


Correlates of community rehabilitation service utilization among persons with psychiatric disabilities

International Journal of
Social Psychiatry
1–9
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/00207640211036170
journals.sagepub.com/home/isp


Li-yu Song 

Abstract

Background: The use community psychiatric rehabilitation (CPR) service could facilitate community tenure, autonomy, and recovery among persons with psychiatric disabilities. Nevertheless, based on existing scientific evidence, the conformance rate with the treatment recommendations was modest and the existing services are underutilized in Taiwan.

Aims: This study examined the correlates of CPR service utilization based on the Behavioral Model of Health Service Utilization. Especially, the effects of enabling factors were explored.

Methods: Five hundred and ninety-two participants from 32 community psychiatric rehabilitation centers in Taiwan completed the questionnaire. There were three groups of independent variables: predisposing, enabling, and need factors. Multiple regression analysis with a hierarchical method of entry was performed.

Results: The hypothesized model was significant. Eight independent variables in the model explained 29.3% of the variances in the service utilization. Three enabling factors were significant after controlling for the effects of other factors. The most important correlate was professional relationships followed by family support and welfare subsidy.

Conclusions: The findings support that factors associated with CPR service utilization need to be examined separately from general mental health service. CPR program design and service delivery should consider the three most important enabling factors and the extent of service utilization could be enhanced.

Keywords

Community psychiatric rehabilitation, service utilization, Andersen's behavioral model

Background

Deinstitutionalization policy starting in the 1950s has brought persons with severe mental illness (PSMI, hereinafter called consumers) back into the community. They regain their right to live a normal and meaningful life as other people do (Anthony et al., 2002; Mechanic, 1989). To assist consumers to overcome disabilities, community psychiatric rehabilitation (CPR) programs have flourished since the 1970s and 1980s. The components of CPR frequently cover some elements of residential, social skills, case management, vocational services, recreational activities, self-development courses, family counseling and support, educational training, advocacy, etc. The goal of CPR is to enable consumers to restore their ability and function for independent living, socialization, and effective life management. The objective is that they can live a satisfying life in the community with the least amount of ongoing professional intervention (Anthony et al., 2002; Corrigan et al., 2008; Hughes & Weinstein, 2000; Killaspy, 2014; Rössler, 2006).

The literature has shown that psychiatric rehabilitation could bring multiple positive results on outcomes such as recidivism, time spent in the community, employment and productivity, skill development, and client satisfaction (Spaniol et al., 1994). The use of CPR services is associated with longer community tenure and greater autonomy (Killaspy, 2014), and has a positive impact on consumer recovery (Song, 2017; Killaspy, 2014).

Given the importance of rehabilitation service, it is expected by policy makers and professionals that the consumers should use these services. Nevertheless, the capacity of CPR may not be sufficient to meet the normative

Graduate Institute of Social Work, National Chengchi University, Taipei

Corresponding author:

Li-yu Song, Graduate Institute of Social Work, National Chengchi University, No. 64, Sec. 2, Zhinan Road, Wenshan District, Taipei 11605.

Email: liyusong@nccu.edu.tw

needs defined by the professionals (Spaniol et al., 1994). On the other hand, CPR is not necessarily valued and utilized by consumers and caregivers. Thus, the existent resources are often underutilized. Rössler (2006) mentioned that existing scientific evidence on the conformance rate with the treatment recommendations was modest and generally below 50%.

In Taiwan, since 1980s the mental health policy has focused on increasing both the hospital beds for acute and long-term psychiatric treatment and the capacity for community rehabilitation to meet the estimated service needs. The Ministry of Health launched the CPR policy and services in the 1985. The defined CPR services by our government include half-way house, sheltered workshop, community rehabilitation center, and home care (Song, 1998). Up to date, the hospital beds have met the estimated goal; nevertheless, the rehabilitation capacity is still below the estimated needs. For example, according to the statistics of the Ministry of Health and Welfare (2018), there were an estimated 63,727 consumers (about 70% of the PSMI population) living with their families, and yet all the rehabilitation facilities could serve only 9,449 consumers. As regards underutilization, from 2016 to 2019, the rate of CPR service utilization ranged from 67.77% to 72.76% of the existing service capacity (Ministry of Health and Welfare, 2020). This revealed that some consumers with rehabilitation needs have not used the service. The question asked is: what factors are associated with CPR service utilization? This study explores the important correlates of this type of utilization. The knowledge will shed light on case recruiting and facilitate service delivery.

In this study, the investigator adopted the Behavioral Model of Health Service Utilization (Andersen, 1995, 2013) as the theoretical framework. The model is the most frequently employed framework for identifying factors associated with health service use (Fleury et al., 2012; Roberts, 2018). This model classifies predictors of service utilization into the following categories: predisposing, enabling, and needs-related factors. Predisposing factors are individual characteristics that exist before the illness and include demographic factors, social structure, and health belief. Enabling factors refer to various features that influence care delivery and attitudes toward care. They also encompass variables such as income, social support, and availability of care. Finally, needs-related factors include physical and mental health assessment by patients and professionals. For example, illness, symptom severity, perceived needs, and impairment (Andersen, 1995; Fleury et al., 2012).

The Behavioral Model has been applied in mental health service utilization as well. Roberts (2018) reviewed 52 studies on factors associated with any contact of formal mental health services (including private, public, generalist, and specialist) for common mental disorders among the adult population. This review found that need factors

(i.e. evaluate health status, duration or chronicity of symptom, disability or functioning, comorbid mental disorders, and panic symptoms) were most consistently associated with service utilization. There was inconsistent evidence in terms of the association with predisposing factors, that is, specifically demographic factors. However, there was evidence linking an increased likelihood of service use by females, Caucasian ethnicity, higher education levels, and being unmarried. Moreover, there was little evidence to support the association with enabling factors and service utilization. Inconsistent evidence was found for the correlations between unemployment or having health insurance and the use of services. The results also showed that there was a lack of research from low- and middle-income countries (Roberts, 2018). Thus, this study focused on the Taiwanese population to fill this gap.

The studies reviewed by Roberts (2018) referred to broad range of different mental health services. Up to date, there is a lack of study specifically focusing on the factors associated with CPR service utilization. Given the importance of CPR service for consumer community life, this study addresses this gap. Moreover, the investigator examined the effects of more enabling factors by including informal and formal social support variables. Another special feature of this study is that the investigator explored the association between CPR service use and a psychological variable, that is, resilience, as von Lengerke et al. (2013) pointed out that psychological factors (in addition to social factors) might contribute to inequitable access. Finally, previous studies have focused on examining the correlates of a dichotomous dependent variable (use vs. nonuse). Whereas the dependent variable (DV) in this study was the extent (volume) of service use, which would capture a larger portion of variances and enhance the accuracy of correlation estimation. Figure 1 depicts the model tested.

Methods

A cross-sectional survey was conducted to collect data from consumers in community psychiatric rehabilitation centers. This study has been approved by the Institutional Review Board of the National Chengchi University in Taiwan for quality and research ethics.

Participants

Participants were recruited from community psychiatric rehabilitation centers in Taiwan. Criteria for the selection of participants were as follows: (1) consumers must have a severe mental illness (SMI) other than substance abuse, personality disorder, or dementia due to any cause; (2) consumers must have been hospitalized at least once since the onset of mental illness to further ensure they did have an SMI, and (3) consumers must have used the services at

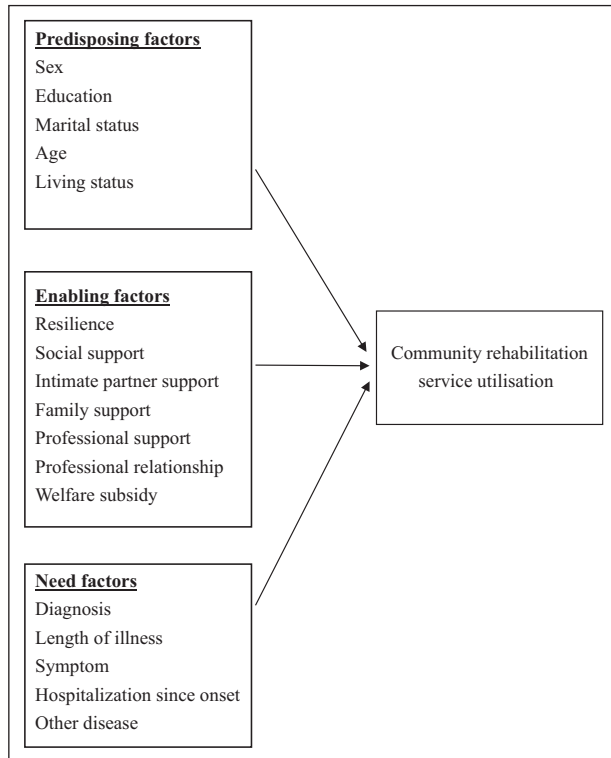


Figure 1. Theoretical framework of rehabilitation service utilization.

the center for at least 3 months. In Taiwan, the users of the rehabilitation services must be referred by the City or County Bureau of Health and must have a diagnosis of mental illness made by a psychiatrist.

The community rehabilitation center in Taiwan is a facility that is similar to day treatment in the United States. The center provides case management services, social and recreation activities, occupational therapy, vocational training, and sheltered workshops. There are two types of community rehabilitation centers: a small nonprofit organization or an association and a center in a hospital. The former tends to be smaller in terms of service capacity, more flexible and autonomous in operation, and less medically-oriented. This study focused on the former as a control of the contextual factor. Based on the information provided by the Ministry of Health and Welfare, there were 70 rehabilitation centers in Taiwan in 2015, and 44 of them were run by a small nonprofit organization or an association.

The investigator sent a formal invitation letter to each center. Afterward, follow-up calls were made by research assistants. The director of each center then asked the workers and consumers opinions concerning their willingness to participate. Of 44 centers, 32 agreed to collaborate with the investigators. Of the 1,143 consumers among the 32 centers, 732 (64.04%) expressed a willingness to participate. Self-administered questionnaires were mailed to the

centers with follow-up calls to answer any questions. The staff at the centers handed out the questionnaires and guided the data collection. The questionnaire was anonymous to ensure privacy. A total of 632 questionnaires with signed informed consent (86.34% of 732, 55.3% of 1143) were returned. The majority of the participants completed the questionnaire by themselves, with few completing it with the help of the workers. Forty questionnaires were excluded due to missing data or response patterns (selecting the same answer across the items), leaving 592 usable questionnaires. Each subject was given a voucher (worth US \$6.30) to a convenience store as payment.

Measures

The investigator designed a questionnaire to measure the variables in the theoretical framework and other variables to depict the characteristics of participants, including a history of employment (ever employed), history of hospitalization (number and length of hospitalization over past 2 years), and on medication over the past 6 months (yes/no), etc. (Table 1). The questionnaire was pretested on 10 consumers and minor modifications were made.

Dependent variable. *The extent of rehabilitation service utilization* was measured by asking the participants: currently how often you used the services provided by this center? Eight items were included: independent living and self-care training, interpersonal and social skills training, daily life arrangement and community life rehabilitation, physical activities, symptom management training, occupational therapy, sheltered workshops, and vocational training. The types of services were designed by the investigator and reviewed by the directors of two rehabilitation centers. Each item was measured on a four-point scale: no (0), seldom (1), sometimes (2), and often (3). The internal consistency in this study ($\alpha = .84$) was satisfactory. The summation score of the eight items was used in the analyses.

Predisposing factors. Five sociodemographic variables (sex, education, marital status, age, and living status) were included as the predisposing factors (Table 1).

Enabling factors. ‘Resilience’ was measured by the Brief Resilience Scale (BRS) (Smith et al., 2008). The scale is a reliable means of assessing resilience as the ability to bounce back or recover from stress. It has six items with five response categories ranging from strongly disagree (1) to strongly agree (5). The BRS was tested on four samples, consisting of undergraduate students, cardiac rehabilitation patients, and women who either had fibromyalgia or were healthy controls (Smith et al., 2008). The data resulted in good internal consistency, with Cronbach’s alphas ranging from .80 to .91. The construct validity and

Table 1. Descriptive statistics of the variables in this study (N=592).

Statistics variables	Mean (SD) or N (%)	Statistics variables	Mean (SD) or N (%)
Dependent variable		Need factors	
Extent of rehabilitation service ^a	17.31 (4.72)	Diagnosis	
		Schizophrenia	442 (74.7)
		Affective disorder ^b	108 (18.2)
		Other	42 (7.1)
Predisposing factors		Length of illness (years)	17.60 (8.99)
Age (years)	41.15 (9.87)	Symptoms	16.33 (4.12)
Sex		# of hospitalizations since onset	4.01 (4.74)
Male	297 (50.6)	Other medical disease	
Female	290 (49.4)	Yes	211 (37.6)
Marital status		No	350 (62.4)
Not married	446 (75.7)	Other variables	
Married or cohabitated	44 (7.5)	Intimate partner	
Divorced	75 (12.7)	Yes	115 (20.2)
Separated	13 (2.2)	No	455 (79.8)
Widower	11 (1.9)	Ever employed	
Education		Yes	392 (66.2)
Elementary school	25 (4.2)	No	200 (33.8)
Junior high	115 (19.5)	Region	
High school	303 (51.3)	North	169 (28.5)
College or above	148 (25.0)	Central	185 (31.3)
Live with		South	137 (23.1)
Family members or relatives	421 (71.1)	East	101 (17.1)
Halfway house	124 (20.0)	Religion	
Alone	47 (7.9)	No	138 (23.4)
Enabling factors		Buddhism	165 (27.9)
Resilience	18.51 (3.60)	Taoism	70 (11.8)
Social support	19.58 (6.96)	Folk belief	45 (7.6)
Family support	9.03 (4.27)	I-Kuan Tao	23 (3.9)
Intimate partner support		Protestant	93 (15.7)
Very inadequate	10 (9.0)	Catholic	18 (3.0)
Inadequate	13 (11.7)	Muslim	1 (0.2)
Fair	40 (36.0)	Other	38 (6.4)
Adequate	31 (27.9)	Length of hospitalization past 2 years (by months)	1.77 (4.23)
Very adequate	17 (15.3)	On medication the past 6 months	
Professional support		Yes	573 (97.1)
Very inadequate	16 (2.7)	No	17 (2.9)
Inadequate	43 (7.3)		
Fair	189 (32.0)		
Adequate	223 (37.8)		
Very adequate	119 (20.2)		
Professional relationship	74.39 (12.25)		
Welfare subsidy	1.96 (1.30)		

^aEach item was measured on a four-point scale: no (0), seldom (1), sometimes (2), and often (3).

^bIn this study, affective disorder covered the following diagnosis: depression, mania, and bipolar disorder.

test-retest reliability are also sound, 0.69 for 1 month, and 0.62 for 3 months. In this study, the Cronbach's alpha of BRS was acceptable (.60) given the six-item scale.¹

'Social support' was measured using the adapted Interpersonal Support Evaluation List (ISEL, Cohen et al., 1985) by Biegel et al. (1994), which is a 16-item scale

including four response categories and range from absolutely true (0) to absolutely wrong (3). A lower score indicates greater support. The internal consistency was good (0.83–0.85). In this study, Cronbach's alpha was .75.

'*Family support*' was measured by six items about the extent of instrumental or tangible support (e.g. aiding on work, lending money, etc.) and emotional support (e.g. doing things together and chatting) provided by family members and relatives during the past 6 months (Song et al., 2006). Each item has the following response categories: never (0), seldom (1), sometimes (2), and often (3). The internal consistency was satisfactory ($\alpha = .81$) in this study.

'*Intimate partner support*' was measured by one item. The participants were asked to rate whether their partner had provided them adequate support during the past 6 months when they needed help. The response categories included: very inadequate (1), inadequate (2), almost adequate (3), adequate (4), and very adequate (5). The same question was asked to measure *professional support*.

The Recovery Promoting Relationship Scale (RPRS) (Rusinova et al., 2006) was used to measure *professional relationships*. The 24-item instrument provides scores on the level of a given practitioner's core interpersonal skills and skills to utilize recovery-promoting strategies as manifested in a specific provider-client relationship. The participants were asked to rate each item based on the main professional who they work with. If they did not have a main professional, then they rated the items based on all the professionals they interacted with at the psychiatric rehabilitation program. The scale has demonstrated a high level of internal consistency (0.98), good test-retest reliability (0.72), acceptable concurrent criterion, and known group validity. It is a four-point scale with response categories ranging from strongly disagree (1) to strongly agree (4). The internal consistency in this study was 0.97.

'*Welfare subsidy*' was measured by asking whether they had received any of the following five types of benefits over the past 6 months: medical subsidy, income subsidy, work-related welfare, insurance subsidy, and educational subsidy. The number of benefits the participants used or received was treated as the score for this variable.

Need factors. Five illness variables were used to measure need factors: Diagnosis (schizophrenia, affective disorder [depression, mania, and bipolar disorder], and other), length of illness, symptom, hospitalization since onset (times), and other diseases (yes/no).

'*Symptoms*' were evaluated by the Mental Health Inventory (MHI-5) (Berwick et al., 1991), which is a six-point Likert scale with five items assessing the extent of symptoms (anxiety, depression, and behavioral/emotional control) and positive affect during the past month. The response category ranges from never (1) to always (6). As a screening test, MHI-5 was as good as the MHI-18 and

the General Health Questionnaire (GHQ-30), and better than the Somatic Symptom Inventory (SSI-28), for detecting most significant DIS disorders, including major depression, affective disorders, and anxiety disorders. The summation score was used in the analysis. In this study, the Cronbach's alpha of MHI-5 was .56, which was acceptable given a five-item scale.²

Data analysis

In addition to the descriptive analysis, the following analyses were performed:

Bivariate analyses between each independent variable (IV) and extent of psychiatric rehabilitation utilization (DV) were conducted according to the measurement of each, including *t*-test, ANOVA, and Pearson's correlation.

Multiple regression analysis was used for testing if the IVs in the hypothesized model were significantly associated with and the DV. Also, the relative importance among the significant factors was determined by comparing the standardized regression coefficients (Beta). Based on the conceptual framework of the Behavioral Model and the analytical practice in the relevant literature, the hierarchical method of entry was used, with predisposing factors entered first, followed by enabling factors, and then the need factors. Dummy variables were created for the IVs with a nominal or ordinal level of measurement. The participants with missing data on any of the variables in the theoretical framework were excluded from the analyses (listwise deletion).

Results

Sample characteristics

Table 1 shows the detailed statistics for all the variables in this study. The predominant diagnosis was schizophrenia (74.7%), followed by affective disorder (18.2%). The average age of onset was 23.47 years. Comparing with the potential range of scores (0–24), the mean (17.31) of the extent of rehabilitation service use indicates that most participants tended to utilize a medium-high level of the services. Table 2 depicts the mean rank of each item.

Bivariate analyses

Among the *predisposing factors*, the association between sex, education, marital status, age, and living status with the DV was not significant ($p > .05$), respectively.

Concerning the associations between the enabling factors and the DV, higher resilience scores were positively associated with a greater extent of service use ($r = .156, p = .000$). General social support and intimate partner support was not significant ($p > .05$). Family support ($r = .374, p = .000$), professional support ($F = 7.730$,

Table 2. Extent of rehabilitation service utilization.

Item	Mean	SD
Independent living and self-care training	2.30	0.79
Interpersonal and social skills training	2.22	0.79
Daily life arrangement and community life rehabilitation	2.16	1.83
Physical activities	2.12	0.85
Symptom management training	2.36	0.79
Occupational therapy	2.29	0.93
Sheltered workshops	2.00	0.97
Vocational training	1.86	0.98

Note. Each item was measured on a four-point scale: no (0), seldom (1), sometimes (2), and often (3).

$p = .000$, $\eta^2 = .050$), and professional relationship ($r = .401$, $p = .000$) were significant. Greater family support and professional relationship each was positively correlated with the DV. The post hoc comparisons showed that those who rated professional support as adequate utilized more services than those who rated them inadequate. Those who rated that they received very adequate professional support utilized more service than their counterparts, except those who rated it as adequate. Welfare subsidy ($r = .175$, $p = .000$) had a significant and positive correlation with CPR service use.

Concerning the effect of need factors, the association between diagnosis and the DV was not significant. Length of illness was not significant. Symptom ($r = -.156$, $p = .000$), number of hospitalizations since onset ($r = .094$, $p = .022$), and other disease ($t = 2.114$, $p = .035$) each was significantly associated with the DV. The severity of symptoms over the past month was associated with lower service use. Nevertheless, the number of hospitalizations since onset, indicating chronicity of mental illness, was positively associated with rehabilitation service use. Those who had other medical disease were more likely to use service ($t = 2.114$, $p = .035$).

Multiple regression analysis

In the multiple regression analyses, the investigator included only the eight variables with significant bivariate correlation with DV to avoid dropping cases with missing data. Dummy variables were created for categorical and ordinal variables to be used in the analysis (Table 3). The category 'very adequate' was used as the reference group for the 'professional support' variable. The selection of the reference group was based on the results of one-way ANOVA.

The initial analysis revealed three outliers (standardized residual ≤ -3.0 or ≥ 3.0). After the deletion, 551 cases were retained for analysis. No serious multicollinearity existed among the IVs with the tolerance coefficients ranging from 0.50 to 0.97. In the first block, five enabling

factors were entered into the equation (Table 3). The variance explained was 28.7% (R^2) ($p = .000$). In the second block, three need factors were entered into the equation and caused an increase of R^2 by 0.6%, which was not significant ($p > .05$). The eight IVs explained 29.3% of the variances in the DV. After taking other IVs into account, the significant IVs were family support, professional relationship, and welfare subsidy. Based on the Beta, professional relationship (Beta = .33) was the strongest correlate, followed by family support (Beta = .23) and welfare subsidy (Beta = .17). Resilience, professional support, symptoms, hospitalization since onset, and other disease were not significant after considering other variables in the equation.

Discussion

The strongest predictors: Enabling factors

The results showed that among the three types of factors of CPR service utilization, enabling factors were the strongest ones. The findings are quite different from the previous studies on general mental health service utilization. The review of previous studies showed that need factors were most consistently associated with formal mental health services utilization (Roberts, 2018). Such services are mainly for psychiatric therapy aiming at reducing symptoms. Whereas CPR services focus on skill training and resource development (Anthony et al., 2002). There are fundamental differences in the nature of services between the two. Babitsch et al. (2012) maintained that the context of the studies reviewed and the characteristics of the study populations seemed to have a strong impact on the existence, strength, and direction of these associations. The findings of this study indicates that factors that impact on the utilization of CPR service need to be separately examined from the other mental health service.

Three essential enabling factors: professional relationship, family support, and welfare subsidy

Psychiatric rehabilitation is a long-term effort. To regularly participate in the service, it takes strong motivation, resources, and resolution. During the process of rehabilitation, the participants might encounter both negative and positive experiences and emotions. In the treatment for addictive behaviors, the meta-analysis of outcome evaluation studies has concluded that professional relationship is one of the key factors that can facilitate client change; this variable alone could explain 30% of variances on client changes (Miller & Rollnick, 2002). Norcross (2010) also found that the consumers experience of the professional relationship is the best predictor of outcome. The nature of the professional relationship that consumers valued is that

Table 3. Regression analysis on extent of rehabilitation service utilization (Valid $N=551$).

I.V.	Model 1		Model 2	
	β	Beta	β	Beta
Constant	3.64		5.40	
Enabling				
Resilience	.07	.06	.03	.03
Family support	.25	.24***	.25	.23***
Professional support				
Very inadequate (1)	-1.83	-.07	-1.78	-.06
Inadequate (1)	-.37	-.02	-.37	-.02
Fair (1)	-.41	-.04	-.38	-.04
Adequate (1)	-.11	-.01	-.14	-.02
Professional relationship	.12	.33***	.12	.33***
Welfare subsidy	.60	.17***	.60	.17***
Need				
Symptoms			-.070	-.06
# of hospitalizations since onset			.05	.05
Other disease (1)			.22	.02
	$R^2 = .287^{***}$		$R^2 = .293^{***}$	
	$F = 27.293$ ($df = 8542$)		$F = 20.339$ ($df = 11,539$)	
			R^2 change = .006	
			F change = 1.566	

* $p \leq .01$. ** $p \leq .05$. *** $p \leq .001$.

professionals can convey hope, share power, are available when needed, are open regarding the diversity in helpful strategies, and were willing to stretch the boundaries of what is considered the 'professional' role. In this study, the professional relationship was measured by the Recovery Promoting Relationship Scale (RPRS) (Russinova et al., 2006). Practitioner's level of interpersonal skills and the skills to utilize recovery-promoting strategies as manifested in a specific provider-client relationship could contribute greatly to the extent of CPR service utilization (Russinova et al., 2006). Thus, CPR workers must be equipped with such skills and abilities. In this study, further analysis showed that there were significant differences ($F=1.52$, $p=.038$) on the RPRS scores among the 32 community rehabilitation centers, which revealed contextual differences on this matter. Professional relationship could be enhanced through collective efforts by agencies. This is especially critical as the elements included in the scale are align with recovery-oriented services (Slade, 2009).

In Taiwan, since 2018 recovery has been set as the goal in the official document of evaluation criteria for psychiatric rehabilitation agencies (Ministry of Health and Welfare, 2021). To achieve this goal, the Ministry of Health and Welfare in Taiwan may need to increase resources specifically for the training in recovery concept, core interpersonal skills, and recovery-promoting competency for the CPR workers. Additionally, the RPRS could be used as an indicator of recovery competency for the periodic agency evaluation. Thus, CPR workers can perform self-check

on their recovery competency periodically. These actions might help further facilitate better utilization of CRP services based on the findings of this study.

Family support was the second most important enabling factor of CPR service utilization. The literature in psychiatric service has consistently revealed the value of family support to consumers personal recovery (Chou & Chronister, 2012; Corrigan & Phelan, 2004; Mancini et al., 2005; Pernice-Duca, 2010). This study further demonstrates the necessity of family support to CPR service utilization. In Taiwan, most consumers in the community are living with their families. Familism is a major characteristic of Chinese culture (Yang, 2001; Yang & Peng, 2005). Family members are bounded by responsibility and nurtured by unflinching family affection and support. Becoming family members are determined by yuan (緣, meant to be), and the relationship is forever (Yang, 2001; Yang & Ho, 1988). Family members are supposed to care for each other and every individual should bring glory to the family name. Thus, in Taiwan, family caregivers provide continuous support, and yet some might be loaded with stigma and sorrow as well. The internalization of stigma is key in the development of negative attitudes toward mental health treatment (Brown et al., 2010; Wu et al., 2017). Under this cultural situation, family member perception, knowledge, and acknowledge of CPR value became essential to mitigate internalized stigma. Such knowledge should be delivered in the psychosocial education program as early as possible. CPR workers need to develop a trusting

relationship with the family to communicate the value of rehabilitation and make family members aware the progress the consumers made to enhance family support for CPR. However, a heavy work-load might deter CPR workers to address family issues. According to the law and regulations for the community psychiatric agencies, with service users under 50, no social worker is required; with service users between 50 and 100, a part-time social worker is required; with service users over 100, at least a full-time social worker is required (Laws & Regulations Database of the Republic of China, 2021). In addition, the social worker's job obligation is primarily to work with the consumers. The policy makers could consider to allocate a specialist in each CRP center to work with family caregivers. Moreover, it is essential to equip CPR workers with knowledge and skills in family treatment.

The significance of welfare subsidy supports that financial situation was an important correlate of mental health service utilization (Roberts, 2018). Most consumers are facing economic difficulties in Taiwan. According to the survey on disabled people in 2016, 31.81% of their income came from government subsidies (Ministry of Health and Welfare, 2016). Welfare subsidy provided financial aids that reduced family caregiver burden and consumers would participate in more services. The data in this study showed that the most used welfare benefit was medical subsidy (73.1%), followed by income subsidy (57.6%), insurance subsidy (34.5%), educational subsidy (15.5%), and work-related welfare (15.0%). The investigator also asked the participants if they needed the welfare subsidy or service. By comparing the need and actual use, the percentage of unmet need for each type was as follows: work-related welfare ($n=352$, 59.5%), insurance subsidy ($n=319$, 53.9%), educational subsidy ($n=291$, 49.2%), income subsidy ($n=228$, 38.5%), and medical subsidy ($n=154$, 26.0%). The Ministry of Health and Welfare in Taiwan may need to allocate more welfare resources for consumers to mitigate the gap, especially in work-related and insurance domains.

Strengths and limitations of this study

The sample size of this study was relatively large, which made the findings more stable. The factors included based on the Behavioral Model of Health Service Utilization was comprehensive, especially the enabling factors. Despite these strengths, this study was not exempt from limitations. This study was based on the data from a cross-sectional survey; therefore, the relationships between the IVs and the DV refer to correlation instead of causality. The study results were based on a nonprobability sample; therefore, the generalizability of the results could not be ensured. Additionally, although the IVs in this study could explained a significant amount of the variance in the DV ($R^2=.293$), future study is needed to explore additional correlates to increase the explained variance.

Conclusions

The findings support that the correlates of CPR service utilization need to be examined separately from general mental health service. CPR program design and service delivery should consider the three strongest enabling factors: professional relationship, family support, and welfare subsidy. For the Chinese population, family support is an indispensable resource for the long-term rehabilitation effort. Chinese are relationally oriented; therefore professional relationships could be used as an essential facilitator in CRP. Welfare subsidy would provide consumers basic financial support. With these three core factors, comprised of micro, meso, and macro systems of ecology, the extent of service utilization could be enhanced.

Acknowledgments

The author is especially thankful for the consumers and professionals who participated in this study.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was sponsored by the Ministry of Science and Technology in Taiwan (MOST 104-2410-H-004-147-SS2).

Ethical approval

Ethical Approval Reference Number: NCCU-REC-201505-I014.

ORCID iD

Li-yu Song  <https://orcid.org/0000-0002-3749-2200>

Notes

1. Based on Nunnally's formula (1978), to achieve $r \geq .8$, the number of items needs to be increased to 16 for a six-item resilience scale.
2. Based on Nunnally's formula (1978), to achieve $r \geq .8$, the number of items needs to be increased to 16 for the MHI-5 scale. His formula is as follows: $K = r_{kk} / (1 - r_{ii}) / r_{ii} (1 - r_{kk})$.

References

- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1–10.
- Andersen, R. M., Davidson, P. L., & Baumeister, S. E. (2013). Improving access to care. In G. Kominski (Ed.), *Changing the U.S. health care system: Key issues in health services policy and management* (4th ed., pp. 33–69). Jossey-Bass.
- Anthony, W., Cohen, M., Farkas, M., & Gagne, C. (2002). *Psychiatric rehabilitation*. Center for Psychiatric Rehabilitation, Boston University.
- Babitsch, B., Gohl, D., & von Lengerke, T. (2012). Re-revisiting Andersen's behavioral model of health services use: A systematic review of studies from 1998–2011. *Psychosocial Medicine*, 9, 1–15. <https://doi.org/10.3205/psm000089>
- Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E., Jr., Barsky, A. J., & Weinstein, M. C. (1991). Performance of

- a five-item mental health screening test. *Medical Care*, 29, 169–176.
- Biegel, D., Milligan, S., Putnam, P., & Song, L. (1994). Predictors of burden among lower socioeconomic status caregivers of persons with chronic mental illness. *Community Mental Health Journal*, 30(5), 473–494.
- Brown, C., Conner, K. O., Copeland, V. C., Grote, N., Beach, S., Battista, D., & Reynolds, C. F., III. (2010). Depression stigma, race, and treatment seeking behavior and attitudes. *Journal of Community Psychology*, 38(3), 350–368.
- Chou, C., & Chronister, J. (2012). Social tie characteristics and psychiatric rehabilitation outcomes among adults with serious mental illness. *Rehabilitation Counseling Bulletin*, 55, 92–102.
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. M. (1985). Measuring the functional components of social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social support: Theory, research, and applications* (pp. 73–94). Martinus Nijhoff.
- Corrigan, P. W., Mueser, K. T., Bond, G. R., Drake, R. E., & Solomon, P. (2008). *Principles and practice of psychiatric rehabilitation: An empirical approach*. The Guilford Press.
- Corrigan, P. W., & Phelan, S. M. (2004). Social support and recovery in people with serious mental illnesses. *Community Mental Health Journal*, 40, 513–523.
- Flcury, M., Grenier, G., Bamvita, J., Perreault, M., Kestens, Y., & Caron, J. (2012). Comprehensive determinants of health service utilisation for mental health reasons in a Canadian catchment area. *International Journal for Equity in Health*, 11, 20.
- Hughes, R., & Weinstein, D. (2000). *Best practices in psychosocial rehabilitation*. International Association of Psychosocial Rehabilitation Services.
- Killaspay, H. (2014). Contemporary mental health rehabilitation. *East Asian Archives of Psychiatry*, 24(3), 89–94.
- Laws & Regulations Database of the Republic of China. (2021, July 8). *Standards for psychiatric rehabilitation agencies*. <https://law.moj.gov.tw/LawClass/LawAll.aspx?pcode=L0010006>
- Mancini, M. A., Hardiman, E. R., & Lawson, H. A. (2005). Making sense of it all: Consumer providers' theories about factors facilitating and impeding recovery from psychiatric disabilities. *Psychiatric Rehabilitation Journal*, 29, 48–55.
- Mechanic, D. (1989). *Mental health and social policy*. Prentice Hall.
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). The Guilford Press.
- Ministry of Health and Welfare. (2016). *Report of disabled people's living condition and demand survey*. Ministry of Health and Welfare, R.O.C., Taipei.
- Ministry of Health and Welfare. (2018). *Current psychiatric treatment resources*. <https://dep.mohw.gov.tw/DOS/sp-GS-113.html?Query=%E7%B2%BE%E7%A5%9E%E9%86%AB%E7%99%82%E8%B3%87%E6%BA%90#gsc.tab=0&gsc.q=%E7%B2%BE%E7%A5%9E%E9%86%AB%E7%99%82%E8%B3%87%E6%BA%90&gsc.sort=>
- Ministry of Health and Welfare. (2020, July 22). *Current psychiatric agencies and service use statistics*. <https://dep.mohw.gov.tw/DOS/cp-3907-40352-113.html>
- Ministry of Health and Welfare. (2021, July 8). 106 Evaluation criteria for psychiatric rehabilitation. <https://dep.mohw.gov.tw/DOMHAOH/cp-372-9030-107.html>
- Norcross, J. C. (2010). The therapeutic relationship. In B. L. Duncan, S. D. Miller, B. E. Wampold & M. A. Hubble (Eds.), *The heart and soul of change* (2nd ed., pp. 113–141). American Psychological Association.
- Nunnally, J. C. (1978). *Psychometric theory*. McGraw-Hill.
- Pernice-Duca, F. (2010). Family network support and mental health recovery. *Journal of Marital & Family Therapy*, 36, 13–27.
- Roberts, T. (2018). Factors associated with health service utilisation for common mental disorders: a systematic review. *BMC Psychiatry*, 18, 262.
- Rössler, W. (2006). Psychiatric rehabilitation today: an overview. *World Psychiatry*, 5(3), 151–157.
- Russinova, Z., Rogers, E. S., & Ellison, M. L. (2006). *The recovery-promoting relationships scale (RPRS) manual*. Center for Psychiatric Rehabilitation.
- Slade, M. (2009). *Personal recovery and mental illness*. Cambridge University Press.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194–200.
- Song, L. (1998). Community care for persons with chronic mental illness: A choice or dilemma? (in Chinese) *Formosa Journal of Mental Health*, 11(4), 73–103.
- Song, L. (2017). Predictors of personal recovery for persons with psychiatric disabilities: An examination of the Unity Model of Recovery. *Psychiatry Research*, 250, 185–192.
- Song, L., Chang, L., Lin, C., Shih, C., Ping, L., & Wang, N. (2006). Measuring social capital of Persons residing in a psychiatric institution. *International Journal of Social Psychiatry*, 52(4), 360–375.
- Spaniol, L., Brown, M. A., Blankertz L., Burnham, D. J., Dincin, J., Furlong-Norman, K., Nesbitt, N., Ottenstein, P., Prieve, K., Rutman, I., & Zippel, A. (1994). *An introduction to psychiatric rehabilitation*. International Association of Psychosocial Rehabilitation Services.
- von Lengerke, T., Gohl, D., & Babitsch, B. (2013). Re-visiting the behavioral model of health care utilisation by Andersen: A review on theoretical advances and perspectives. In C. Janssen, E. Swart & T. von Lengerke (Eds.), *Health care utilisation in Germany: Theory, methodology, and results* (pp. 11–28). Springer.
- Wu, I., Bathje, G. J., Kalibatseva, Z., Sung, D., Leong, F., & Collins-Eaglin, J. (2017). Stigma, mental health, and counseling service use: A Person-centered approach to mental health stigma profiles. *Psychological Services*, 14(4), 490–501.
- Yang, C. F. (2001). *How to understand the Chinese*. Yuan-Liou Publishing Co., Ltd.
- Yang, C. F., & Peng, S. C. (2005). Affection and guanxi in human interaction. In K. S. Yang, K. K. Hwang & C. F. Yang (Eds.), *Chinese Indigenous Psychology* (pp. 483–520). Yuan-Liou Publishing Co., Ltd.
- Yang, K. S., & Ho, D. Y. F. (1988). The role of yuan in Chinese social life: A conceptual and empirical analysis. In A. C. Paranjpe, D. Y. F. Ho & R. W. Rieker (Eds.), *Asian contributions to psychology*. Praeger.