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**Internalized stigma among psychiatric outpatients: Associations with quality of life, functioning, hope and self-esteem**

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**Abstract**

This study aimed to: (i) determine the prevalence, socio-demographic and clinical correlates of internalized stigma and (ii) explore the association between internalized stigma and quality of life, general functioning, hope and self-esteem, among a multi-ethnic Asian population of patients with mental disorders. This cross-sectional, survey recruited adult patients (n=280) who were seeking treatment at outpatient and affiliated clinics of the only tertiary psychiatric hospital in Singapore. Internalized stigma was measured using the Internalized Stigma of Mental Illness scale. 43.6% experienced moderate to high internalized stigma. After making adjustments in logistic regression analysis, results revealed there were no significant socio-demographic or clinical correlates relating to internalized stigma. Individual logistic regression models were used to determine whether psychosocial variables were associated with internalized stigma. A negative relationship between quality of life, self-esteem and general functioning and internalized stigma was observed whereby lower scores were associated with higher internalized stigma. In the final regression model, which included all psychosocial variables together, self-esteem was the only variable significantly and negatively associated with internalized stigma. The results of this study contribute to our understanding of the role internalized stigma plays in patients with mental illness, and the impact it can have on psychosocial aspects of their lives.

Keywords: internalized stigma; Singapore; depression; schizophrenia; anxiety; obsessive compulsive disorder

## 1. Introduction

Stigma is universal and has no boundaries, and is something that can affect anyone. Stigma towards those with a mental illness is no exception; it is widespread and evident across all cultures and societies. The World Health Organization has defined stigma as 'a mark of shame, disgrace, or disapproval that results in an individual being rejected, discriminated against, and excluded from participating in a number of different areas of society' (WHO, 2001). It involves labeling, stereotyping, separation, status loss and discrimination (Link and Phelan, 2001). Stigma is complex and multifactorial and encompasses three interacting levels; individual, social and structural (Corrigan et al., 2005a; Herek, 2007; Herek et al., 2009).

For mental illnesses, structural stigma, also referred to as institutional stigma, exists at the systems or macro level and refers to the rules, policies, and procedures of private and public entities in positions of power that restrict the rights and opportunities of people with mental illness (Corrigan et al., 2005a; Corrigan et al., 2005b). Social stigma, also known as public or enacted stigma, exists at the group (i.e., meso) level and describes "the phenomenon of large social groups endorsing stereotypes about and acting against a stigmatized group" (Corrigan et al., 2005a, p.179). At the individual or micro level, internalized or self-stigma, can be described as a process whereby affected individuals endorse stereotypes, anticipate social rejection, consider stereotypes to be self-relevant, and believe they are devalued members of society (Corrigan et al., 2005a; Corrigan and Watson, 2002, Corrigan et al., 2006; Ritsher & Phelan, 2004). Internalized stigma is experienced when a person is aware of the stereotype that describes the stigmatized group, agrees with it and then finally applies it to themselves (Corrigan et al., 2009).

The repercussions of stigma are significant for people with a mental illness. Firstly stigma can result in label avoidance, the process by which people are reluctant to be diagnosed with or be seen as seeking treatment for a mental illness, (Corrigan et al., 2004) often resulting in delayed treatment seeking. Internalized stigma has also been shown to be related to poor adherence with psychosocial (Fung et al., 2009; Fung et al., 2008) and pharmacological treatment (Adewuya et al., 2009; Sirey et al., 2001). Yanos and colleagues (2008) derived a model relating to the impact of internalized stigma on

recovery-related outcomes for people with severe mental illnesses, whereby internalized stigma was related to having an awareness of the psychiatric problem and the meanings attributed to this. They found internalized stigma reduced a person's sense of hope and self-esteem which in turn resulted in negative outcomes related to recovery including social avoidance, depressive symptoms and a preference for using avoidant coping.

Internalized stigma has also been linked to various poor psychosocial outcomes among people with mental illness. These include poor quality of life and life satisfaction (Switaj et al 2009), difficulty in obtaining employment and/or housing (Wahl et al., 1999), marginalization, rejection, shame and isolation (Shrivastava et al., 2012). Clinically, internalized stigma has also been associated with an increase in symptom severity (Mak and Wu, 2006), positive symptoms (Lysaker et al., 2007; Yanos et al., 2008), negative symptoms (Lysaker et al., 2009, 2007) and depressive symptoms (Lysaker et al., 2007). For other aspects such as insight however, the findings are inconsistent, with some studies finding insight to have a positive correlation with internalized stigma, whilst others finding the correlation to be negative (Hasson-Ohayon et al., 2012; Mashiach-Eizenberg et al., 2013; Mak and Wu, 2006). Overall, internalized stigma is considered a risk factor for poorer mental health prognosis (National Institute of Mental Health, 2008). Given the negative consequences resulting from internalized stigma, there has been increased interest towards identifying ways to help people with mental illness reduce or avoid self-stigma (Ritsher et al., 2003; MacInnes and Lewis, 2008; Lucksted et al., 2011; Yanos et al., 2011) in order to improve outcomes and well-being.

Whilst a recent expansive body of literature has investigated the experiences of people with mental illnesses, the prevalence of internalized stigma among adults with mental illness, its effects on psychosocial outcomes, and the corresponding patterns of relationships between internalized stigma and these outcomes have not yet been fully explored (Drapalski et al., 2013). More specifically, the majority of studies have investigated internalized stigma among patients from one or two diagnostic groups, with only a few studies exploring differences across multiple diagnoses (Drapalski et al., 2013; Oliveira et al., 2015; Chang et al., 2016b).

Several studies have explored the attitudes and stigma towards people with mental illness, however little is known about the extent of internalized stigma experienced by treatment seeking patients with mental illnesses in Singapore, a highly developed country with a multiracial resident population of 3.9 million, comprising predominantly of Chinese (74.3%), Malays (13.3%) and Indians (9.1%). Furthermore little is known about

differences in internalised stigma across diagnostic groups, in this multi-ethnic population. This study therefore aimed to determine the prevalence of internalized stigma among a multi-ethnic Asian population of outpatients with, schizophrenia, depression, anxiety spectrum disorders or obsessive compulsive disorder (OCD), who were seeking treatment at a tertiary psychiatric hospital in Singapore. We also aimed to determine the socio-demographic and clinical correlates of internalized stigma as well as explore the association between internalized stigma and quality of life, general functioning, hope and self-esteem among this patient population. We hypothesized that internalized stigma would differ across the different diagnostic groups and would be negatively associated with quality of life, general functioning, hope and self-esteem.

## **2. Methods**

### *2.1 Participants and recruitment*

This cross-sectional, study recruited adult patients who were seeking treatment at outpatient and affiliated clinics of the only tertiary psychiatric care hospital in Singapore, the Institute of Mental Health (IMH) between May 2014 and September 2015. Inclusion criteria required respondents to be: Singapore citizens or Permanent Residents (PRs), aged 21-65 years, belonging to Chinese, Malay or Indian ethnicity (the three main ethnic groups in Singapore), capable of providing consent, literate in English language and having a clinical diagnosis of greater than one year for either schizophrenia, depression or anxiety spectrum disorders or OCD, as determined by a psychiatrist, using ICD-9 criteria. Patients with intellectual disabilities, patients who were not fluent in English and those patients who had been seeking treatment at IMH for less than one year were excluded. Posters informing attending patients of the ongoing study and its eligibility criteria were placed in the clinic settings along with the phone numbers and email addresses of the study team members. Psychiatrists and other healthcare professionals were also requested to refer eligible patients for the study. On average, the face-to-face, interviewer administered interviews took one hour to complete. Data was captured in real-time via online Computer Assisted Personal Interviewing using an iPad, by trained researchers who were members of the study team. This method allowed interviewers to provide assistance or clarification to the participants where needed, whilst reducing the likelihood of pattern answers. Ethical approval was obtained from the

Domain Specific Review Board of the National Healthcare Group, Singapore, prior to the start of the study and written informed consent was obtained from all respondents.

## 2.2 Measures

### 2.2.1 Internalized Stigma of Mental Illness (ISMI)

The Internalized Stigma of Mental Illness (ISMI) scale was used to measure internalized stigma and consists of five subscales: alienation, stereotype endorsement, discrimination experience, social withdrawal and stigma resistance (Ritsher et al., 2003). The scale uses a 4-point Likert scale from strongly disagree to strongly agree to rate each of the 29 items, which includes statements such as “Having a mental illness has spoiled my life”, “People without mental illness could not possibly understand me” and “I can’t contribute anything to society because I have a mental illness”. As the stigma resistance subscale has not been included in the ISMI total score in several previous studies, given its relatively weak correlation to the other ISMI subscales and its lack of internal consistency, (Ritsher et al, 2003; Lysaker et al., 2007) the stigma resistance subscale was excluded from analysis. The ISMI has shown a good internal consistency (Cronbach's  $\alpha=0.94$ ) and good stability over time (test–retest reliability coefficient: ICC=0.78) (Chang et al., 2014) in a sample of psychiatric outpatients in Taiwan, with similar findings in a validation study among a similar sample (Chang et al., 2016a). The Cronbach's alpha in our sample was 0.93. For the interpretation of scores, a cut-off score of 2.5 was used, which corresponds to the midpoint of the possible range (on a scale of 1-4) where scores of 2.5 and above are reflective of moderate to high internalized stigma. This same cut-off score has been used in several other studies (Lysaker et al., 2007; Ritsher and Phelan, 2004; Boyd et al., 2014; Brohan et al., 2010).

### 2.2.2 Global Assessment of Functioning

The Global Assessment of Functioning (GAF) scale (Aas, 2010) is a scoring system for the severity of illness in psychiatry. The GAF assesses individual's overall functioning level. Impairments in psychological, social and occupational/school functioning are considered. The scale ranges from 0 (inadequate information) to 100 (superior functioning). Trained raters start at either the top or the bottom of the scale and go up/down the list until the most accurate description of functioning for the individual is reached as per the raters' judgment. A GAF score in the 91–100 range indicates optimal

mental health and coping capabilities while those in the 1–10 range may be considered suicidal and incapable of maintaining minimal personal hygiene.

### *2.2.3 World Health Organization Quality of Life-BREF*

The World Health Organization Quality of Life-BREF (WHOQOL-BREF) is a 26 item quality of life scale which measures overall quality of life and general health. It also measures four distinct quality of life domains; physical health, psychological health, social relationships and environmental aspects over the two weeks, prior to the interview (WHOQOL Group, 2004). All items are constructed on variations of a 5-point Likert Scale, with scores from 1 to 5, enquiring on “how much”, “how completely”, “how often”, “how good” or “how satisfied” the individual felt. Scores for the four domains are calculated by taking the mean of all items within the domain and multiplying by four and then linearly transforming it to a 0-100 scale. Domain scores are scaled in a positive direction, with higher scores denoting higher quality of life except for items 3, 4 and 26 which need to be reversed scored. The Cronbach’s alpha in our sample for each of the four domains was: physical health, 0.81; psychological health, 0.84; social relationships, 0.63; environment, 0.78.

### *2.2.4 Rosenberg’s Self Esteem Scale*

Rosenberg’s Self Esteem Scale (RSES) is a short, 10 item scale, where respondents indicate how strongly they agree or disagree with the statements, using a Likert scale from strongly agree (1) through to strongly disagree (4). Items 2, 5, 6, 8, 9 are reverse scored. All item scores are then summed and higher scores indicate higher self-esteem (Rosenberg, 1965). The Cronbach’s alpha in our sample was 0.84.

### *2.2.5 Dispositional Hope Scale*

The Dispositional Hope Scale (DHS), one of the most frequently used hope scales in mental health, is a 12 item scale (8 hope items and 4 fillers items) where respondents indicate how true or false each statement is on an 8-point continuum scale from definitely false (1) to definitely true (8), with scores ranging from 8 to 64 (Synder et al., 1991). The scores of the eight hope items are summed together, where higher scores indicate an increased sense of hope. The Cronbach’s alpha in our sample was 0.89.

Permission was obtained from respective copyright holders to use their scales where needed. Socio-demographic information was also collected for all respondents including age, gender, ethnicity, education and marital and employment status. Medical record reviews were also undertaken to confirm each respondent's diagnosis, their age of onset and number of hospitalizations resulting from their mental illness.

### *2.3 Statistical analysis*

Analysis was performed using Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics were used to describe the frequency distribution of the study sample, followed by chi-square test/t-test to identify the prevalence of internalized stigma. Mean ISMI item scores (scores range from 1-4) were calculated to establish a dichotomous scale for internalized stigma where scores below 2.5 were considered as low internalized stigma while scores of 2.5 and above were classified as moderate to high (Lysaker et al., 2007). To examine the socio-demographics and clinical correlates of internalized stigma, logistic regression analysis was performed where internalized stigma was the dependent variable. In addition, four separate logistic regression models, one each for quality of life, general functioning, hope and self-esteem were also investigated, where each was treated as a predictor of internalized stigma. All logistic regression analyses were controlled for socio-demographic and clinical characteristics including age, gender, ethnicity, employment status, marital status, education level, hospitalization history, diagnosis and age of onset of mental illness. Multi-collinearity between the variables was checked for before running the regression analyses. All statistically significant results were reported at  $p < 0.05$ .

### **3. Results**

The socio-demographic and clinical characteristics of the respondents are presented in Table 1 ( $n=280$ ). The majority of respondents were male (54.6%), of Chinese ethnicity (53.6%), never married (63.1%) and employed (55.7%). The mean age of the respondents was 38.9 years (standard deviation (SD) = 11.6 years), while the mean age at time of diagnosis was 29.5 years.

Overall, 43.6% had moderate to high internalized stigma scores, while the mean total score was 2.37 (SD = 0.54). Means scores were also obtained for the four subscales: alienation, 2.38 (SD = 0.61); stereotype endorsement, 2.54 (SD = 0.54); discrimination,



2.67 (SD = 0.42); social withdrawal, 2.21 (SD = 0.56). Results showed that higher internalized stigma was more common among females, Chinese ethnicity, those who were separated/divorced/widowed, lower education, those who were unemployed but able to work, those with a depression diagnosis and who had been hospitalized as a result of their mental illness. However, there were no significant socio-demographic or clinical correlates relating to internalized stigma after making adjustments in logistic regression analysis (Table 2).

Individual logistic regression models were used to determine whether psychosocial variables including quality of life, general functioning, self-esteem and hope were associated with internalized stigma (Table 3). Results from the first model revealed that three of the four domains of the WHOQOL-BREF (Psychological Health, Social Relationships and Environment) were significantly associated with internalized stigma. A negative relationship between these domains and internalized stigma was observed whereby lower domain scores are associated with higher internalized stigma. The Physical Health domain had no significant effect on the model. A similar negative relationship was also observed for general functioning (model 2) and self-esteem (model 3), where higher internalized stigma was associated with lower GAF and RSES scores. Hope however was not found to be significantly associated with internalized stigma (model 4). A final regression model which included all psychosocial variables together revealed that only self-esteem was significantly associated with internalized stigma.

#### **4. Discussion**

The concept of internalized stigma has only attracted attention since around 2000, however in this time the amount of qualitative and quantitative literature has increased exponentially, highlighting the growing interest surrounding this important topic (Werner et al., 2008; Alonso et al., 2009; Dinos et al., 2004; Schultz et al., 2004). This is one of just a handful of studies to explore internalized stigma across diagnostic groups, whilst is to our knowledge the only study conducted in Asia among a multi-ethnic treatment seeking population.

Moderate to high internalized stigma was seen in just under half (43.6%) of our sample. In the recent multinational review of the ISMI scale, Boyd and colleagues (2014) found that most studies reported between a quarter and half of participants reported high levels of internalized stigma. In comparison, the prevalence of moderate to high internalized

stigma is quite high in the current study, indicating that stigma is not uncommon amongst this treatment seeking group of patients with mental illness. It is possible that given this sample were seeking treatment from a tertiary psychiatric hospital in Singapore, they may internalize stigma to a greater extent compared to those seeking treatment from a general hospital or service. Clinicians and other mental health professionals treating these patients need to be cognizant of this and using the ISMI scale to measure and track internalized stigma over time as well as a method to evaluate the effects of interventions is therefore recommended. Furthermore, there is a need for mental health facilities to take into account internalized stigma as an important part of the rehabilitation process for patients and to see this as a modifiable risk factor (Oliveira et al., 2015).

Despite a growing body of literature, findings are inconsistent when it comes to the association between internalized stigma and socio-demographic variables (Dickerson et al., 2002; Mak et al., 2007; Livingstone and Boyd, 2010). In a recent systematic review and meta-analysis, Livingstone and Boyd (2010) investigated the relationship between internalized stigma and a range of socio-demographic, psychosocial and psychiatric variables and found that none of the socio-demographic variables – which included age, gender, education, employment, marital status, income and ethnicity - were consistently or strongly associated with levels of internalized stigma. More specifically, among 38 studies which explored the association between gender and internalized stigma, 31 (81.6%) reported non-significant findings ( $p > 0.05$ ), while 24 (68.6%) of 35 studies exploring age and 22 (81.5%) of 27 studies exploring the association between education and internalized stigma also reported non-significant findings. Given that no significant socio-demographic correlates were found to be associated with internalized stigma in our study, this suggests that treatment seeking patients with mental disorders in Singapore are somewhat analogous and experience internalized stigma in similar ways, irrespective of their socio-demographic profile.

Bivariate analysis found diagnosis and hospitalization for a mental illness to be significantly associated with higher internalized stigma, however after adjusting for socio-demographic and clinical correlates, this association disappeared. It is important to note however that neither diagnosis ( $p$  value = 0.045) or hospitalization ( $p$  value = 0.05) had a strong independent relationship with internalized stigma and therefore it is possible that other socio-demographic variables mediated this effect. Few studies have investigated differences in internalized stigma across diagnoses. Both Kim et al., (2015) and Sarisoy

et al., (2013) compared internalized stigma between patients with schizophrenia and bipolar disorder and found no significant differences in internalized stigma across these two diagnostic groups, whilst Drapalski et al., (2013) also found no differences amongst patients with schizophrenia, schizoaffective disorder, bipolar disorder, or major depression. Contrary to this, Chang et al. (2016b) looked at differences in internalized stigma among patients with schizophrenia, depression, bipolar disorder and anxiety disorder in Taiwan and found that those with schizophrenia and bipolar disorder did in fact have higher internalized stigma compared to people with anxiety. Results also revealed that those who had been hospitalized scored significantly higher on all subscales except stigma resistance.

Upon further analysis, we observed that the number of schizophrenia patients who had been hospitalized was significantly higher, whilst the number of anxiety patients who had been hospitalized was significantly lower, compared to the other disorders. These findings suggest that some underlying clinical characteristics may influence internalized stigma. The stigma associated with being hospitalized in a psychiatric hospital may increase internalized stigma and therefore efforts to monitor patients post discharge are imperative to avoid relapse, poor treatment adherence and to improve overall recovery outcomes.

A negative relationship was observed between stigma and quality of life where higher internalized stigma was associated with poorer quality of life in three of the four domains (psychological, social relationships and environment) of the WHOQOL-BREF. Similar findings exploring the association between internalized stigma and quality of life have consistently been reported (Wahl, 1999; Dinos et al. 2004; Ow and Lee, 2012; Lin et al., 2016). Internalized stigma is associated with negative psychological outcomes such as depressive symptoms, lower self-esteem and reduced self-efficacy (Livingstone and Boyd, 2010; Switaj et al., 2009) which will be reflected by a poorer outcome on the psychological domain. Perlick et al. (2001) also reported that stigma results in impairment in social relationships, while Dinos and colleagues (2004) found the most commonly associated consequences of stigma included fear, anxiety, feelings of isolation and embarrassment and this may explain why respondents with high internalized stigma had poorer quality of life on the social and psychological domains. Measurement of quality of life is generally regarded as an essential element in the evaluation of the merit and effectiveness of psychiatric treatment and community mental health services (Barry and Zissi, 1997). Given the consistent negative association with

higher internalized stigma, routine assessment of quality of life in patients with mental illness should be conducted and monitored. In addition, efforts to actually improving quality of life among patients with mental illness, despite the occurrence of symptoms and impairments are needed to improve outcomes of patients whilst also trying to reduce internalized stigma.

Another important aspect of internalized stigma is its association with overall functioning. Higher internalized stigma was significantly associated with poorer functioning, which was assessed based on impairments in psychological, social and occupational/school functioning. Whilst there is likely to be some conceptual overlap, for example, between quality of life domains and functioning domains, such as the social aspects, we avoided including all psychosocial variables in the one regression model. Therefore it is evident that both quality of life and functioning are independently associated with internalized stigma. It is necessary to routinely assess internalized stigma and social functioning of patients with mental illness. Counseling services which aim to help people with mental illness cope with stigmatization and improve their general functioning whilst also addressing stigma resistance are needed (Can and Tarriverdi, 2015).

Lower levels of self-esteem were associated with higher internalized stigma. Self-esteem was also the only significant predictor of internalized stigma when all psychosocial variables were included in the final regression model, however this finding should be viewed with caution as often psychosocial variables are conceptually intersecting and experimentally intertwined. Whilst we did not examine recovery outcomes in relation to internalized stigma, Yanos et al (2008) found that internalized stigma impacts individual's hope and self-esteem, resulting in poorer recovery. Our findings, in conjunction with those from previous studies, suggest that factors related to personal agency, such as self-esteem, are an important target of clinical intervention for helping patients with mental illness overcome internalized stigma (Kim et al, 2015). Although hope was associated with internalized stigma, unlike the other psychosocial variables, this association was not significant, which conflicts previous research. It is difficult to hypothesize why this would be. It may be a result of cultural underpinnings, beliefs or influences. Given that most studies that have found hope to be significantly associated with internalized stigma were conducted in Western countries suggests that there may be differences across ethnicities or cultures. Therefore further research exploring the construct of hope and its impact on internalized stigma among Asian with mental illness is warranted.

More recently, therapeutic interventions which specifically address internalized stigma among people with mental illness have been developed (Knight et al., 2006) including Narrative Enhancement and Cognitive Therapy (NECT) which aims to reduce internalized stigma whilst increasing hope, self-esteem and quality of life (Roe et al, 2014). This intervention assists people with mental illness to recover from negative outcomes resulting from internalized stigma, by promoting positive changes in how individuals think about themselves and their lives (Yanos et al., 2011). Such interventions adopt a multipronged approach and not only attempt to address internalized stigma but the consequences this may have on other psychosocial outcomes such as quality of life, self-esteem and sense of hope.

Some limitations should be considered when reviewing the findings of this study. Firstly, there was a reliance on self-report which can result in social desirability bias. The sample included a treatment seeking population with mental illness, and therefore it is not known how internalized stigma would compare to those who have defaulted or ceased treatment and this warrants further investigation in the future. The cross-sectional design of our study precluded any causal inferences being made. Given our sample was recruited within a tertiary hospital that solely provides psychiatric care, our results may not be generalizable to all patients with OCD, schizophrenia spectrum, depressive and anxiety disorders seeking treatment in other settings and was limited to English-speaking patients aged 21–65 years. Finally, whilst the well-used cutoff of 2.5 was used to differentiate those with low and high internalized stigma, there is no empirical evidence to support whether this cutoff adequately divides those with low and moderate or high internalized stigma.

These limitations notwithstanding, the findings from this study fill a gap in the existing literature, relating to internalized stigma among multi-ethnic treatment seeking outpatients with mental illness in Singapore. Firstly, this study is amongst only a few which has investigated differences in internalized stigma across different diagnoses. The results highlight that no significant socio-demographic or clinical correlates were related to internalized stigma, which suggests that internalized stigma is universal when it comes to those with mental illness in a multi-ethnic Asian society. This important finding indicates that irrespective of demographic and clinical characteristics, people with mental illness experience internalized stigma. Therefore interventions to reduce and combat internalized stigma can be aimed at treatment seeking patients with any mental disorder,

rather than targeted towards specific demographic profiles or diagnostic groups. Similarly, clinicians can measure and track changes in internalized stigma as well as evaluate the effects of such interventions, across all patient profiles. Secondly, the findings contribute to our understanding of the role internalized stigma plays in patients with mental illness, and highlights the detrimental effects internalized stigma has on psychosocial aspects of patients' lives including their quality of life, self-esteem and their overall ability to function. Stigma is a complex phenomenon that pervades the lives of people with a mental illness and is something that cannot be ignored when providing holistic care. Consequently, understanding how internalized stigma develops, how it is maintained, and how it interacts with other psychological and behavioral processes is important for identifying and developing interventions to reduce internalized stigma and ultimately improve outcomes and the well-being of people with mental illness.

Although the concept of stigma has been around for decades, it has only been more recently that there has been a vested interest and strong emphasis on understanding the root causes, its effects on mental health and ways of overcoming it (Mak et al., 2007). The systematic measurement of internalized stigma provides clinicians and clinical researchers with a confirmable and viable target for general psychotherapeutic interventions (Boyd et al., 2014). Educational interventions to address and reduce internalized stigma among people with mental illness are needed which provide support and empowerment to people with mental illness and improve their capacity to cope and manage with stigma. Finally, given that internalized stigma relates to the process by which individuals accept public opinions (Livingstone and Boyd, 2010), efforts to dispel misconceptions relating to mental illness among the general population are also needed.

### **CONFLICT OF INTEREST**

The authors declare that they have no competing interests.

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**Table 1: Socio-demographic and clinical characteristics and association with internalized stigma**

Variable	n (%)	Self-stigma n (%)		$\chi^2$	p
		High	Low		
<b>Overall</b>	280	122 (43.6)	158 (56.4)	-	-
<b>Gender</b>					
Male	153 (54.6)	62 (40.5)	91 (59.5)	1.275	0.259
Female	127 (45.4)	60 (47.2)	67 (52.8)		
<b>Marital Status</b>					
Never Married	176 (63.1)	76 (43.2)	100 (56.8)	1.799	0.407
Married	58 (20.8)	22 (37.9)	36 (62.1)		
Separated, Divorced, Widowed	45 (16.1)	23 (51.1)	22 (48.9)		
<b>Ethnicity</b>					
Chinese	150 (53.6)	68 (45.3)	82 (54.7)	0.408	0.815
Malay	65 (23.2)	27 (41.5)	38 (58.5)		
Indian	65 (23.2)	27 (41.5)	38 (58.5)		
<b>Highest Education</b>					
Primary or below	19 (6.8)	11 (57.9)	8 (42.1)	4.315	0.229
Secondary or O/N Level	93 (33.3)	45 (48.4)	48 (51.6)		
A level/ Diploma	124 (44.4)	50 (40.3)	74 (59.7)		
University	43 (15.4)	15 (34.9)	28 (65.1)		
<b>Employment Status</b>					
Employed	156 (55.7)	62 (39.7)	94 (60.3)	4.149	0.246
Student/Homemaker/Retired	34 (12.1)	13 (38.2)	21 (61.8)		
Unemployed (able to work)	37 (13.2)	20 (54.1)	17 (45.9)		
Unemployed (unable to work due to disability or other medical conditions)	53 (18.9)	27 (50.9)	26 (49.1)		
<b>Diagnosis</b>					
Schizophrenia <sup>1</sup>	74 (26.4)	34 (45.9)	40 (54.1)	8.037	<b>0.045</b>
Anxiety <sup>2</sup>	71 (25.4)	21 (29.6)	50 (70.4)		
Depression <sup>3</sup>	74 (26.4)	38 (51.4)	36 (48.6)		
Obsessive Compulsive Disorder	61 (21.8)	29 (47.5)	32 (52.5)		
<b>Previous Hospitalisation</b>					
Yes	123 (45.7)	61 (49.6)	62 (50.4)	3.869	<b>0.05</b>
No	146 (54.3)	55 (37.7)	91 (62.3)		
		M (SD)		t	P
<b>Age</b>		High	Low		
		38.90	37.47	-	0.549
		(11.588)	(11.299)	1.041	
<b>Age at time of diagnosis of illness</b>		29.47	28.69	-	0.952
		(10.390)	(10.427)	0.608	

<sup>1</sup> Includes schizophrenia, schizo-affective, schizophreniform disorder<sup>2</sup> Includes anxiety disorder, adjustment disorder, generalized anxiety disorder<sup>3</sup> Includes depressive episode, depressive disorder, major depressive disorder

**Table 2: Socio-demographic and clinical correlates of internalized stigma**

	95% Confidence Interval (CI)			
	Odds Ratio	Lower CI	Upper CI	P-value
<b>Gender</b>				
Female	1.613	0.901	2.887	0.107
Male	Ref.			
<b>Ethnicity</b>				
Malay	0.817	0.371	1.796	0.615
Indian	0.573	0.263	1.248	0.161
Chinese	Ref.			
<b>Education</b>				
Primary or below	1.644	0.474	5.705	0.434
Secondary or O/N Level	1.070	0.541	2.119	0.845
University	0.753	0.326	1.740	0.507
A level/ Diploma	Ref.			
<b>Employment Status</b>				
Student/Homemaker/Retired	1.343	0.513	3.517	0.548
Unemployed (able to work)	1.540	0.690	3.437	0.291
Unemployed (unable to work due to disability or other medical conditions)	0.988	0.430	2.270	0.978
Employed	Ref.			
<b>Marital Status</b>				
Married	0.621	0.250	1.544	0.305
Separated/Divorced/Widowed	1.234	0.489	3.113	0.656
Never Married	Ref.			
<b>Diagnosis</b>				
Anxiety	0.411	0.140	1.203	0.105
Depression	0.875	0.331	2.312	0.787
Obsessive Compulsive Disorder	0.996	0.380	2.607	0.993
Schizophrenia	Ref.			
<b>Hospitalization</b>				
Yes	1.063	0.535	2.111	0.862
No	Ref.			
<b>Age</b>	1.011	0.969	1.055	0.606
<b>Age of diagnosis</b>	1.002	0.961	1.045	0.925
<b>Intercept</b>	5.034	-	-	0.072

(-)2 LL = 345.22

Model  $\chi^2 = 19.204$   $p=0.317$   $df=17$ ,Nagelkerke  $R^2 = 0.093$

**Table 3: Associations between internalized stigma and quality of life, functioning, self-esteem and hope**

Regression model	Stigma 0=No 1=Yes	Odds Ratio	95% Confidence Interval (CI)		P-value	-2 Log Likelihood	Model X <sup>2</sup> , P-value, df	Nagelkerke R <sup>2</sup>
			Lower CI	Upper CI				
1	<b>WHOQOL Domains</b>							
	Physical Health	1.005	0.974	1.036	0.755	284.6	79.8, <0.001, 21	0.347
	Psychological Health	0.964	0.937	0.992	<b>0.013</b>			
	Social Relationship Environment	0.981	0.963	1.000	<b>0.044</b>			
		0.969	0.943	0.995	<b>0.020</b>			
2	GAF	0.959	0.94	0.979	<b>&lt;0.001</b>	326.66	37.77, 0.001, 18	0.177
3	RSES	0.84	0.789	0.894	<b>&lt;0.001</b>	301.67	59.94, 0.001, 18	0.272
4	DHS	0.991	0.968	1.014	0.443	344.278	19.029, 0.390, 18	0.093

Socio-demographic and clinical variables including age, age of onset of illness, ethnicity, education level, employment status, marital status, diagnosis, and hospitalization history were controlled for in each of the four regression models

WHOQOL- World Health Organization Quality of Life-BREF

GAF- Global Assessment of Functioning

RSES- Rosenberg Self-Esteem Scale

DHS- Dispositional Hope Scale

### Highlights

- 280 outpatients with various mental disorders seeking outpatient care were recruited.
- 43.6% of patients had moderate to high internalized stigma scores.
- There were no significant socio-demographic or clinical correlates relating to internalized stigma after making adjustments in logistic regression analysis.
- A negative relationship between quality of life, self-esteem and general functioning and internalized stigma was observed