PERCEIVED STIGMA AMONG SCHIZOPHRENIA PATIENTS ATTENDING PSYCHOSOCIAL REHABILITATION IN KELANTAN

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LIST OF SYMBOLS, ABBREVIATIONS OR NOMENCLATURES

PSR	Psychosocial Rehabilitation
DDS-M	Devaluation-Discrimination Scale-Malay version
HUSM	Hospital Universiti Sains Malaysia
HRPZ II	Hospital Raja Perempuan Zainab II
HSIP	Hospital Sultan Ismail Petra
BPRS-E	Brief Psychiatric Rating Scale-Extended version
PSP	Personal and Social Performance Scale
SPSS	Statistical Package for the Social Sciences
SLR	Simple Linear Regression
MLR	Multiple Linear Regression
CBT	Cognitive Behavior Therapy
QOL	Quality of Life
SR	Systematic Review
DSM	Diagnostic and Statistical Manual of Mental Disorders
GCP	Malaysian Good Clinical Practice Guidelines
JKNK	Jabatan Kesihatan Negeri Kelantan

ABSTRAK

Pengenalan: Stigma dan diskriminasi menjadi beban yang besar dalam pengurusan kesihatan mental kepada pesakit mental kronik. Stigma di dalam kesihatan mental boleh dibahagikan kepada stigma sosial dan stigma peribadi. Stigma peribadi ialah stigma yang dialami oleh pesakit mental itu sendiri yang mana terdiri daripada stigma dalam pemikiran dan stigma terhadap diri sendiri. Skizofrenia ialah satu penyakit mental kronik yang mendapat stigma dari masyarakat serta pesakit itu sendiri. Evolusi perkembangan pusat rehabilitasi psikososial untuk pesakit mental kronik di Malaysia bermula pada awal abad ke-20 dimana ia tertumpu kepada memberikan pertolongan kepada setiap pesakit melalui kaedah psikologi, sosial serta pekerjaan. Kajian ini dilakukan untuk menilai tahap stigma dalam pemikiran di kalangan pesakit skizofrenia yang mendapatkan rawatan rehabilitasi psikososial di Kelantan dan melihat kaitan antara tahap stigma dalam pemikiran dengan faktor sosiodemografi, ciri klinikal dan fungsi psikososial pesakit. **Kaedah:** Kajian keratan rentas ini melibatkan 90 pesakit skizofrenia yang menghadiri rawatan rehabilitasi psikososial di negeri Kelantan di mana mereka diberikan set soalan Devaluation-Discrimination Scale–versi Melayu (DDS-M), Brief Psychiatric Rating Scale-Extended version (BPRS-E) dan Personal and Social Performance Scale (PSP) untuk penilaian. Data diambil melalui pensampelan rawak dan dianalisa untuk melihat faktor yang berkait dengan tahap stigma dalam pemikiran menggunakan *regresi linear ringkas* dan *regresi linear berganda*. **Keputusan:** Skor purata utk DDS-M ialah 2.70 (SD 0.388). Dikalangan 90 orang subjek, 59 mempunyai stigma yang lebih tinggi dari titik tengah, sementara 31 memperolehi skor kurang dari titik tengah. Keputusan kajian mendapati tahap stigma dalam pemikiran pesakit berkait secara negatif dengan umur dan kemurungan, manakala tahap stigma dalam pemikiran

berkait secara positif dengan sejarah status pekerjaan pesakit sebelum terlibat dengan rawatan rehabilitasi psikososial (p-value 0.012, 0.011 dan 0.028). **Kesimpulan:** Stigma dalam pemikiran di kalangan pesakit skizofrenia yang menghadiri rawatan rehabilitasi psikososial di Kelantan adalah tinggi serta menunjukkan ianya berkait dengan faktor umur, kemurungan serta sejarah status pekerjaan pesakit sebelum terlibat dengan rawatan rehabilitasi psikososial. Program teraputik yang lebih lanjut diperlukan untuk menangani masalah stigma dalam pemikiran seperti Terapi Kognisi dan Tingkahlaku, skil menangani isu stigma serta latihan pekerjaan.

ABSTRACT

Introduction: Stigma and discrimination cause significant burden within mental health care for people suffering from mental illness. Stigma in mental illness can be divided into social (public) stigma and personal stigma. Personal stigma can be further divided into perceived stigma and self-stigma. Schizophrenia is the most disabling mental illness and highly stigmatized all over the world. The evolution of psychosocial rehabilitation (PSR) for people with severe mental illness in Malaysia started since the early 20th century which focused on helping individual patients through psychological, social and occupational techniques. This study aimed to assess the level of perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan and the association between perceived stigma level with sociodemographic factors, clinical features and psychosocial function. **Methods:** This was a cross-sectional study where 90 schizophrenia patients attending PSR in Kelantan were assessed using the Devaluation-Discrimination Scale-Malay version (DDS-M), the Brief Psychiatric Rating Scale-Extended version (BPRS-E) and The Personal and Social Performance Scale (PSP). The sample was randomly collected and analyzed for the association between level of perceived stigma and associated factors through simple linear regression (SLR) for initial screening then confirmed with multiple linear regression (MLR). **Results:** The mean score for the DDS-M was 2.70 (SD 0.388). Among the 90 patients, 59 had stigma score above the midpoint; while 31 scored below the mid-point. The results showed perceived stigma was negatively associated with age and depressive symptom, while positively associated with employment status history before attending PSR (p-value 0.012, 0.011 and 0.028 respectively). **Conclusion:** Perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan was

high and associated with age, employment status history before attending PSR and depressive symptom. Further therapeutic interventional program is needed to target personal stigma such as Cognitive Behavioral Therapy (CBT), coping skill on stigma and job coaching.

Keywords: Perceived stigma, schizophrenia, psychosocial rehabilitation (PSR), Devaluation-Discrimination Scale-Malay version (DDS-M)

CHAPTER 1: INTRODUCTION

1.1 Stigma in Schizophrenia

Stigma and discrimination cause significant burden within mental health care for people suffering from mental illness. Stigma has been selected as the central focus of the World Psychiatric Association's global anti-stigma program entitled "Open the Doors" (1). Thornicroft et al. (6) encapsulated stigma of mental illness as arising from ignorance, prejudice and discrimination.

Discrimination refers to the behavioral consequences of stigma which act to the disadvantage and social exclusion of the people affected. According to modified labelling theory, people with mental illness develop a set of negative beliefs on anticipated discrimination and devaluation by the society even before they are labelled (7).

Stigma itself can be divided into social (public) stigma and personal stigma. Corrigan and Watson (35), use the term public stigma to describe the ways in which the general public stigmatize people with a mental illness. Personal stigma can be further divided into self-stigma and perceived stigma. They described self-stigma as the internalization of this public stigma. It is the product of internalization of shame, blame, hopelessness, guilt and fear of discrimination associated with mental illness. While perceived stigma was described as how the individual thinks society views him/her personally as a member of the stigmatized group (36).

Schizophrenia is the most disabling mental illness and highly stigmatized all over the world. Experiencing stigma leads to lowering of stigma resistant ability in person with schizophrenia. Stigma also works as barrier for health-seeking behavior, reducing self-esteem, mental health recovery and social inclusion (3). It leads to

impairment in the quality of life in term of preventing them from applying from work or study, rejection from employer as well as stop looking from having close relationship. Stigma not only cause major burden to individuals with psychiatric illness, it also can affect their family members as well as caregivers (3). In order to help them cope with this problem, intervention program would be helpful.

In order to overcome issues on stigma, concerted efforts based on local evidence are required. There are several levels at which interventions and strategies can be implemented. These are the intrapersonal (those focus on addressing internalized and anticipated stigma), interpersonal (those affecting intimate groups of people: friends, family, work and social networks), institutional (those that targeting the institutions particular relevance to stigmatized people: e.g. health care providers or police officers, community and governmental/structural are also involved in a variety of intervention such as training, education, media campaigns and contact people with mental illness, or combinations of these strategies (4).

1.2 Factors and the Impact of Stigma: Link with Rehabilitation

Factors which contribute to stigma in mental health can be divided into sociodemographic factor, clinical characteristic of the illness and psychosocial factor of the patient. Several studies found that sociodemographic factors contribute to the severity of stigma. One study found that persons with mental illness who have lower incomes and being unemployed are more likely to believe that they will experience devaluation and discrimination than patients with higher incomes and being employed (12). Studies of persons with mental illness indicate that a higher educational level and socioeconomic status may be associated with more perceived stigma (14). Some studies found that women with mental illness are regarded more favorably than are mentally ill

men (11). The latter may be perceived as more likely to become aggressive or dangerous than women with mental illness.

Patients with more severe psychotic symptoms may be more likely to experience mental illness stigma (11). Mood-related variables may be associated with the perception and experience of stigma. Several studies performed by Link et al suggest that among persons with mental illness, expectations of stigma are associated with higher levels of depression and demoralization (16). Lundberg et al had reported that people with higher degree of global functioning perceived less discrimination (2).

Personal stigma lead to painful and destructive effects to patients suffering from schizophrenia. Those patients will undergo transformative process in which a person loses held or desired identities, adopts a stigmatized and devalued view of himself or herself. In addition, because of the unfriendly environment, e.g., being discriminated against and negatively stereo-typed, people with mental illness are prone to develop personal stigma due to social context. Moreover, stigma is hypothesized to be negatively related to recovery in people with mental illness (10). In a meta-analysis by Livingston and Boyd, self-stigma was related to a multitude of negative psychosocial and clinical outcomes, including reduced hope, low self-esteem, diminished quality of life and poor treatment adherence (19). Link et al. (21) reported that 74% of the patients believed that employers will discriminate against psychiatric patients, and 81% had similar expectations about dating relationships.

Little is known about whether participation in rehabilitation is linked to declines in self-stigma, and if so, what is correlated with changes in stigma level. However, it has long been asserted that various forms of rehabilitation might enable individuals to challenge stigmatizing beliefs (e.g., that they are not competent or could not form bonds with others) by increasing personal autonomy (23). Additionally, positive experiences

in rehabilitation could help some individuals to reject self-stigma in favor of more positive accounts of their abilities.

1.3 Justification of study

Acknowledging the impact of stigma to schizophrenia patients would highly justify specific intervention. Unfortunately, study on stigma among schizophrenia patients itself in our local setting are much lacking. Furthermore, no study specifically on schizophrenia patients attending PSR in in our local setting has been done before. Therefore, it is crucial to provide information of stigma in schizophrenia patients attending psychosocial rehabilitation in Kelantan. This study was part of a big study funded by USM Short Term Grant 304/PPSP/61313182. It is hoped that with this study, it will help subsequent development of an appropriate intervention to reduce stigma in people with schizophrenia which eventually beneficial to the improvement of patient's' quality of life (QOL).

1.4 Objectives

1.4.1 General Objectives

The aim of this study is to assess the level of perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan and its associated factors.

1.4.2 Specific objectives

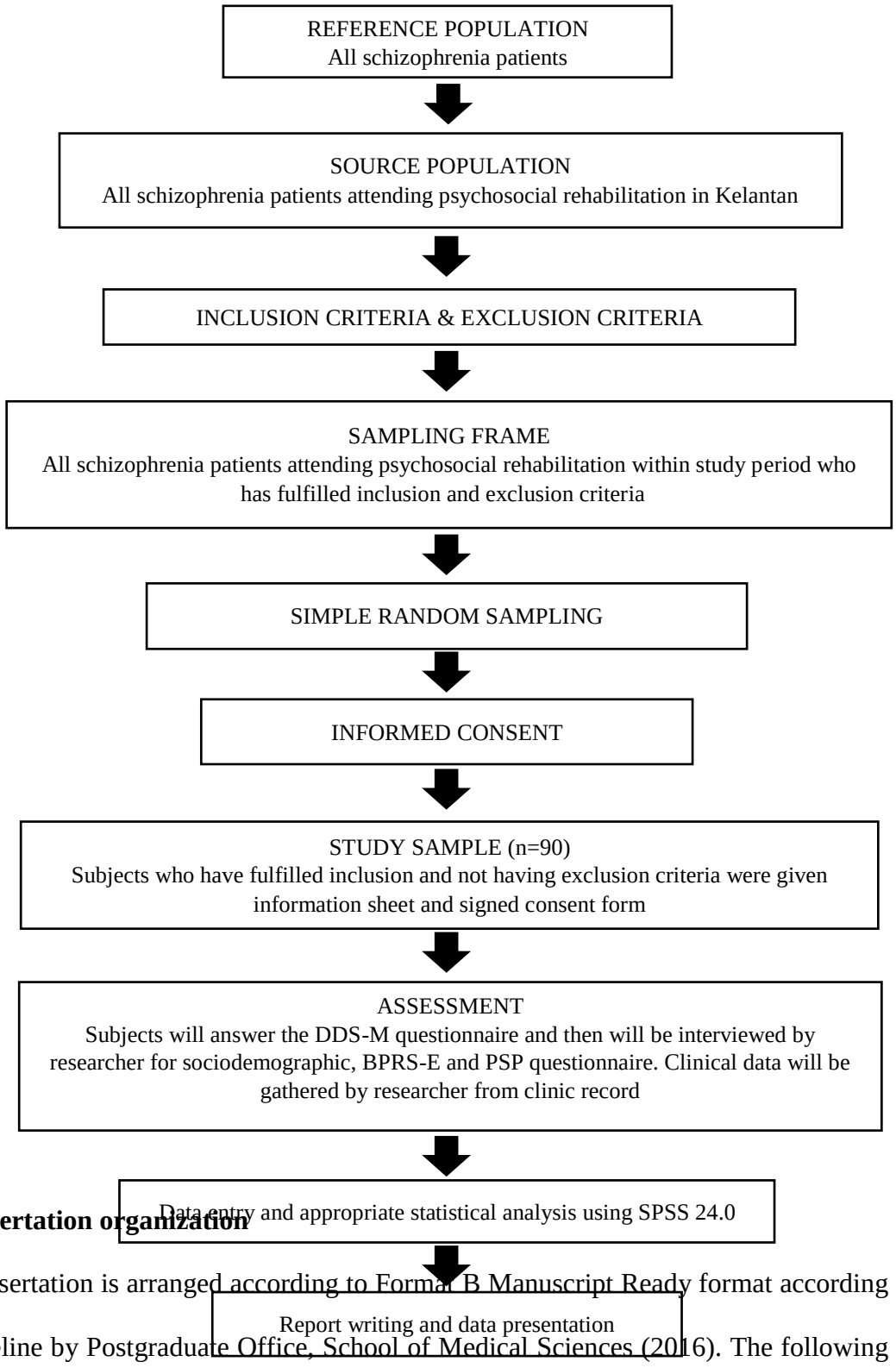
1. To assess the level of perceived stigma among patients with schizophrenia attending psychosocial rehabilitation in Kelantan.
2. To determine the association between level of perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan with socio-demographic factor.

3. To determine the association between level of perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan with clinical factors of the patients.
4. To determine the association between level of perceived stigma among schizophrenia patients attending psychosocial rehabilitation in Kelantan with psychosocial function.

1.5 Methodology

This was a cross sectional study where total of 90 participants were randomly selected from PSR Tumpat, PSR Wakaf Bharu, PSR Bachok, PSR Selising, PSR KKB Pasir Mas, Mentari Ketereh, PSR Hospital Raja Perempuan Zainab II (HRPZ II), PSR Hospital Sultan Ismail Petra (HSIP) and Mentari Hospital Universiti Sains Malaysia (HUSM). Assessment of level of perceived stigma through Self-administered Devaluation-Discrimination Scale-Malay version (DDS-M) questionnaire was given to patients for them to answer. Once patients completed the questionnaire, they were interviewed for sociodemographic profile, clinical characteristic and psychosocial function using BPRS-E and PSP questionnaires by researcher. Data entry and analysis were done using SPSS version 24.0.

1.5.1 Flow Chart Methodology



1.6 Dissertation organization

This dissertation is arranged according to Format B Manuscript Ready format according to guideline by Postgraduate Office, School of Medical Sciences (2016). The following chapters would be the study protocol that been submitted for ethical approval. Chapter 3 is the manuscript of Perceived Stigma among Schizophrenia Patients Attending Psychosocial Rehabilitation in Kelantan, Malaysia that ready for submission for the

journal The Malaysian Journal of Medical Sciences with the author instruction. The appendices contain tables of the study result and the abstract submitted to 2018 MPAServier Postgraduate Research Award, 3rd International Conference on Medical and Health Sciences, 1st East Coast Research Day 2019 and questionnaires used in the study. The raw data is included in the attached CD.

CHAPTER 2: STUDY PROTOCOL

School of Medical Sciences, Universiti Sains Malaysia

Master of Medicine (Psychiatry)

Phase II & III

Research Proposal

PRINCIPAL INVESTIGATOR:

THE EFFECT OF PSYCHOSOCIAL REHABILITATION ON PERCEIVED STIGMA AMONG PATIENTS WITH SCHIZOPHRENIA IN KELANTAN

STUDENT:

PERCEIVED STIGMA AMONG SCHIZOPHRENIA PATIENTS ATTENDING PSYCHOSOCIAL REHABILITATION IN KELANTAN

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2.1 Introduction

2.1.1 Background

Stigma and discrimination cause significant burden within mental health care for people suffering from schizophrenia. This is because schizophrenia is the most disabling mental illness and highly stigmatized all over the world. Stigma has been selected as the central focus of the World Psychiatric Association's global anti-stigma program entitled "Open the Doors" (1). Stigma itself can be divided into social stigma and self-stigma. Experiencing stigma leads to lowering of stigma resistant ability in person with mental illness.

Factors which contribute to stigma in mental health are type of illness, age, gender, level of education and severity of illness. Lundberg et al had reported that people with higher degree of global functioning perceived less discrimination (2).

Stigma also works as barrier for health-seeking behavior, reducing self-esteem, mental health recovery and social inclusion (3). It leads to impairment in the quality of life in term of stop them from applying from work or continues study, rejection from employer as well as stop looking from having close relationship.

Stigma does not cause major burden to individuals with psychiatric illness only, but it also can affect their family member as well as caregivers (3). In order to help them coping with this problem, intervention program would be beneficial.

In order to overcome issues on stigma, concerted efforts based on local evidence are required. There are several levels at which interventions and strategies can be implemented. These are the intrapersonal (those focus on addressing internalized and anticipated stigma), interpersonal (those affecting intimate groups of people: friends, family, work and social networks), institutional (those that targeting the institutions particular relevance to stigmatized people: e.g. health care providers or police officers,

community and governmental/structural are also involved in a variety of intervention such as training, education, media campaigns and contact people with mental illness, or combinations of these strategies (4).

The aim of this study is to compare the stigma level in patients attending psychosocial rehabilitation in Kelantan with the patients who do not attend psychosocial rehabilitation.

2.1.2 Problem Statement

Acknowledging the enormous impact of stigma to patients, specific intervention is highly justified. Unfortunately, study on stigma among schizophrenia patients itself in our local setting are much lacking. This study is crucial to provide information of stigma between schizophrenia patients attending psychosocial rehabilitation comparing with those who did not attend psychosocial rehabilitation in Kelantan. It is hoped that with this study, it will help to develop later an appropriate intervention to reduce stigma in people with schizophrenia which eventually beneficial to the improvement of patient's' quality of life (QOL).

2.2 Literature Review

2.2.1 Schizophrenia in Malaysia

Schizophrenia is a chronic illness presented with broad range symptoms which can cause great distress to themselves as well as their families. Patients may experience progressive personality changes and a breakdown in their relationships with the outside world, disorganized and abnormal thinking, behavior and language and become emotionally unresponsive or withdrawn.

From 2003 to 2005 a total number of 7351 cases of schizophrenia have been registered in Malaysia. In a systematic review (SR) of the incidence of schizophrenia,

the median incidence rate was 15.2 per 100,000 (range of 7.7 to 43.0 per 100,000).The incidence was noted higher in males, urban and migrant population. More than 60% schizophrenia cases in Malaysia were males. The peak age of patient's presentation was at the age of 30 in which males developed earlier illness compared to female.

There were 54% Malays, 28% Chinese, 9% Indians and 9% others. This number is consistent with the distribution of ethnic group in Malaysia. Most (80%) were single, divorced, widowed or separated and 70% were unemployed (5).

2.2.2 Schizophrenia and stigma

Stigma and discrimination cause significant burden within mental health care for people suffering from schizophrenia. Thornicroft et al. (6) encapsulated stigma of mental illness as arising from ignorance, prejudice and discrimination.

Discrimination refers to the behavioral consequences of stigma which act to the disadvantage and social exclusion of the people affected. According to modified labelling theory, people with mental illness develop a set of negative beliefs on anticipated discrimination and devaluation by the society even before they are labelled (7).

Self-stigmatization is a process of internalizing mental illness and formulating prejudice and discrimination against oneself. Anticipated discrimination and self-stigma are closely related to each other and triggered by past experiences of stigma and discrimination.

Perceived and anticipated discrimination have been found to be widespread among people with schizophrenia. In a recent study, 69.4%of the participants with schizophrenia reported moderate or high perceived discrimination (8). A study on the level of anticipated discrimination in people with schizophrenia from 27 countries in the international study of Discriminations and Stigma Outcome (INDIGO) found that

anticipated discrimination among people with schizophrenia were common regardless of the diversity of sociocultural backgrounds in the 27 participating countries (9).

Together with social stigma, self-stigma and anticipated discrimination can trigger a vicious cycle and diminishes coping capacity of individuals with severe mental illness.

2.2.3 Factors and The Impact of Stigma: Link with rehabilitation

Self-stigma, aka "internalized stigma", is "one of the especially painful and destructive effects of stigma". Self-stigma is a transformative process in which a person loses held or desired identities, and adopts a stigmatized and devalued view of himself or herself. In addition, because of the unfriendly environment, e.g., being discriminated against and negatively stereo-typed, people with mental illness are prone to develop self-stigma due to social context. Moreover, self-stigma is hypothesized to be negatively related to recovery in people with mental illness (10).

Patients with more severe illness symptoms may be more likely to experience mental illness stigma. Studies indicate that persons with mental illness who have more conspicuous illness symptoms and poorer social skills engender more negative responses from others, as one would intuitively expect (11).

Other studies suggest, as well, that persons with mental illness who have lower incomes and more unemployment are more likely to endorse beliefs that mental patients will experience devaluation and discrimination than are persons with better social outcomes (12). Socioeconomic status may also affect stigma attitudes; higher socioeconomic status has been associated with both more and less stigma in different types of investigations.

In studies of the public, persons with a higher educational level have been shown to be more knowledgeable and tolerant of mental illness (13). On the other hand, studies

of persons with mental illness indicate that a higher educational level and socioeconomic status may be associated with more perceived stigma (14). In one survey, persons from families with higher socioeconomic status were more likely to conceal the hospitalization of their relatives with mental illness from their friends and associates as compared to persons from families with a lower socioeconomic status (15).

The gender of the person with mental illness may affect the extent of stigma that is experienced. There is some indication from behavioral analogue studies that women with mental illness are regarded more favorably than are mentally ill men (11). The latter may be perceived as more likely to become aggressive or dangerous than their female counterparts.

Mood-related variables may be associated with the perception and experience of stigma. Several studies performed by Link et al suggest that among persons with mental illness, expectations of stigma are associated with higher levels of depression and demoralization (16).

While illness insight is considered to be a benefit for persons with mental illness, insight may also sensitize persons to stigma reactions. In a study by Mechanic and colleagues, the degree to which patients with schizophrenia attributed their condition to a mental illness was positively associated with the level of perceived stigma attitudes (17).

Consistent with this finding, Link has posited that persons with mental illness who label themselves as mentally ill may internalize the negative reactions from others, with a resulting increase in their expectations of stigma (7).

The degree of contact with the public may also affect the extent of stigma experiences. A study from Germany found that patients with schizophrenia at a State hospital had lower perceptions of mental illness stigma than did patients who were

hospitalized in a community setting (14). The authors of the study speculate that patients who reside in a sheltered setting, in contrast to those who have more interaction with the public, may have less opportunity to experience devaluation and discrimination and thus may have lower expectations of stigma.

Corrigan et al. (18) reported that the most common reason for perceived discrimination was mental disability among variables related to stigma such as gender and race.

In a meta-analysis by Livingston and Boyd;2010, self-stigma was related to a multitude of negative psychosocial and clinical outcomes, including reduced hope, low self-esteem, diminished quality of life and poor treatment adherence (19).

In the International Study of Discrimination and Stigma Outcomes (INDIGO) sixty-four percent (64%) of the participants reported that they had stopped themselves from applying for work, training or education because of anticipated discrimination. Seventy-two percent (72%) of them reported that they felt the need to conceal their diagnosis. Expecting to be avoided by others who know about their diagnosis was highly associated with decisions to conceal their diagnosis. Those who concealed their diagnosis were younger and more educated. The participants who perceived discrimination by others were more likely to stop themselves from looking for a close relationship.

Anticipated discrimination in finding and keeping work was more common in the absence than in the presence of experienced discrimination, and the similar findings applied to intimate relationships. This study shows that anticipated discrimination among people with schizophrenia is common, but is not necessarily associated with experienced discrimination (9).

Angermeyer et al. (20) reported that even though patients with schizophrenia and patients with depression anticipated stigmatization similarly, frequently, the former reported concrete stigmatization experiences more frequently than the latter.

Link et al. (21) reported that 74% of the patients believe that employers will discriminate against psychiatric patients, and 81% had similar expectations about dating relationships. However, only36% of his sample had a diagnosis of schizophrenia. Lee et al. (22) reported that over 50% of the patients anticipated stigma and about 55% concealed their illness.

Little is known about whether participation in rehabilitation is naturalistically linked to declines in self-stigma, and if so, what is correlated with changes in self-stigma. However, it has long been asserted that various forms of rehabilitation might enable individuals to challenge stigmatizing beliefs (e.g., that they are not competent or could not form bonds with others) by increasing personal autonomy (23). Additionally, positive experiences in rehabilitation could help some individuals to reject self-stigma in favor of more positive accounts of their abilities.

Study by Lysaker et al found that there was decrease in self-stigma in patient who involve in rehabilitation and correlated with increase in self-esteem (24).

2.2.4 Psychosocial Rehabilitation for Schizophrenia Patients in Malaysia

The current concept of Psychosocial Rehabilitation (PSR) aims to enable the persons with persistent and severe psychiatric illness to function in the community in terms of work, leisure and social contacts with the least possible involvement of mental health professionals (25).

The evolution of PSR development for people with severe mental illness in Malaysia started since the early 20th century. The target group of PSR in Malaysia has remained towards those with severe mental illnesses such as chronic schizophrenia,

severe bipolar disorders and people with dual diagnoses (severe mental illness with mental retardation or chronic substance abuse). There are reasons of why this has remained the target. Clinically, the psychosocial complications are occurring more in the severely mentally ill people, where they often need help to progress and to recover from their complex illnesses. The serious deficits in the areas of social functioning and quality of home environment were found to have a significant association with low QOL (26).

When Mental Health Unit was established in Ministry of Health under Public Health Division in 1996, psychiatric activities in primary healthcare centers all over Malaysia began (27). Primary health care workers started to work with psychiatrists from the general hospitals to develop the rehabilitation program. In Malaysia, it is a policy that rehabilitation activities need to go hand in hand with the other comprehensive management of people with severe mental illnesses (28). For example when the community psychiatric care activities started to be developed in general hospital setting all over Malaysia, the community mental health staffs started to do rehabilitation activities at the patient's home and started to involve the patient's relatives. This has encouraged the partnership between the hospital-based community team with the primary mental health care staff who are more accessible by the family. At the same time, it has supported the progress and evolution of the rehabilitation activities at both hospital-based and PSR centers (29).

In year 2000, a manual for psychosocial guidelines was developed and soon the training of the mental health staff at primary healthcare level was conducted. The activities done at these PSR centers focused on helping individual patients through psychological, social and occupational techniques. Generally PSR activities have progressed along with the development of psychiatric services in Malaysia. It started

from mental institutional setting, and then progressed into general hospital, the primary healthcare centers and then becoming full community-based with initiatives from local community mental health teams, patient's family and local community members.

2.2.5 Previous Local Studies

From literature searching and review, to the best of our knowledge, there is one local study done specifically on the stigma in schizophrenia patients. A study done by Salleh M R et al (30) found that the perceived stigma among stable patients with schizophrenia was low (41.9%) and there was significant association between perceived stigma with the level of self-esteem. In the study, they found that those with high level of self-esteem had low perceived stigma. No local study pertaining stigma and psychosocial rehabilitation was found.

Other local studies related to schizophrenia and stigma were study by Tuti et al (31) and Razali S M et al (32)where both of the studies aiming towards the stigma among patients' relative/ caregivers as well as public stigma. There was also a qualitative study on stigma involving 15 mental health professionals done in Kuala Lumpur and Selangor by Hanafiah et al (33)

It is important that we acknowledge that stigma among schizophrenia patients owing that it has tremendous effects on their lives. Nevertheless, there was limited study on this in our local setting and not much was done on the association factors related to the stigma in schizophrenia patients as well as the link with psychosocial rehabilitation.

2.2.6 Rationale of Study

As local research in stigma among schizophrenia patients are lacking, it has become an important focus since sequel of stigma itself, despite of patient illness will cause impairment of patients' life.

Finding from this study will provide base for stigma among schizophrenia patients. This study will also explore how stigma is related to patient's' illness psychopathology as well as their functions. Thus this study will provide avenue to improvise other potential intervention for stigma reduction program for local clinical context. Even though a study by INDIGO demonstrated anticipated discrimination among people with schizophrenia were common regardless of the diversity of sociocultural backgrounds in the 27 participating countries (9), the difference in cultural setting and socioeconomic status deem for research of our own. The study also did not allow any firm conclusions on causality and did not assess the level of psychopathology which may be affecting experienced and anticipated discrimination.

To reduce discrimination, it may be necessary both to introduce measures to minimize discrimination towards people with mental illness by others and to identify effective methods to reduce anticipated and perceived discrimination experienced by people with mental illness towards themselves. Here, we try to compare whether there is significant difference between stigmas among schizophrenia patients attending psychosocial rehabilitation with those who not.

2.3 Objectives

2.3.1 General Objectives

The aim of this study is to compare the level of perceived stigma between patients with schizophrenia who receives and who did not receive psychosocial rehabilitation in Kelantan and its associated factors.

2.3.2 Specific objectives

1. To assess the level of perceived stigma among patients with schizophrenia attending psychosocial rehabilitation in Kelantan.

2. To assess the level of perceived stigma among patients with schizophrenia who did not receive psychosocial rehabilitation (control group).
3. To compare the stigma between receivers and non-receivers of psychosocial rehabilitation.
4. To determine the association between socio-demographic and clinical factors with the levels of stigma among patients attending psychosocial rehabilitation in Kelantan.
5. To determine the association between socio-demographic and clinical factors with the levels of stigma among schizophrenia patients who did not receive psychosocial rehabilitation in Kelantan.

2.3.3 Research Questions

1. What is the level of perceived stigma among patients with schizophrenia attending psychosocial rehabilitation in Kelantan?
2. What is the level of perceived stigma among patients with schizophrenia who did not receive psychosocial rehabilitation in Kelantan?
3. Is there any significant on the level of stigma among schizophrenia patients who receive psychosocial rehabilitation in Kelantan and those who did not receive psychosocial rehabilitation (control group)?
4. Is there any association between socio-demographic, clinical factors and function with the level of perceived stigma among patients with schizophrenia attending psychosocial rehabilitation in Kelantan?

2.3.4 Research Hypothesis

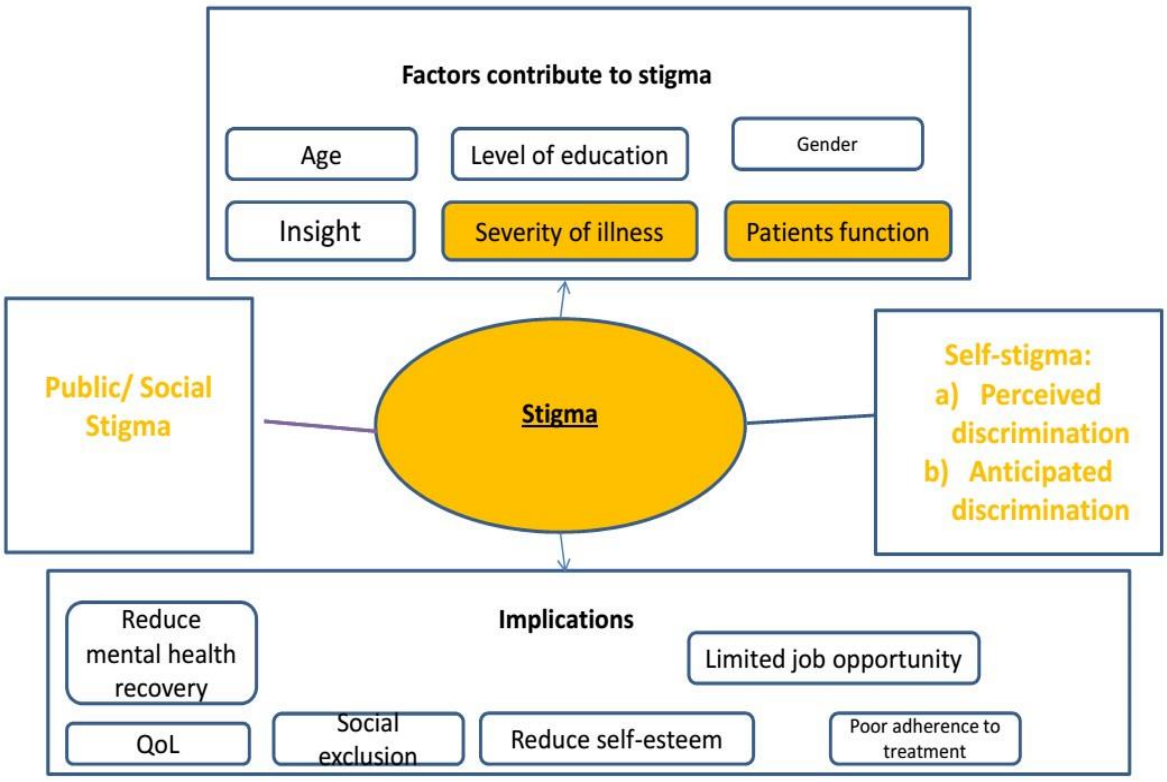
1. There is high level of perceived stigma among patients with schizophrenia attending psychosocial rehabilitation in Kelantan.

2. There is difference in stigma score between schizophrenia patients attending psychosocial rehabilitation in Kelantan and those who did not attend psychosocial rehabilitation (control group).

3. There is association between socio-demographic and clinical factors with the level of perceived stigma among Schizophrenia patients attending psychosocial rehabilitation in Kelantan.

2.3.5 Conceptual Framework

Figure 1 showed the general overview in regards to the stigma and factors contributing to it that will be measured during this study.



2.4 Methodology

2.4.1 Study Design

This is a comparative cross sectional study (analytical statistic). Subjects are recruited from Principle Investigator (PI)'s list of patients. Participation is voluntary. Any Schizophrenia patient may accept or refuse to participate in the study and their acceptance or refusal will not affect their usual level of care and treatment as stated in consent form.

2.4.2 Study Location

This study will be conducted at psychosocial rehabilitation centers in Kelantan:

- PSR Klinik Kesihatan Bandar Pasir Mas: 23 clients
- PSR Klinik Kesihatan Bachok: 15 clients
- PSR Klinik Kesihatan Selising: 19 clients
- PSR Klinik Kesihatan Tumpat: 12 clients
- PSR Klinik Kesihatan Jeli: 8 clients
- PSR Klinik Kesihatan Pulai Chondong: 14 clients
- PSR Klinik Kesihatan Wakaf Bharu: 11 clients
- PSR Klinik Kesihatan Chiku 3: 11 clients
- PSR Klinik Kesihatan Bandar Kuala Krai: 11 clients
- PSR Klinik Kesihatan Gual Ipoh: 27 clients
- Mentari Ketereh: 20 clients
- Psychosocial rehabilitation HRPZ II: 8 clients
- Psychosocial rehabilitation HUSM: 5

2.4.3 Study Period

Study will be conducted in between January 2016 till December 2017.

2.4.4 Sampling Method

Simple random sampling with sample size of 90 patients based on calculation done from specific objective 2.

2.4.5 Study Sample

Participants will be recruited from patients with diagnosis of schizophrenia who are attending psychosocial rehabilitation in Kelantan.

2.4.5.1 Inclusion criteria

- All patients attending psychosocial rehabilitation in Kelantan with diagnosis of schizophrenia
- Able to read Malay and understand spoken Malay
- Older than 18 years old

2.4.5.2 Exclusion Criteria

- Patients attending psychosocial rehabilitation with other than diagnosis of schizophrenia

2.4.6 Withdrawal Criteria

Participant may withdraw from the study at any time, without a penalty or loss of benefits to which he/she are otherwise entitled.

2.4.7 Working definition

Participant

Any patient who has been diagnosed to have schizophrenia using Diagnostic and Statistical Manual of Mental Disorders (DSM) 5 and attending psychosocial rehabilitation in Kelantan. They must be 18 years old and above.

Psychosocial rehabilitation

Patient who has been diagnosed with mental illness and has been in a mentally stable state can voluntarily join psychosocial rehabilitation (PSR). Enrolment for participation depend on patient willingness, transportation availability and support from family members. Thus, it is not a standard practice for every patient with mental illness to undergo psychosocial rehabilitation.

Control group

Control group was selected among schizophrenia patients who only attend outpatient on respective Klinik Kesihatan (who did not attend psychosocial rehabilitation at respective Klinik Kesihatan)

2.4.8 Study Subjects

All subjects from the study sample who have consented to participate in the study and provide the required data.

2.4.9 Sample size calculation

All objectives are considered for sample size determination.

For specific objective 1:

As reported in previous study, a sample size of 225 patients was sufficient to detect the level of stigma in schizophrenia patients with anticipated population having stigma was 41.9% (based on study by Razali S.M et al 2010).

Sample size determination is calculated by using single mean formula:

$\mathbf{n} = (\boldsymbol{Z} * \boldsymbol{sd})^2 / \boldsymbol{d}$

n = sample size to be determined

$\boldsymbol{Z}$ = 1.96

$\boldsymbol{D}$ = absolute precision, 0.05 $\boldsymbol{sd}$ = standard deviation, (0.39) based on study by Razali S.M et al 2010)

Thus sample size: n= $\{1.96*0.39\}^2/0.05$ n= 12

Additional 20% for dropout rate from 12 = 12 + 2 = 14

For specific objective 3:

Based on study by Razali S.M et al 2010 , mean score was 2.38 (SD: 0.39)

Sample size determination is calculated by using sample size calculator prepared by Dr Wan Ariffin, Unit Biostatistics and Research Methodology, USM.

Standard Deviation (δ) = 0.39

Effect size (Δ) = 0.195

Significance level(α) = 0.05

Power($1-\beta$) = 0.80

Thus sample size: n= 63

Adding 10% anticipated drop (7) n=63+7=70

The target sample size in this study is 70 (for each arm).