that daily function, symptom severity, and social support all affect occupational functionality. As there was no standard functional evaluation screening in the referral phase, the "ever worked prior to disease" impact was used as a predictor of outcome, a method based on previous studies in which researchers found that initial work ability could moderate the outcome (McGurk & Mueser, 2006).

Past study has pointed out that community rehabilitation services can reduce the rate of rehospitalization of people with SMI (Erşan, 2020). Alvarez-Jimenez, et al. (2012) reviewed 153 potentially relevant articles, pooled prevalence of relapse of positive symptoms was 43% (35–54%) at first episode of psychosis in 1.5–2 years follow-up (Alvarez-Jimenez et al., 2012). We found that the participants in the rehabilitation utilizing group had lower readmissions (10.6% and 20.4%) during the 1 and 2 years of follow-up. Compared with previous study from National Health Insurance Research Database between 1999 and 2009 in Taiwan, the lower the frequency of psychiatric clients' using CBPR program had the higher the risk of readmission. The rate of people with SMI who used CBPR program of experiencing readmission within one year after discharge was still higher (42.5%) than our program (Li, Hsieh, Li, & Su, 2013). One possible explanation for our lower relapse and rehospitalization rate was speculated that the people of SMI may have good disease awareness through illness management training and receiving reminders from case manager of the community rehabilitation center so that clients could early seek medical assistance. Our CBPR program has liked to standard care service it may be decreased hospitalization (Clausen et al., 2016). There are several applications of this study, as the outcomes of our CBPR program is confirmed, for clinical practitioners who are designing or refining a program. The Important characteristics of our program could be applied. Also, our findings suggest that several demographic and clinical factors could be related with the drop. Whether this finding is suitable for other programs is unclear, we suggest that a retrospective study could be conducted in other clinical setting (plural or singular) and identify the potential patients that need more attention to enhance the outcome.

Limitations

The study was of a retrospective nature without a random control design. However, an ethical risk may arise otherwise, because the control service is less effective or inappropriate (Waghorn, Dias, Gladman, & Harris, 2015). The aim was to explore factors related to service utilization, and therefore other outcome variables such as clinical symptoms and disability, economic and social outcomes were not measured, which need to be explored in the future. Due to the study being conducted in one center, the sample size particularly the early drop-out group was relatively small, and it was difficult to analyze the subgroups with different diagnoses. Also, as the design is a naturalistic one, the sample size is not equal. No power analysis was conducted before the study. Also, although there is not significant difference on the sex and age, there could be confounding factors, as the sample is not matched. Match the sample with propensity score could be an approach to correction this, however, the sample size is not large enough to conduct a propensity score.

Conclusion

In addition to the demographic factors of the past about the participation in the CBPR program, we also found that occupational functioning could be also affected factor. The findings also supported the feasibility and effectiveness of CBPR program for Chinese people with SMI. Therefore, further research regarding the subjective perceptions of occupation and how it may be promoted should be undertaken

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to this work. The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Acknowledgements

This study was supported in part by grants from the National Cheng Kung University Hospital (NCKUH-10606026). The authors would also like to thank Ms. Chao-Chi Chen, Fang-Hsuan Wang, and Mr. Chien Ting Lin.

Reference

Akiyama, T., Chandra, N., Chen, C. N., Ganesan, M., Koyama, A., Heok Kua, E. E., ... & Zou, Y. (2008). Asian models of excellence in psychiatric care and rehabilitation. *International Review of Psychiatry, 20*(5), 445-451.

Alvarez-Jimenez, M., Priede, A., Hetrick, S. E., Bendall, S., Killackey, E., Parker, A. G., ... & Gleeson, J. F. (2012). Risk factors for relapse following treatment for first episode psychosis: a systematic review and meta -analysis of longitudinal studies. *Schizophrenia research, 139*(1-3), 116-128.

Bond, G. R., & Drake, R. E. (2017). New directions for psychiatric rehabilitation in the USA. *Epidemiology and psychiatric sciences, 26*(3), 223-227.

Chatterjee, S., Pillai, A., Jain, S., Cohen, A., & Patel, V. (2009). Outcomes of people with psychotic disorders in a community-based rehabilitation programme in rural India. *The British Journal of Psychiatry, 195*(5), 433-439.

Chen, C. S. (2014). The influence of community psychiatric rehabilitation on readmission among patients with schizophrenia. *Cheng Ching Med. J, 10*, 26-33.

Christensen, T. N., Nielsen, I. G., Stenager, E., Morthorst, B. R., Lindschou, J., Nordentoft, M., & Eplov, L. F. (2015). Individual Placement and Support supple mented with cognitive remediation and work-related social skills training in Denmark: study protocol for a randomized controlled trial. *Trials, 16*, 1-10.

Clausen, H., Landheim, A., Odden, S., Šaltytė Benth, J., Heiervang, K. S., Stuen, H. K., ... & Ruud, T. (2016). Hospitalization of high and low inpatient service users before and after enrollment into Assertive Community Treatment teams: a naturalistic observational study. *International journal of mental health systems, 10*, 1-10.

Erşan, E. E. (2020). Hospitalization and some sociode mographic characteristics of patients registered with a community mental health center. *Community mental health journal, 56*(3), 498-505.

Fleury, M. J., Grenier, G., Bamvita, J. M., & Caron, J. (2011). Mental health service utilization among patients with severe mental disorders. *Community mental health journal, 47*, 365-377.

Killackey, E. J., Jackson, H. J., Gleeson, J., Hickie, I. B., & McGorry, P. D. (2006). Exciting career opportunity beckons! Early intervention and vocational rehabilitation in first-episode psychosis: employing cautious optimism. *Australian & New Zealand Journal of Psychiatry, 40*(11-12), 951-962.

Kreyenbuhl, J., Nossel, I. R., & Dixon, L. B. (2009). Disengagement from mental health treatment among individuals with schizophrenia and strategies for facilitating connections to care: a review of the literature. *Schizophrenia bulletin, 35*(4), 696-703.

Kurtz, M. M., Rose, J., & Wexler, B. E. (2011). Predictors of participation in community outpatient psychosocial rehabilitation in schizophrenia. *Community mental health journal, 47*, 622-627.

Kurtz, M. M., Wexler, B. E., Fujimoto, M., Shagan, D. S., & Seltzer, J. C. (2008). Symptoms versus neurocognition as predictors of change in life skills in schizophrenia after outpatient rehabilitation. *Schizophrenia research, 102*(1-3), 303-311.

Leufstadius, C. (2018). Experiences of meaning of occupation at day centers among people with psychiatric disabilities. *Scandinavian Journal of Occupational Therapy, 25*(3), 180-189.

Li, Y. H., Hsieh, P. C., Li, C. Y., & Su, H. F. (2013). Readmission and risk factors among community rehabilitation users with psychiatric diseases. *Taiwan Gong Gong Wei Sheng Za Zhi, 32*(6), 586.

Lundqvist, L. O., Ivarsson, A. B., Brunt, D., Rask, M., & Schröder, A. (2016). Quality of community-based day centre services for people with psychiatric disabilities: psychometric properties of the Quality in Psychiatric Care–Daily Activities (QPC–DA). S*candinavian Journal of Occupational Therapy, 23*(2), 91-96.

Luo, H., McNeil, E. B., Feng, Q., Li, H., Chen, Q., Qin, X., ... & Assanangkornchai, S. (2018). Utilization of psychiatric rehabilitation services and influencing factors among people with psychotic disorders in rural communities of Guangxi, China. *International Journal of Mental Health Systems, 12*, 1-8.

McGurk, S. R., & Mueser, K. T. (2006). Cognitive and clinical predictors of work outcomes in clients with schizophrenia receiving supported employment services: 4-year follow-up. Administration and Policy in Mental Health and Mental Health Services *Research, 33*, 598-606.

McKay, C., Nugent, K. L., Johnsen, M., Eaton, W. W., & Lidz, C. W. (2018). A systematic review of evidence for the clubhouse model of psychosocial rehabilitation. *Administration and Policy in Mental Health and Mental Health Services Research, 45*, 28-47.

Modini, M., Joyce, S., Mykletun, A., Christensen, H., Bryant, R. A., Mitchell, P. B., & Harvey, S. B. (2016). The mental health benefits of employment: Results of a systematic meta-review. *Australasian Psychiatry, 24*(4), 331-336.

Pratt CW, G. K., Barrett NM, Roberts MM. . (2014). *Psychiatric rehabilitation. San Diego,* CA, US: Elsevier Academic Press.

Schofield, D. J., Shrestha, R. N., Percival, R., Passey, M. E., Callander, E. J., & Kelly, S. J. (2011). The personal and national costs of mental health conditions: impacts on income, taxes, government support payments due to lost labour force participation. *BMC psychiatry, 11*, 1-7.

Shim, R. S., Compton, M. T., Zhang, S., Roberts, K., Rust, G., & Druss, B. G. (2017). Predictors of mental health treatment seeking and engagement in a community mental health center. *Community Mental Health Journal, 53*, 510-514.

Standard occupational classification system of the Republic of China. (2010). *Directorate-general of budget accounting and statistics executive yuan.*

Waghorn, G., Dias, S., Gladman, B., & Harris, M. (2015). Measuring what matters: effectiveness of implementing evidence-based supported employment for adults with severe mental illness. *International Journal of Therapy and Rehabilitation, 22*(9), 411-420.