VALIDITY AND RELIABILITY OF MALAY VERSION OF EMPOWERMENT SCALE AMONG PATIENTS WITH MENTAL ILLNESS ATTENDING PSYCHIATRIC REHABILITATION SERVICES IN EAST COAST MALAYSIA

DR AHMAD THANI BIN ABDUL AZIZ

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER IN MEDICINE (PSYCHIATRY)

UNIVERSITI SAINS MALAYSIA

2020

ACKNOWLEDGEMENTS

Bismillahirahmanirahim,

Alhamdulillah with Allah will, I have finished and completed this research project. I would like to express my gratitude to lecturers and colleagues at psychiatry department, Hospital Universiti Sains Malaysia for their continuous support.

I also would like to extend my appreciation to my family for the love and endless prayers all this while that with them, I found my courage and strength to endure this Master program journey. Thank you to all of you.

TABLE OF CONTENTS

LIST SYMBOLS, ABBREVIATIONS OR NOMENCLATURES

ES	Empowerment Scale
M-ES	Malay version of Empowerment Scale
HUSM	Hospital Universiti Sains Malaysia
USM	Universiti Sains Malaysia
MOH	Ministry of Health
MENTARI	Community Mental Health Centre
JEPeM	Jawatankuasa Etika Penyelidikan USM
NMRR	National Medical Research Review
SPSS	Statistical Package for Social Study
CFA	Confirmatory Factor Analysis
RMSEA	Root Mean Square Error of Approximation
SRMR	Standardized Root Mean Square Residual
TLI	Tucker-Lewis Index
CFI	Comparative Fit Index
SD	Standard Deviation
SE	Self Esteem
PP	Power Powerlessness
CAA	Community Activism and Autonomy
OCF	Optimism and Control Over Future
RA	Righteous Anger
CR	Construct reliability
α	Cronbach alpha
λ	Standardized factor loading

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRAK (BAHASA MELAYU)

Pengenalan: Salah satu langkah penting dalam menyediakan perkhidmatan kesihatan mental dan sosial yang baik adalah dengan cara membawa pesakit mental kembali ke kehidupan bermasyarakat. Antara kaedah paling dikenalpasti untuk mencapainya adalah dengan memupuk keperkasaan di kalangan pesakit mental yang mengikuti perkhidmatan rehabilitasi psikiatri. Setakat ini tiada borang kaji selidik dihasilkan untuk keperluan tempatan. Justeru, adalah perlu untuk membuat validasi borang soal kaji selidik ke dalam Bahasa Melayu bagi membolehkan kajian berkenaan ini dilakukan di kalangan pesakit mental di Malaysia yang kebanyakkannya fasih berbahasa Malaysia. **Kaedah:** Satu kajian rentas melibatkan seramai 240 orang pesakit mental telah dilakukan dari bulan Disember 2019 sehingga April 2020 di beberapa pusat perkhidmatan rehabilitasi psikiatri hospital kerajaan di kawasan Pantai Timur Malaysia. Skala Keperkasaan asal dalam Bahasa Inggeris diterjemahkan ke Bahasa Melayu menggunakan teknik hadapan dan terbalikkan oleh sekumpulan pakar. Peserta kemudiannya melengkapkan Skala Keperkasaan yang telah diterjemahkan. Validasi konstruk ditentukan menggunakan Confirmatory Factor Analysis manakala analisa kebolehpercayaan ditentukan dengan menilai Cronbach alpha. **Keputusan:** Model akhir Skala Keperkasaan versi Bahasa Melayu menpunyai 4 faktor bersama 23 item berbanding Skala Keperkasaan versi asal yang menpunyai 5 faktor bersama 25 item. Keputusan kajian menunjukkan indeks padanan yang memuaskan (RMSEA=0.045, SRMR= 0.049, CFI=0.923, TLI=0.913) dan nilai keseluruhan Cronbach alpha yang memuaskan (α=0.90). **Kesimpulan:** Kajian ini menunjukkan model 4 faktor bersama 23 item bagi Skala Keperkasaan versi Bahasa Melayu mempunyai ciri psikometri yang bagus dan adalah sah serta boleh dipercayai untuk digunakan di Malaysia bagi mengukur tahap keperkasaan di kalangan pesakit mental di Malaysia

ABSTRACT

Introduction: One of the substantial elements for mental health and social services nowadays is to bring patients with mental illness back to the community. Among the most established method identified to achieve this target is via empowerment in the psychiatry rehabilitation service settings. So far, there is no validated questionnaire available for local population. Therefore there is a need to validate the Malay version of the questionnaire so that research can be conducted to explore on empowerment among patients with mental illness in Malaysia whom most of them are fluent to converse in Malay language. **Methodology:** A cross sectional study, involving 240 patients with mental illness, was conducted from December 2019 until April 2020 at several psychiatry rehabilitation services in the government hospital in East Coast Malaysia. The original English version of Empowerment Scale was M-ES translated into Malay Language using forward and backward translation technique by a group of experts. Participants then completed the Malay version of Empowerment Scale. Data was analyzed for construct validity by performing confirmatory factor analysis. Reliability analysis was also done to measure the internal consistency. **Results:** In this study, final model of M-ES comprised of 4 factors with 23 items, compared to 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 satisfactory overall Cronbach alpha (α=0.90). **Conclusion** The study revealed that 4 factors model with 23 items of the Malay version of M-ES has satisfactory psychometric properties. The overall scale was considered to be valid and reliable to measure construct empowerment among patients with mental illness in Malaysia.

Keywords: *Factor Analysis, Psychiatric patients, Empowerment, Validity, Reliability, Psychiatry Rehabilitation Services*

CHAPTER 1

1. INTRODUCTION

1.1. Empowerment

Over the last 20 years, the concept of empowerment has been a construct of evidences among psychiatry fraternity for its contribution to the recovery process among patients with mental illness. (Corrigan, 2006; Hansson and Björkman, 2005; Lundberg et al., 2008) Empowerment is seen to be able to promote recovery among patients with mental illness who consumed the mental health services. (Jacobson and Greenley, 2001)

Empowerment was described as the ability of the individual to achieve control over all important aspect of their life including employment, relationship, financial matter as well as any issue related to their mental health well-being. (McLean, 1995; Segal et al., 1995) According to Alegria et all, empowerment is a capacity building process that occurred when a person developed belief and responsibility in attending to their problem as well as executing their plan based on the decision they have made earlier. (Alegría et al., 2008)

Meanwhile, WHO described as the level of options, involvement and power that patients with mental illness have over their daily life events. (Organisation, 2010) Regardless of the various definition of empowerment, it all address the multidimensionality and multi-level aspects of concepts as it is not only referring to individual aspect but also groups as well as community level (Jorge-Monteiro and Ornelas, 2014)

Psychiatry rehabilitation services that centred in the community is seen as ideal opportunity where empowerment can be developed among patients with mental illness. (Nelson, G., Kloos, B., & Ornelas, 2014) The organisation of recovery oriented

approaches in the community may able to facilitate the community cohesion and encourages involvement as well as strengthen the social and political power among patients with mental illness who utilise the services (Ornelas, J., Vargas-Moniz, M, & Duarte, 2010; Wakefield et al., 2011) It also had been revealed there is increment and positive progress in the development of personal empowerment when patients with mental illness actively participate in the skills sharpening and challenging activities (Brown, 2009; Nelson and Lomotey, 2006; Segal et al., 2011)

Thus, the collaboration between community and governmental or public organisation is encourage to facilitate the empowerment and subsequently facilitate patients with mental illness in achieving recovery (Maton and Brodsky, 2011)

The focus on the social work aspect that was emphasized in the concept of empowerment is seen congruent with the function of psychiatry rehabilitation services which is to work towards recovery and restoring back patients with mental illness to the regular level of community functioning. (Stromwall and Hurdle, 2003) In the end, with higher empowerment level, patients with mental illness will experience lesser symptoms and affiliated stigma and at the same time, they will engaging better in the daily activities life in the community. (Bejerholm and Björkman, 2011)

Greater empowerment level had been reported to be positively related to self-esteem, perceived good quality of life and social support. It also contributed in the improvement of the affiliated stigma and the psychiatric symptoms severity experienced by patients with mental illness. (Lundberg et al., 2008) In the current era, the concept of empowerment is a significant aspect that can be explored and tackled on for the better outcome in mental health system.

1.2. Justification of study

Understanding that empowerment may contribute to the better outcome in the recovery process has important implication for the treating doctor. Research in this area is necessary because it provides better understanding and evidence about the significance of empowerment in improving and assisting patients with mental illness towards achieving recovery (Lundberg et al., 2008) In the recent year, study in this field has shown an increased pattern in the West as there are overwhelming awareness in tackling the empowerment aspect of psychiatric patients to promote and encourage recovery (Jorm, 2012) Furthermore, patients with mental illness with known empowerment level may benefit from necessary and appropriate intervention that can be planned for them accordingly to promote their recovery.

However, there is scarce local study to provide the basic data on empowerment among patients with mental illness in Malaysia. As far as the author's knowledge, there was no validation study of Malay version of the Empowerment Scale has been done which is seen to be fundamental as it may serve as a platform for Malaysian to express themselves better in term of empowerment in the future.

As empowerment is still a new concept, the availability of M-ES is beneficial for the researchers to gain rather true presentation from the participants as they would understand it better in their daily use language as compared to when English medium is used. As result, the M-ES would enable researchers to understand and explore further regarding this concept among patients with mental illness in Malaysia. Thus, health professionals would be able to produce more effective ways or therapy to unleash the greater impact among the target population.

In Malaysia, the Ministry of Health Malaysia (MOH) initiated a community mental health centre (MENTARI) which run the services in the community as an attempt to

improve outreach and re-integration of patients with mental illness. Through MENTARI, psychiatry services collaborate with many governmental and non-governmental bodies to build more linkages for the benefit of patients with mental illness. (Network, 2020)

Among the services available in MENTARI includes Individual Placement and Support Supported Employment (IPS-SE); Assertive Community Treatment as well as support groups for patients with mental illness and their carers. MENTARI has provided a platform for psychiatric services in Malaysia to shift from curative to preventive and recovery-based treatment. (Network, 2020)

1.3. Objective

1.3.1. General objective

i. To validate the Malay version of Empowerment Scale

1.3.2. Specific objective

i. To translate the translate the ES into M-ES
ii. To determine the construct validity of M-ES using CFA
iii. To determine reliability of M-ES using Cronbach's alpha

1.4. Methodology

A cross sectional study was conducted from December 2019 to April 2020 among 240 patients with mental illness attending psychiatry rehabilitation services at government hospital in East Coast Malaysia using a set of self-rated questionnaires consisting of sociodemographic profile and the M-ES. The data was analyzed using Statistical Package for Social Study (SPSS) and Mplus8

1.5. Dissertation organization

This dissertation is arranged according to the Format B Manuscript ready format based on the guideline by Postgraduate Office, School of Medical Sciences (2016). Chapter 2 is the study protocol that has been submitted for ethic approval. Chapter 3 consists of the manuscript of "Validation of Malay Version of Empowerment Scale among Patients with Mental Illness Attending Psychiatry Rehabilitation Services in Malaysia". The raw data is included in the attached CD

CHAPTER 2

2. STUDY PROTOCOL

2.1. Introduction

Every year the burden of mental disorder continues to increase, and this had caused significant consequences to the health, social, human rights and economic impacts in all countries of the world. Depression was reported to be as one of main causes of disabilities worldwide as it affects nearly 300 million people globally. Meanwhile, bipolar disorder and schizophrenia had affected approximately 60 million and 23 million people respectively worldwide. (Organisation, 2018)

In European Mental Health Action Plan 2013 – 2020, development and implementation of national policies and plans had been established to pursue a health system strengthening approach that addresses needs across the full spectrum of mental health services and delivery platforms. Among 3 major objectives suggested are: (Organisation, 2015)

1. the deinstitutionalization of mental health care;
2. the integration of mental health in general health care; and
3. the development of community-based mental health services.

As the result of most asylum and mental institutions closure all over the world, many patients with mental illness live independently in the community now. However, due to lack of engagement and mutual relationships among the community, most of them ended up being isolated and live in their own world. Such living condition and environment contribute more to negative outcome rather than positive outcomes among patients with mental illness. They were noticed to have frequent relapse episodes and have lower quality of life as compared to those who live in better social inclusion community. (Jacob, 2015)

The role of community mental health services is essential in assisting patients with mental illness when they are adapting themselves back into the community environment once being discharged from the hospital. This transmission from hospital-based setting to the community based setting could be very challenging to patients with mental illness especially those who had been in the hospital for quite long time.

One of the ways that can be done to help patients with mental illness through the psychiatry rehabilitation services is by providing them with the essential skills needed to practice an independent living in the community. (Spaniol et al., 2002) They also can be assisted by guiding them in identifying their preferred roles in the community as well as to be the middle person to link them with the opportunities where they can practice their preferred and expertise roles. (Farkas and Anthony, 2010; Rössler, 2006)

2.2. Literature Review

In the current era of psychiatric world, there has been a paradigm shift that focuses on the recovery orientated care which emphasizes more on personal, clinical and functional dimensions of recovery. (Slade, 2010) A promising recovery integrates an approach that involved elements of self- sufficiency, empowerment, integrity as well as equality of opportunity for living, working, learning and contributing in the community regardless of one's limitations and inexperience because of any impairment or disability. (Hill et al., 2019) Even in our modern society, there are still patient with mental illness that been denied from participating in the community such as through education, employment, recreation, relationship and adequate housing. (Harvey and Gumport, 2015) As result of this social exclusion, the goal accomplishment towards recovery had always been delimited.

Over the past decades, psychiatric rehabilitation services had been shaped according to the recovery concept to enable patients with mental illness to recover and live as normal life as possible in the community. (Liberman and Kopelowicz, 2005) Several professions, such as occupational therapy, have also revamped their services over the years to adopt a more recovery-oriented approach. (Lloyd and Williams, 2009) This encouraged patients with mental illness in making progress towards participating in the social relationships and involved in employment responsibilities to achieve an independent living as the measures are necessary for community inclusion. (Cusack et al., 2017)

Psychiatry rehabilitation service is seen as the right medium for the recovery process to take place among patients with mental illness as it is not only aid to improve patient's function and promotes acceptance in the community but also expands their quality of life. Through the proper provision of the services, it provides patients with mental illness with a better life prospect and meaningful social living. (Killaspy et al., 2005) The concept applied in psychiatry rehabilitation service is seen to be more about working together with the patients with mental illness rather that working for them. (Killackey et al., 2015)

Psychiatry rehabilitation service was initiated in the beginning to focus on assisting patients with mental illness to achieve life goals that was known to be much deteriorated due to the disturbance of the symptoms and functionality. (Killackey et al., 2015) Via the programs, psychiatry rehabilitation service promotes patients with mental illness to acquire essential living skills as well as to encourage their sovereignty, empowerment and to assist them to get involved in making decisions for themselves. As consequences, the deficits in social and their function in the society would be slowly mended. (Bartels and Pratt, 2009; Kern et al., 2009)

Empowerment

One of the fundamental elements for mental health and social services is to bring patients with mental illness back to the community so they may recuperate their roles in the society, contribute in conventional neighbourhood routines and optimize opportunity to thrive along with everyone else. By getting back to the society in the sense of involvement in the social, educational, volunteering and employment offers huge advantages in the individual recovery process. (Jacob, 2015) Among the most established method identified to achieve this objective is via targeting and promoting the application of empowerment concept.

Empowerment was already introduced long ago where it was described as situation when the individual controlled over all aspects of their life, not necessarily related to mental health issues but also in any other important life events decisions such as employment, relationship and financial matter. (McLean, 1995; Rappaport, 1987; Segal et al., 1995) It was also defined as a process by which power is cultivated in a person to facilitate the individual capability of making decision on their own behalf. (Staples, 1994)

The term empowerment was modified from Staple's to make it more relevant with health care system. It was reinstated as a process of capacity-building whereby, a person developed belief and responsibility to participate actively in solving their problem and making life decisions as well as to be able to execute their plan based on the decision they've made earlier. (Alegría et al., 2008) Meanwhile empowerment is described as the level of options, involvement and power that patients with mental illness have over their daily life events as per WHO. (Organisation, 2010)

Empowerment can be developed through recovery oriented approaches organised by the community mental health services. (Nelson, G., Kloos, B., & Ornelas, 2014;

Nelson et al., 2001) It may facilitate community integration, improves participation as well as strengthen the social and political power of people with mental illness that utilise the services (Chamberlin and Schene, 1997; Ornelas, J., Vargas-Moniz, M, & Duarte, 2010; Wakefield et al., 2011) Community based research encouraged the collaboration between the community and any government or public organisational participation to foster the developmental process of personal, social and civic empowerment which may accelerate the recovery

progression among patients with mental illness. (Maton and Brodsky, 2011)

Research conducted by consumer-run organisations also had 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. (Brown, 2009; Nelson and Lomotey, 2006; Segal et al., 2011)

Evidence of empowerment

Since decades ago, mental health organizations had begun to recognize the benefits of empowerment for patients with mental illness. (Geller et al., 1998) It has been a construct of evidences in psychiatric researches for over the last two decades that related to the idea of recovery. (Corrigan, 2006; Hansson and Björkman, 2005; Lundberg et al., 2008; E. Sally Rogers et al., 1997; Rosenfield, 1992) The concept of empowerment had been identified to be one of the successful key condition in the process of achieving recovery among the patients with mental illness who consumed the mental health services. (Jacobson and Greenley, 2001)

The main agenda of empowerment which emphasized on the social work profession is seen to be compatible in the conjunction with psychiatry rehabilitation service which is working towards the recovery and bringing back to the regular level of community functioning. (Stromwall and Hurdle, 2003) As time passed by,

empowerment is associated with the condition where patients will mental illness experienced fewer symptoms and affiliated stigma as well as actively engaging in the daily activities and community life. (Bejerholm and Björkman, 2011)

Once the empowerment concept grasped, the patients with mental illness will acquire greater self-competence and confidence as well as the optimism and positive thinking which subsequently will result in reduction of isolation as they felt more comfortable and had the sense of belongings to live together with greater sense within the community. (Lord and Hutchison, 1993; Zimmerman, 2001)

Apart from that, few studies had reported empowerment had been positively related to self-esteem, perceived good quality of life and social support. Empowerment was reported to contribute in the improvement of the affiliated stigma and the psychiatric symptoms severity exhibited by patients with mental illness. (Lundberg et al., 2008)

In nutshell, empowerment is viewed to be one of the essential strength towards achieving recovery that without it, patients with mental illness may lose control and direction over their life. This cohort of individual is seen to be less likely to succeed later on in their life. Moreover, if there is discrimination and stigmatisation of patients with mental illness by the society continuously to occur it would cause "disempowerment" among them and would further decelerate the recovery process. (Aggarwal, 2016)

Empowerment model of recovery

The empowerment model of recovery was idealised upon the principles that resulted from various sources of successful experiences of the patients with mental illness in achieving recovery as well as in the independent living movement.

(Chamberlin and Schene, 1997; Deegan, 1992; Segal et al., 2013) It provides a platform for promoting health by stimulating the responsibility and self-accountability among patients with mental illness who involved in the psychiatry rehabilitation services facilities available for them. (Fisher, 1993)

Nowadays, empowerment has become an important part of the recovery model apart from other approaches such as the subjective experiences of optimism, interpersonal guidance, reducing the stigma as well as the collaborative treatment strategies to encourage and promotes patient's engagement and active roles in the activities provided. This recovery model had received good feedback and reports for the positive impact that had been contributed to the service development around the world. (Warner, 2009) Furthermore, the empowerment and the participation as active roles in the community-run organisation had been proven to be positively related to the recovery progress among patients with mental illness. (Brown, 2009)

Empowerment scale

The assessment and measurement of empowerment is undeniably a delicate task because it is subjective and difficult to describe as it takes various forms in different contexts (Rappaport, 1987) E. Sally Rogers in 1997 had developed the Empowerment Scale in a participatory study with 261 participants from self-help groups. (E. Sally Rogers et al., 1997)

This self-rated 28 items scale measured five factor structures which are self-esteem and self-efficacy, power-powerlessness, community activism and autonomy, optimism and control over future as well as righteous anger. It was developed to measure the personal construct of empowerment. Participants rated the extent subjective feelings of empowerment on a 4 points Liker scale ranging from "strongly agree" to "strongly disagree" with a higher score indicating a higher empowerment level among

patients with mental illness. The empowerment scale achieved excellent consistency, internal reliability and validity with Cronbach's alpha of 0.86. (E. Sally Rogers et al., 1997)

In 2010 the ES five-factor solution was further validated in a study with a large number of participants (n=1827) from a multisite consumer-operated services research project. The confirmatory factor analysis identified 3 items to be removed from the initial empowerment scale. The revised 25 items version for the measurement of empowerment among patients with mental illness still maintained good reliability for overall scale with Cronbach alpha of 0.82. (E. S. Rogers et al., 2010)Empowerment Scale since then has been among the most frequently cited instruments to measure empowerment in the literature as their reliability and validity have already been established for people with mental illness (Castelein MSc et al., 2008)

Adaptation of empowerment scale cross culturally

From the review of existing literatures, the Empowerment Scale has been translated and subjected to psychometric analysis across Europe such as in Sweden (α = .84) (Hansson and Björkman, 2005), Netherlands (α = .82) (Castelein MSc et al., 2008) and in Portugal (α = 0.79) (Jorge-Monteiro and Ornelas, 2014) The empowerment scale also has become subject of interest for research in the Japan (α = .82) (Hata et al., 2003; Yamada and Suzuki, 2007)

2.3. Justification to Conduct the Study

The current treatment goal 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. (Corrigan and Garman, 1997) Since 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. (Jorm, 2012)

Despite there is a common construct of empowerment among consumers of mental health services across the world, there is scarce of local study to provide the basic data on empowerment among patients with mental illness. Furthermore, there was no validation study M-ES which could be essential and very handy as it may serve as a platform for Malaysian to express themselves better in term of empowerment in the future.

The M-ES would enable researchers to understand and appreciate more how empowerment may affect patients with mental illness that are using community mental health services in Malaysia. As result, health professional would be able to produce more effective ways or therapy to unleash greater impact among the target population.

2.4. Objectives

2.4.1. General Objectives

i. To validate the M-ES

2.4.2. Specific Objectives

i. To translate the revised 25 item ES into M-ES

ii. To determine the construct validity of M-ES using CFA

iii. To determine the reliability of M-ES using Cronbach's alpha.

2.5. Research Question

Is the M-ES a valid and reliable measurement tool for patients with mental illness in Malaysia?

2.6. Research Hypothesis

The M-ES is valid and reliable and comparable to the original version to be used for patients with mental illness in Malaysia

2.7. Conceptual Framework

Figure 1 showed the general overview of possible factors associated with empowerment among patients with mental illness attending psychiatric rehabilitation.

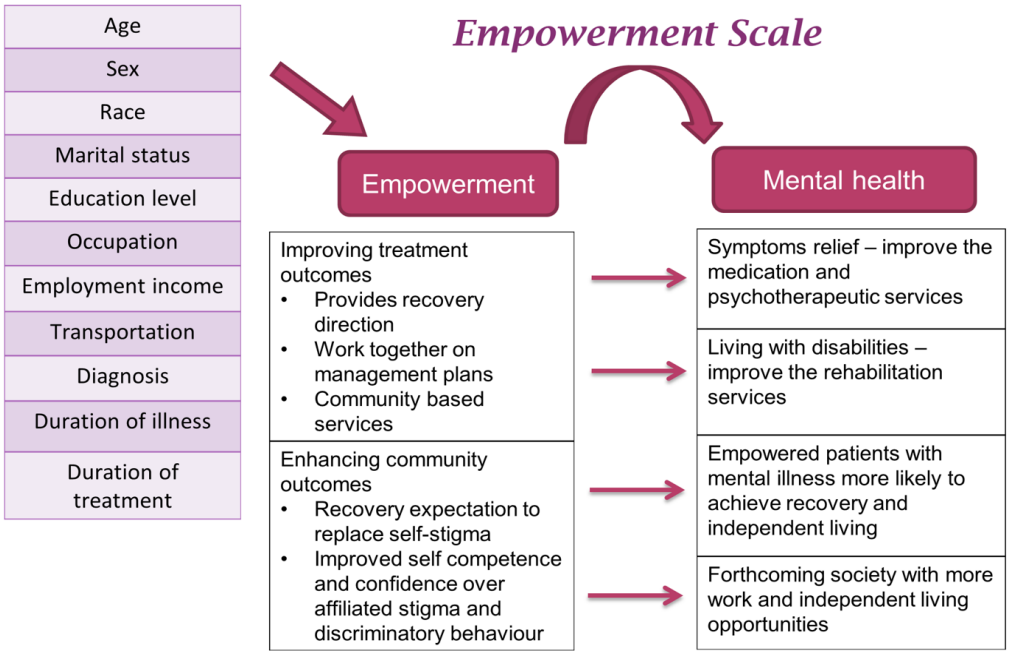

Figure 1: Conceptual Framework

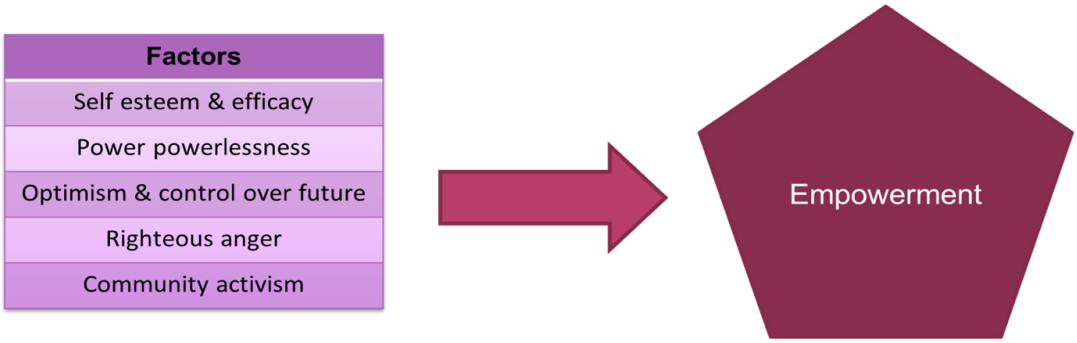

Figure 2: General overview of factors that load for empowerment among patients attending psychiatry rehabilitation services in east coast Malaysia

2.8. Methodology

Majority of the patients at the study settings are literate in Malay language, thus to make it more applicable for local social and cultural context, it is required for the questionnaire to be translated in their native language.

2.8.1. Translation process

Empowerment Scale questionnaire was translated to Malay language and be denoted as M-ES using translation and back translation method based on the recommended translation guidelines. (Tsang et al., 2017)

Forward translation

Questionnaire was translated by one psychiatrist and one linguist who are bilingual in both language and blinded to the study. After the translation was done, the researcher reviewed the translated questionnaire and subsequently produce the first Malay version of the tool.

Back translation

Just as forward translation, the questionnaire was translated back from Malay to English by one psychiatrist and one linguist. The process was done independently without viewing the original English version of the questionnaire.

Comparison

Both original English version and translated Malay version of the questionnaire was then compared to determine the accuracy of the translation and whether the content appropriately suited the local culture and language norms. This was done with the supervision and advice from the linguistic experts at Pusat Bahasa dan Terjemahan Universiti Sains Malaysia

Pretest and Revision

The content validity of the translated pre-final M-ES was conducted by two experienced psychiatrists in the studied topic. Content validity index was measured for this purpose. (Yusoff, 2019) For the face validity, the translated M-ES was given to 10 respondents in HUSM. Feedback from them will be obtained to identify for possible misunderstanding or confusion of items in the questionnaires. The translation process was then reassessed to look for the measurement capability of the tool. Lastly, the finalised M-ES was determined and used in the study.

2.8.2. Study Design

Observational cross-sectional studies

2.8.3. Study Duration

Approximately 18 months from research project initiation until submission of final draft. The entire duration will cover the timeline for the research project initiation up until final draft submission. The tentative research timeline will be presented using Gantt chart below.

2.8.4. Study Location

This study will be conducted at several psychiatric rehabilitation services in east coast Malaysia which includes:

i. MENTARI USM, Kelantan
ii. MENTARI Ketereh, Kelantan
iii. MENTARI Balok, Pahang
iv. MENTARI Hospital Sultanah Nurzahirah, Terengganu
v. MENTARI Wakaf Tapai, Terengganu

2.8.5. Sampling Frame

i. Reference Population – the reference population will be patients with mental illness in Malaysia

ii. Source Population – the source population will be patients with mental illness attending psychiatry rehabilitation services in Malaysia

iii. Sampling Frame – the sampling frame for this study will be the patients with mental illness attending psychiatry rehabilitation services in east coast Malaysia

2.8.6. Selective Criteria

i. Inclusion Criteria

- Age 18 years old and above
- Able to read and communicate in Malay
- Stable patient with mental illness
- Patient with mental illness attending psychiatry rehabilitation service

ii. Exclusion Criteria

- Illiterate participant

2.8.7. Operational term

i. Mental illness – any health condition involving changes in emotion, thinking or behavior that causes the person distress and difficulty in functioning. (Association, 2018)

ii. Stable patient with mental illness – patient with mental illness in the outpatient community setting with no history of admission for the past 6 months duration.

2.8.8. Sampling Size Calculation

All objectives are considered for calculation for sample size determination.

- For Confirmatory Factor Analysis (Hair et al., 2010)
    - Given no of items = 25 with 5 domains
    - >3 item per construct + communality 0.45-0.55: minimum n= 200
    - with estimated of 20% non-response rate: 200 x 0.2 = 40
    - sample required n= 240

2.8.9. Sampling Method

All respondents will be selected via non - probability sampling from patients with mental illness attending psychiatry rehabilitation services in Malaysia.

2.8.10. Study Procedure

i. Method of Data Collection

Data collection process is started once the study is approved by the ethics committee.

i. Patients with mental illness attending psychiatric rehabilitation services in Malaysia will be selected via nonprobability sampling method.

ii. All subjects will be screened and those who fulfilled the inclusion and exclusion criteria are chosen.

iii. Trained clinical research data coordinator will explain the purpose and nature of the study to chosen subjects. The benefit and possible risk from participating in the study will be also explained. Participant may understand how empowerment can affect the course of their mental illness and may also possibly experience psychological distress after completing the questionnaires.

iv. Any suspected participant to have any psychological distress will be offered referral to the nearest health clinic or to their treating psychiatry doctor for further assessment and necessary treatment. All recruited volunteer participants will be given a sheet of information regarding the research for their reference. If they are interested, written consent will be obtained from them.

v. Once consent obtained, participants will be asked to complete 2 questionnaires M-ES and sociodemographic questionnaire on their own to avoid bias.

vi. All subjects will be allocated 30 minutes to answer the questionnaires in a specific area at the psychiatric rehabilitation services.

vii. Should any assistance needed during the form completion, the clinical research data coordinator will be around for further clarification. Once the subject completed the set of questionnaires, it will be returned to the researcher for further evaluation.

2.8.11. Flow Chart of the Study

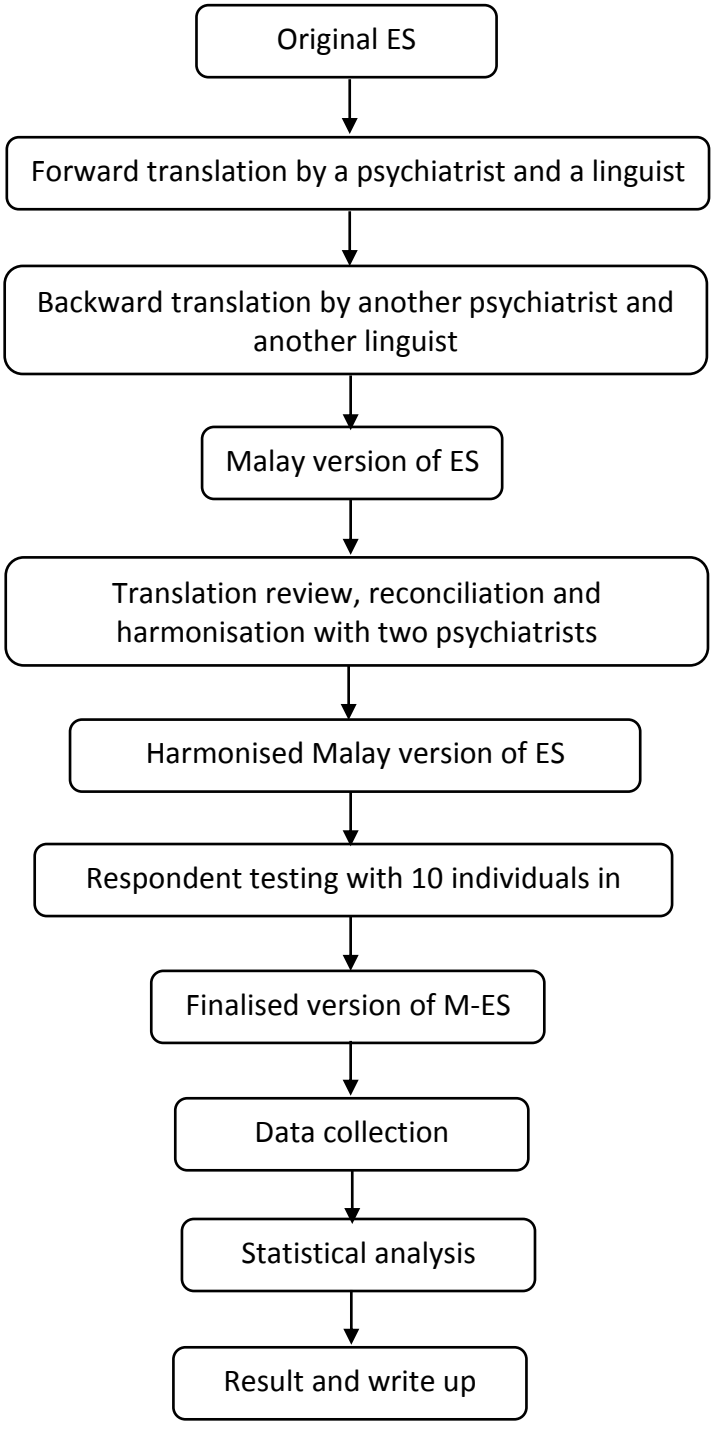

figure 3: study flow

Note: ES= Empowerment Scale; HUSM = Hospital Universiti Sains Malaysia

2.8.12. Research Instruments

i. Socio-demographic Profile

Respondents were asked to identify their age, sex, race, marital status, education status, employment status, household income and their transportation to psychiatric rehabilitation services as well as their diagnosis and year of their diagnosis.

ii. Malay version of Empowerment Scale

ES was developed by ES Rogers et al (1997) to measure personal construct of empowerment in persons with mental disorders. It is self-administered questionnaires consisted of 28 items with 5 domains on a 4 points Likert scale ranging from "strongly agree" to "strongly disagree". Current study used the 25-items shortened version, which has reported good internal consistency with Cronbach's alpha coefficient of 0.82. (E. S. Rogers et al., 2010) The total in the scores for all 25 items to produce a sum ranging from 25 to 100 in which higher scores indicates a high level of empowerment

2.8.13. Plan to Minimize Bias

Each explanation in this study will be performed by the primary researcher to ensure consistency in method and reliable results. It is a self-rated scale and the patients with mental illness should return the form within the same day. The patient with mental illness will be provided a room to fill the form at the study site.

2.8.14. Data Entry and Analysis

All data collected will be analysed using SPSS 20.0 & Mplus8

- **Internal consistency** – Scores for each question will be measure its correlational coefficient with the domain score and total score. The Cronbach alpha value will be determined.

- **Construct validity** – Confirmatory Factor Analysis (CFA) will be performed

2.8.15. Study Variables

i. Dependent Variables: M-ES score

ii. Independent Variables

- Socioeconomic data: Age, Gender, Race, Education level, Employment status, Household income, Transportation.
- Clinical data: Diagnosis, Year of diagnosis

2.9. Expected Results

Table 1: Demographic characteristics for study sample

Variables	Mean (SD)	n(%)
Age		
Gender		
Male		
Female		
Race		
Malay		
Chinese		
Others		
Education level		
Primary		
Secondary		
Diploma/ Degree		
Marital status		
Divorced		
Married		
Single		
Job		
Government staff		
Housewife		
Odd Job		
Private staff		
Retired		
Self-employed		
Student		
Unemployed		
Job status		
Full Time		
Housewife		
Part Time		
Retired		
Student		
Unemployed		
Transport		
Car		
Motorbike		
None		
Public transport		