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Psychometric Properties of the Malay Empowerment Scale among Patients Attending Community Mental Health Centres

Ahmad Thani Abdul Aziz[1], Nor Asyikin Fadzil[1],
Zahiruddin Othman[1], Yee Cheng Kueh[2]

[1]Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia
[2]Department. Biostatistics and Research Methodology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Abstract

Background: One of the substantial elements for mental health and social services now is to bring patients with mental illness back to the community. Among the most established methods identified to achieve this target is via empowerment in the psychiatry rehabilitation service settings. Since there is no validated questionnaire available for the local population, there is a need to validate the Empowerment Scale (ES) so that research can be conducted to explore empowerment among patients with mental illness in Malaysia. Objectives: The study aims to validate the Malay Empowerment Scale (ES-M). Method: A cross-sectional study, involving 240 patients with mental illness, was conducted at MENTARI community mental health centres in East Coast Malaysia. The ES was initially translated into Malay using forward and back-translation procedures by a group of experts. Data were analysed for construct validity by performing confirmatory factor analysis. Reliability analysis was also done to measure internal consistency. Results: In this study, the final model of ES-M consisted of 4 factors with 23 items, compared to the original version that has 5 factors with 25 items. The finding revealed satisfactory fit indices (RMSEA=0.045, SRMR=0.049, CFI=0.923, TLI=0.913) and overall Cronbach alpha (α=0.90). Conclusion: The study revealed, a 4-factor model with 23 items of the ES-M has satisfactory psychometric properties. The overall scale is valid and reliable to measure construct empowerment among patients with mental illness in Malaysia.

Keywords: Factor Analysis, Empowerment, Psychiatric Rehabilitation, Psychometric, MENTARI

Introduction

Since decades ago, various definitions and concepts of empowerment have been introduced including by the World Health Organization (WHO). Empowerment

according to the WHO is the level of options, involvement, and power that patients with mental illness acquired over their daily life events [1]. It is a process of capacity building, whereby a person developed a belief, responsibility, and ability to execute his plan based on the decision he has made earlier [2].

Empowerment can be developed through recovery-oriented approaches organized by the community mental health services.[3) It facilitates community integration, improves participation as well as strengthen the social and political power of people with mental illness that utilize the services [4, 5].

Research conducted by consumer-run organizations revealed an increment and positive progress in the development of personal empowerment when patients with mental illness actively participate in the skills sharpening and challenging activities [6].

The empowerment concept has been a construct in psychiatric researches that is interrelated to the idea of recovery [7]. It is associated with the condition where patients will mental illness experienced fewer symptoms and affiliated stigma as well as actively engaging in daily activities and community life [8]. Empowered patients with mental illness will acquire greater self-growth, regaining autonomy, and achieving meaningful life while living with a mental illness within the community [9].

Few studies reported that empowerment is positively related to self-esteem, perceived good quality of life, and social support. It also contributed to the improvement of the affiliated stigma and the severity of the psychiatric symptoms exhibited by patients with mental illness [10]. Meanwhile, continuous discrimination and

stigmatization of patients with mental illness by society would cause "disempowerment" among them and would further decelerate the recovery process [11]. At present, the recovery model that emphasized empowerment received good feedback and reports for the positive impact that had been contributed to the service development around the world [7, 12].

In Malaysia, the Ministry of Health Malaysia (KKM) initiated community mental health centres (MENTARI) which run the psychiatry rehabilitation services in the community as an attempt to improve outreach and re-integration of patients with mental illness [13, 14]. MENTARI has provided a platform for psychiatric services in Malaysia to shift from curative to preventive and recovery-based treatment [13].

The initial Empowerment Scale consists of 28 items scale that measured five-factor structures which are self-esteem and self-efficacy, power-powerlessness, community activism and autonomy, optimism and control over the future as well as righteous anger. It was developed to measure the personal construct of empowerment. Revised 25 items of the Empowerment Scale was produced when 3 items were removed from the initial scale when it was validated in 2010 [15]. This scale has been translated and subjected to psychometric analysis across countries such as Sweden [16], the Netherlands [17], Portugal [18], and Japan [19, 20].

In conjunction with the current treatment goal which is not to only improve patients with mental illness from the acute symptoms and crisis, but also to bring them to the functioning level and subsequently back to function in the community. Research on the cognitive construct of empowerment has led

to a better understanding of consumer perceptions about effective services and their quality of life [21]. For the past 20 years, the Western world and the social care societies had shown an overwhelming interest in tackling the empowerment aspect of psychiatric patients to promote and encourage recovery [22].

Despite this being a common construct of empowerment among consumers of mental health services across the world, there is still no local study to provide the basic data on empowerment among patients with mental illness. For that, it is essential to use a validated measurement scale. Thus, this study aimed to validate the Malay version of the revised 25-item ES among patients with mental illness attending psychiatric rehabilitation services in East Coast Malaysia.

Methods

Study Designs and Procedures

This cross-sectional study was conducted at several MENTARI community mental health centres at government hospitals in the East Coast of Malaysia from December 2019 to April 2020. A total of 240 participants aged 18 years and above were recruited into the study through a non-probability sampling method. All of these were patients with mental illness in the outpatient community setting who attended psychiatry rehabilitation services. Written consent was obtained before the participant took part in the study. Illiterate participants were excluded from the study. The study protocol was approved by the Human Research Ethics Committee of Universiti Sains Malaysia (USM) [approval reference: USM/JEPeM/19090515] and the Medical Research and Ethics Committee of Ministry of Health Malaysia [approval reference: NMRR-19-3215-50102 (IIR)].

Measures

Socio-demographic Questionnaire

Socio-demographic characteristics of interest included age, gender, ethnicity, marital status, education level, employment status, type of transportation, and psychiatric diagnosis.

Malay version of the Empowerment Scale (ES-M)

The Empowerment Scale (ES) was developed in 1997 by Rogers *et al* [23] and validated into a shortened 25-item version in 2010 which reported good internal consistency (α =0.82) [15]. This tool comprised of 25 items with 5 domains and was used to determine the level of personal empowerment among patients with mental illness. It has a 4-Likert scale ranging from "strongly agree to strongly disagree". An individual with a high score on the ES factor score indicates a high endorsement of that factor [18]. Among the questions are "I can pretty much determine what will happen in my life", "I have a positive attitude toward myself", "I see myself as a capable person", or "I am able to do things as well as most other people". The ES factors draw into 5-domain subscales namely; Self-esteem, Power-Powerlessness, Community Activism and Autonomy as well as Righteous Anger and Optimism and Control Over Future.

Instrument translation

The Malay language version of the Empowerment Scale (ES-M) was translated from the original English language version by bilingual experts of Malay and English using the forward and back-translation method [24]. Two competent bilingual psychiatrists reviewed the back and forward translations to determine whether the items

in the Malay version correspond to the items in the original English version. Expert panels assessed the content of the questionnaire to be culturally appropriate to the Malaysian population. The final version of ES-M was pre-tested among 10 participants at the psychiatry department Hospital USM for clarity and understanding. They were enquired to answer the questions and give their opinion on the wording and presentation of the questionnaire. The result of the pre-test was found to be good thus no amendment needed.

Statistical Analysis

The Statistical Package for Social Science (SPSS) version 22.0 software was used to analyse the respondent's socio-demographic data for descriptive statistics and internal consistency reliability. The cut-off value of > 0.7 was taken for Cronbach's alpha coefficient to be accepted.[25] Any item with factor loading < 0.4 is removed [25]. The M-plus8 software was used to analyse the data for Confirmatory Factor Analysis. The following indices were used to assess the

fitness model: root mean square error of approximation (RMSEA) with an acceptable level of < 0.08, standardized root mean square residual (SRMR) with an acceptable level of < 0.08, Tucker-Lewis fit index (TLI) with an acceptable level of > 0.95 and finally the comparative fit index (CFI) with an acceptable level of >0.95 [25].

Results

Socio-demographic characteristics of the study variables.

A total of 240 respondents attending psychiatry rehabilitation services at government hospitals in East Coast Malaysia were recruited for this study. The result of the data showed that the mean age (SD) of the participants was 36.51 (10.61) years old. Meanwhile, there is equal participation from both genders. A more detailed description of the study participants was provided in the background demographic data tabulated in Table 1.

Table 1. Demographic characteristics for study sample CFA

Variables	Mean (SD)	n (%)
Age	36.51 (10.61)	
Gender		
Male		119 (49.6)
Female		121 (50.4)
Race		
Malay		204 (85.0)
Chinese		31 (12.9)
Others		5 (2.1)
Education level		
Primary		28 (26.7)
Secondary		148 (61.7)
Diploma/ Degree		64 (26.7)
Marital status		

Divorced	15 (6.3)
Married	75 (31.3)
Single	150 (62.5)
Job	
Government staff	29 (12.1)
Housewife	27 (11.3)
Odd Job	33 (13.8)
Private staff	47 (19.6)
Retired	5 (2.1)
Self-employed	32 (13.3)
Student	18 (7.5)
Unemployed	49 (20.4)
Job status	
Full Time	93 (38.8)
Housewife	27 (11.3)
Part Time	48 (20.0)
Retired	5 (2.1)
Student	18 (7.5)
Unemployed	49 (20.4)
Diagnosis	
Psychotic disorder	119 (49.6)
Bipolar disorder	40 (16.7)
Depressive disorder	38 (15.8)
Anxiety disorder	32 (13.3)
Others	11 (4.6)

Validity by confirmatory factor analysis

CFA was used to examine the validity of the ES-M. As shown in Table 2, the CFA of a 25-item five-factor model revealed that fit indices for Model-1 were not within acceptable threshold values except for RMSEA and SRMR. To improve the fit indices, the factor loading of each item, and the MI value was then inspected. Several model re-specifications were done interactively by deleting problematic items from the measurement model (Q15 and Q25), resulting in Model-2. After re-specifications in Model-2, the re-computed fit indices were much improved but not yet fit. Thus, the final measurement model (Model-3) was done by combining SE and OCF domain as suggested by Mplus8 (higher correlation). Fit indices concluded by Model-3 still not achieved ideal fit, but it showed better fit indices as compared to earlier models with values of RMSEA=0.045, SRMR= 0.049, CFI=0.923, and TLI=0.913. More detailed data are presented in Table 2.

Table 2. Summary for the scale model fit indices

Path model	RMSEA (90% CI)	CFI	TLI	SRMR
Model-1	0.048(0.039,0.057)	0.903	0.890	0.052
Model-2 [a]	0.046(0.036,0.056)	0.920	0.908	0.048
Model-3 [b]	0.045(0.035,0.055)	0.923	0.913	0.049

Model-2 [a] with reduced items, Q25, Q15

Model-3 [b] with combined domains, SE & OCF

Table 3 shows all the standardized factor loadings that exceeded the threshold value of 0.40 except for a few items (Q9 & Q10). The CR values for model-3 showed greater than 0.70 for domain SE and PP which indicated acceptable constructs reliability [26]. For domains CAA and RA, both revealed the CR value of 0.575 and 0.511 respectively. The CFA model of the questionnaire is illustrated in Figure 1.

Table 3. Standardised Factor Loading of CFA

Constructs/items	Model 1		Model 2		Model 3	
	λ	CR	λ	CR	λ	CR
SE		0.832		0.833		0.863[c]
Q4	0.630		0.631		0.633	
Q5	0.650		0.650		0.651	
Q8	0.713		0.710		0.710	
Q11	0.633		0.634		0.637	
Q13	0.664		0.666		0.666	
Q16	0.489		0.491		0.491	
Q17	0.647		0.651		0.651	
Q21	0.467		0.467		0.463	
Q23	0.450		0.448		0.449	
PP		0.728		0.733		0.733
Q7*	0.583		0.590		0.590	
Q14*	0.744		0.753		0.753	
Q15	0.392		-		-	
Q19*	0.726		0.725		0.725	
Q20	0.482		0.468		0.468	
CAA		0.583		0.575		0.575
Q2	0.557		0.548		0.511	
Q10	0.372		0.374		0.366	
Q18	0.413		0.410		0.418	

Q22	0.523		0.521		0.528
Q24	0.441		0.449		0.440
Q25	0.291		-		-
OCF		0.585		0.585	
Q1	0.703		0.702		0.697
Q12	0.581		0.582		0.572
RA		0.511		0.511	0.511
Q3	0.460		0.472		0.473
Q6	0.680		0.668		0.669
Q9	0.373		0.374		0.372

Note: λ=standardized factor loading, CR =construct reliability, all factor loadings were statically significant at p<.050. SE= Self-esteem and self-efficacy, PP= Power-powerlessness, CAA= Community activism & autonomy, OCF= Optimism and control over the future, and RA= Righteous anger. [c] CR value after combine with OCF items.
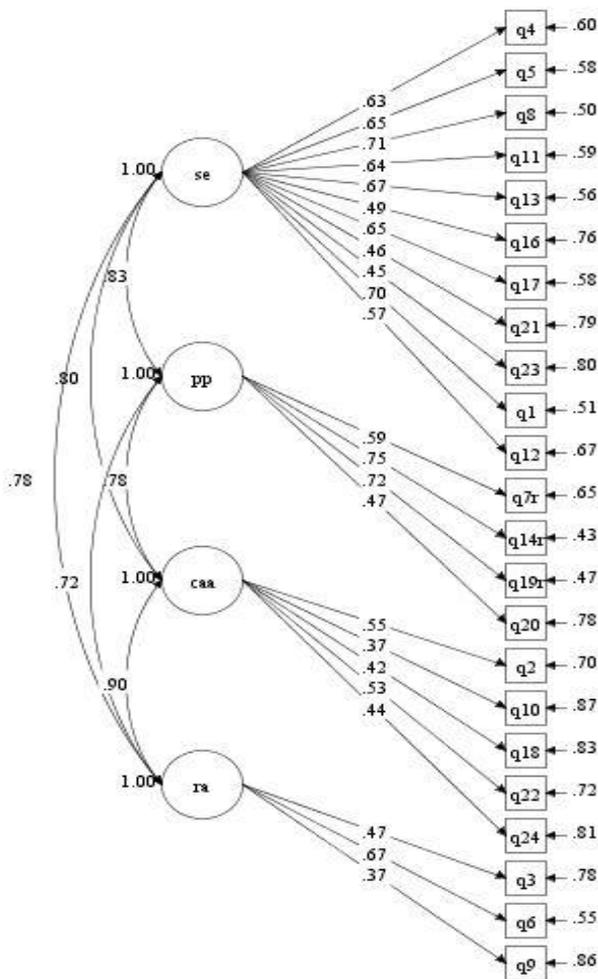
Figure 1. Model of the 23-item four-factor domains of ES

Convergent validity

The convergent validity was checked based on the correlations among the latent variables which were found to be moderate. The result was as illustrated in table 4. This fulfilled the criteria of convergent validity.

Table 4. Convergent Validity Among Latent Variables of CFA for the scale

Constructs/ Pearson correlation coefficient, r (*p-value*)	1	2	3	4
SE	1	0.649	0.559	0.523
PP		1	0.543	0.461
CAA			1	0.493
RA				1

Internal consistency

The Cronbach alpha of each domain in the new model solution ranged from fair to good (self-esteem, α = 0.864; power powerlessness, α = 0.730; community activism and autonomy, α = 0.575; righteous anger, α = 0.506. The overall ES-M reliability i.e., internal consistency was α = 0.90 as presented in Table 5.

Table 5. Descriptive statistics and Cronbach's alpha for the ES-M

Domain/factor	Items	Mean (SD)	Cronbach alpha (α)
SE			0.864
	Q4	1.58(0.62)	
	Q5	1.64(0.66)	
	Q8	1.70(0.73)	
	Q11	1.58(0.66)	
	Q13	1.59(0.64)	
	Q16	1.56(0.56)	
	Q17	1.62(0.64)	
	Q21	1.61(0.55)	
	Q23	1.46(0.51)	
	Q1**	1.64(0.64)	
	Q12**	1.58(060)	
PP			0.730
	Q7*	1.77(0.72)	
	Q14*	1.92(0.82)	
	Q19*	1.82(0.78)	
	Q20	1.49(0.63)	
CAA			0.575

Q2	1.40(0.52)	
Q10	1.40(0.55)	
Q18	1.47(0.55)	
Q22	1.49(0.64)	
Q24	1.49(0.52)	
RA		0.506
Q3	1.50(0.57)	
Q6	1.45(0.64)	
Q9	1.43(0.55)	
overall Cronbach alpha		**0.900**

*reverse item
**combined item from OCF

Discussion

Empowerment is relatively a new concept in Malaysia that should be further explored in our local demographic setting. As far as the authors' knowledge, this is the first study in Malaysia that used the ES as a study tool. The development of ES-M is viewed as an essential steppingstone in discovering the empowerment concept among patients with mental illness in Malaysia. The nearest country in Asia that also use this ES was Japan in which it was adapted into the Japanese Language [19, 20].

In previous validation studies by the original author in 2010 and Portugal study in 2014, both studies produced five-factor construct domains which are Self-Esteem, Power Powerlessness, Community Activism and Autonomy, Optimism and Control Over the Future and Righteous Anger. Our study attempted to assess the reliability and validity of M-SE based on the five-factor model proposed in previous studies with a sample of 240 participants from 5 psychiatry rehabilitation services at government hospitals in East Coast Malaysia namely MENTARI which renowned to provide good psychosocial services to the patients with mental illness in the community. Our

respondents served as an essential representative of patients with mental illness in community-based treatment.

From socio-demographic data, both genders equally responded to our survey with females (49.6%) and males (50.4%). Malay is the majority race of the respondents (85%) and for the education level, most of our respondents were from secondary school education level (61.3%). In term of psychiatric illness, most respondents are patients with a psychotic disorder (49.6%) which is like a previous study in Portugal [18].

The overall Cronbach alpha for the new model solution is 0.90 while the value for Cronbach alpha in each domain was above 0.70 which is the minimum value to be considered as good reliability [28] except for CAA and RA. However, Brownlow *et al* stated, the Cronbach alpha more than 0.5 is still considered as acceptable [29]. Our finding is parallel with the previous validation study in Portugal and the original author where they obtained a satisfactory overall Cronbach alpha value and domains in their model achieved Cronbach alpha value of less than 0.7 [15, 18]. Thus, our

reliability analysis for internal consistency can be considered as good reliability.

Our factorial analysis revealed that the initial Model-1 has unsatisfactory fit analysis as it showed acceptable value for only RMSEA and SRMR. Model-2 was formed to improve the fit indices by removing problematic items from the measurement model. Item Q15 was removed as it was also removed in a previous validation study in 2014 as also having low factor loading [18]. Q25 was also removed as it showed the lowest factor loading compared to other items. The refined Model-2 showed slight improvement but still not yet fit.

Subsequently, the initial model was further refined into a 4-factor model namely, model-3 by combining the domain SE and OCF as suggested by Mplus8 based on their higher correlation. Items in both domains are relatable thus suitable for combination. Despite there are still two items that revealed low factor loading (Q9 and Q10), the overall result yielded a better 23 item model with better and adequate fit indices. Therefore, items with low factor loading are also acceptable [25].

Comparatively, our model-3 findings encountered similar quality issues to those in the original study [15] and Portuguese study in 2014 [18] in which their model fit statistics also revealed results that did not achieve the ideal standard for optimal quality. Thus, the result of the current analysis is still considered acceptable.

In terms of composite reliability of our final model-4 ES-M, the refined measurement confirmed only two domains (SE and PP) showed the CR value of more than 0.7 while the rest of the domains (CAA and RA) was observed to have less favourable outcome measure. This impairment in the CR values can be considered to be attributed to the circumstances that both CAA and RA had lower factor loading as compared to the earlier domains as well as the fact that RA contained less than three items in its domain [30,31]. Nevertheless, although according to the rule of thumb, the acceptable value for CR should exceed 0.7 [26], Fornell and Lacker suggested that a CR value greater than 0.5 is acceptable [27].

Model-3 with 23 items and a 4-factor model was finalized as the Malay version of the Empowerment Scale proposed in this study. It showed good psychometric properties and will be beneficial for further research in this area in the future as the population in Malaysia will be more familiar and comfortable to converse and communicate their perspective in the local language. As result, this will open more opportunities for intervention and improvement in the quality of life of patients with mental illness.

There were few limitations identified in the current study. As the empowerment concept has not been well established in Malaysia yet, there has never been any existing Malay language tool ever developed or validated into the Malay language to measure empowerment level. Thus, concurrent validity could not be explored in this study.

Apart from that, we could not proceed with test-retest reliability which is another substantial psychometric property as the scale completion was only administered once during this study. Besides, the result also may be limited due to the response bias by the respondents as the data collected was self-reported data whereby, the respondents may answer the questions in an ideal way to make themselves look good rather than reflecting their own experiences.

According to the demographic data collection, the study location only involved participants from one region in Malaysia which is the East Coast region. This may influence the actual result as undeniably there is a possibility of slight nuances in the Malay language used in another region of Malaysia.

This study can serve as a distinctive empowerment outcome measure among patients with mental health in Malaysia. It also opened an opportunity for other researchers to explore the concurrent validity between new empowerment measures among patients with mental illness in Malaysia and this ES-M as well as contributing to providing additional literature evidence for factorial analysis study of ES in the future. The scale will also add to the growing number of health and quality of life scales adapted for Malaysian use, such as Quality of Life for schizophrenia [32].

Conclusion

The Malay version of the Empowerment Scale (ES-M) is finalized as 23 items with a 4-factor model. Despite the ES-M requiring several refinements to achieve adequate fit indices, this study provided satisfactory reliability and construct validity to measure empowerment among patients with mental illness in Malaysia. The ES-M could be adopted for future study on construct empowerment among patients with mental illness in Malaysia so that connection could be made with international studies.

Acknowledgements

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Corresponding Author

Zahiruddin Othman

Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Tel: 019-9167783

Email: zahirkb@usm.my