DOI: 10.5455/msm.2017.29.211-215
Received: 27 April 2017; Accepted: 12 August 2017

ORIGINAL PAPER

Mater Sociomed. 2017 Sep; 29(3): 211-215

Mental Illness Related Internalized Stigma: Psychometric Properties of the Brief ISMI Scale in Greece

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ABSTRACT

Aims: Since evaluation regarding the impact of mental illness related internalized stigma is scarce, there is a great need for psychometric instruments which could contribute to understanding its adverse effects among Greek patients with severe mental illness. The Brief Internalized Stigma of Mental Illness (ISMI) scale is one of the most widely used measures designed to assess the subjective experience of stigma related to mental illness. The present study aimed to investigate the psychometric properties of the Greek version of the Brief ISMI scale. In addition to presenting psychometric findings, we explored the relationship of the Greek version of the Brief ISMI subscales with indicators of self-esteem and quality of life. **Methods:** 272 outpatients (108 males, 164 females) meeting the DSM-IV TR criteria for severe mental disorder (schizophrenia, bipolar disorder, major depression) completed the Brief ISMI, the RSES and the WHOQOL-BREF scales. Patients reported age and educational level. A retest was conducted with 124 patients. **Results:** The Chronbach's alpha coefficient was o 0.83. The test-retest reliability coefficients varied from 0.81 to 0.91, indicating substantial agreement. The ICC was for the total score 0.83 and for the two factors, 0.69 and 0.77 respectively. Factor analysis provided strong evidence for a two factor model. Factors 1 and 2 were named respectively "how others view me" and "how I view myself". They were negatively correlated with both RSES and WHOQOL-BREF scales, as well as with educational level. Factor 2 was significantly associated with the type of diagnosis. **Conclusions:** The Greek version of the Brief ISMI scale can be used as a reliable and valid tool for assessing mental illness related internalized stigma among Greek patients with severe mental illness.

Keywords: Internalized stigma; Mental illness; Psychometric properties; Quality of life; Self-esteem.

1. INTRODUCTION

The past two decades, there is increasing evidence that Greek society widely endorses stigmatizing attitudes toward psychiatric patients (1, 2). Mental illness related internalized stigma refers to a subjective process of agreement with negative stereotypes expressed by societies toward the mentally ill (3, 4).

International studies have highlighted a variety of adverse effects, when the patient internalizes stigma and believes that the socially endorsed stereotypes toward the mentally ill are truly applicable to himself (5, 6, 7). Importantly, internalized stigma erodes subjects' social status and adaptation. Moreover, highly self-stigmatized subjects are found to be more vulnerable to social withdrawal and unemployment (6). They therefore suffer from a lower quality of life and tend to perceive themselves as being personally responsible for their illness (8).

Clinically, they present lower self-esteem, self-efficacy, empowerment and insight, as well as poorer treatment adherence and delayed treatment-seeking (7-11). The findings of the aforementioned international studies highlight the emerging focus on mental illness related internalized stigma as a barrier to recovery and a key area of intervention. However, there have been few attempts to evaluate the impact of mental illness related internalized stigma among Greek patients with severe mental illness.

One of the most widely used measures designed to assess the subjective experience of stigma related to mental illness, is the Internalized Stigma of Mental Illness (ISMI) Scale. Around the world, this scale has been validated in multiple samples in a variety of languages (12).

The Brief version of the ISMI scale is a 10-item self-completed measure that assesses psychiatric

patients' experience of mental illness related internalized stigma. Within the context of the ASPEN European anti-stigma project, the ISMI scale was translated into Greek by two mental health professionals (11, 12, 13, 14). A process of back-translation was used in which a third native speaker mental health professional, blind to the Greek translation, was asked to translate the Greek version of the Brief ISMI scale into English. Only insignificant differences were found between the back-translated and the original versions. The back translation version was therefore found to be consistent with the original version.

This study aimed to evaluate the psychometric properties of the Greek translation of the Brief ISMI scale. In addition to presenting psychometric findings, we explored the relationship between the Greek version of the Brief ISMI subscales with indicators of self-esteem and quality of life. Previous studies have established that the mentally ill who present high levels of internalized stigma, often experience reduced self-esteem and impaired quality of life (11, 15). We therefore hypothesized that the Brief ISMI subscales would be negatively correlated with self-esteem and quality of life subscales. Furthermore, we investigated whether certain demographical (age, gender, education) and clinical characteristics (diagnosis) were significantly associated with mentally ill patients' experience of internalized stigma.

2. METHODS

2.1. Participants and procedures

The study was conducted with a sample of 272 outpatients recruited from the hospital-based and community mental health services of Eginition Hospital, First Department of Psychiatry, National and Kapodistrian University of Athens. Eligible patients met the Diagnostic and Statistical Manual of mental disorders-IV TR (17) criteria for schizophrenia, bipolar disorder or major depression.

Patients who were clinically unstable during the last month, with illness duration of less than 1 year, intellectual disability, other Axis I diagnosis or history of substance use disorder and/or organic brain disease were excluded. Diagnoses were confirmed using the Mini International Neuropsychiatric Interview (18) and the Structured Clinical Interview for DSM-IV Axis I Disorders (19).

The study was approved by all relevant ethics and research committees. Written informed consent was obtained from the participants.

The Brief version of the ISMI, the RSES and the WHOQOL-BREF scales were completed. Within an averagely 6-week interval, a retest was conducted with 124 participants to evaluate the ISMI scale's reliability. Demographical data (gender, age, educational level) was also collected. The aforementioned information reported by the participants was cross-checked with case reports and staff communication.

2.2. Measures

Brief ISMI scale. The Brief version of the ISMI scale is a 10-item self-reported instrument containing two items from each of the five subscales of the ISMI-29 scale (alienation, stereotype endorsement, discrimination experience, social withdrawal, stigma resistance). Both 29-item (11) and 10-item (13) versions were initially developed with a sample of patients who had a diagnosis of serious mental illness. Each item of the 10-item version is rated on a 4-point Likert scale. Higher total scores are indicative of higher levels of mental illness related internalized stigma.

WHOQOL-BREF. Quality of life was assessed using the Greek version of the abbreviated form of the World Health Organization Quality of Life Assessment, (WHOQOL-BREF). The initial 26 items comprise 4 domains: 1) Physical health and level of independence, 2) Mental health and spirituality, 3) Social relationships and 4) Environmental health. The Greek version of this measure was expanded by 4 items added for cultural adaptation purposes (20). The 4 additional items examine the following domains: a) Nutrition, b) Social life, c) Family life and d) Job satisfaction. All items are rated using a 5-point Likert scale.

RSES. As detailed in the validation study for the ISMI-10 (13), self-esteem was measured with the widely used Rosenberg Self-Esteem Scale (RSES) (21). This instrument consists of 10 items scored on a 4-point Likert scale, with higher scores reflecting higher levels of self-esteem. The RSES is based on a 2 domain structure, namely negative (factor 1) and positive (factor 2) graded questions. The reliability and validity of the Greek version of the RSES were verified by Galanou et al. (22).

2.3. Statistical analysis

The Cronbach's alpha coefficient was used to evaluate the internal consistency of the scale (23). Item response theory was used to identify problematic items (24- 25).

Factor analysis for categorical data was used to explore the latent structure of the scale. The sample was randomly divided into two equal samples; the first sample was used in exploratory factor analysis (EFA) and the second in confirmatory factor analysis (CFA). The fit of the proposed models was assessed through both measures of absolute and relative fit, such as the relative x^2, where values less than 2 indicate close fit (26), the Root Mean Square Error of Approximation (RMSEA), where values less than 0.08 indicate adequate fit (27), the Taylor-Lewis Index (TLI) and Comparative Fit Index (CFI), where values higher than 0.9 are required for close fit (28-29).

The scale's stability at item level was examined through the test-retest reliability using the Cohen's weighted Kappa coefficient and at score level through the intraclass correlation coefficients.

Concurrent convergent validity was assessed through correlation coefficients with Rosenberg and WHOQOL-BREF scales. Discriminative validity was evaluated by examining the association of the proposed factors with the demographic characteristics (t-test for 2 groups and one-way ANOVA for 3 groups).

Analysis was performed using R Core Team 2013 and the Statistical Package for Social Sciences software (SPSS), version 21.0.

3. RESULTS

3.1. Sample characteristics

The sample consisted of 108 males (39.9%) and 164 females (60.1%). The mean age of the sample was 47.2 2 (±10.5) years ranging from 19 to 72 years. 31% of the subjects were diagnosed with bipolar disorder, 20.8% with major depression and 48.2% with schizophrenia. Sample characteristics are presented in Table 1.

		Frequency	%
Gender	Male	108	39.9
	Female	164	60.1
Education	Primary and secondary School	71	26.1
	High School	108	39.7
	Higher than high School	93	34.2
Diagnosis	Bipolar disorder	85	31.3
	Major depression	56	20.6
	Schizophrenia	131	48.2
		Mean (Median)	SD (min–max
Age		47.1 (47.0)	10.4 (19 – 72)

Table 1. Sample characteristics

3.2. Item selection

The Cronbach's alpha coefficient for the Greek version of the Brief ISMI scale was 0.81, indicating good internal consistency. When removing the first two questions, the Cronbach's alpha coefficient became 0.83. Item total correlation analysis showed that the first two questions were poorly correlated with the other items ($r<0.3$), whereas there was satisfactory correlation for the remaining items ($0.3<r<0.8$).

Item Response Theory (IRT) was also used to identify problematic items. The graded response model showed that the Item 1 and Item 2 had low discrimination parameter (0.53 and 0.51 respectively) and the corresponding Item Information Curves indicated that these questions provided little information in the latent trait. Particularly, the first two items provided only the 5.9 % of the total information and thus it was concluded that these items could be excluded.

3.3. Factor Analysis

Exploratory factor analysis (EFA) for categorical items with Promax rotation and factoring method the principal axis solution was performed on a half sample randomly selected (N=136). The first two eigen values were higher than 1 (4.00 and 1.12). The corresponding parallel analysis suggested a two factor model. The two factor model demonstrated a good fit to the data with RMSEA-=0.074, relative x^2=1.685, TLI=0.950 and CFI=0.948. Table 2 shows the loadings of the items in the proposed factors. The first factor included discrimination experience items and one alienation item (item 6), while the second factor included the social withdrawal items and one item of alienation (item 4), stereotype endorsement (item 8) and stigma resistance (item 9). Table 2 shows the loadings of the items in the factors 1 and 2, which were named "how others view me" and "how I view myself".

	Item	Factor 1	Factor 2
Q7	People ignore me or take me less seriously just because I have a mental illness	0.84 (1.00)	
Q10	Others think that I can't achieve much in life because I have a mental illness	0.80 (0.70)	
Q6	People without mental illness could not possibly understand me	0.56 (0.69)	
Q4	Having a mental illness has spoiled my life		0.74 (1.00)
Q9	I can have a good, fulfilling life, despite my mental illness (inversed)		0.73 (0.72)
Q8	I can't contribute anything to society because I have a mental illness		0.61 (1.09)
Q3	I don't socialize as much as I used to because my mental illness might make me look or behave 'weird'		0.47 (1.19)
Q5	I stay away from social situations in order to protect my family or friends from embarrassment	0.35	0.45 (1.14)
*All CFA loading were significant (p<0.001)			

Table 2. EFA loadings for the first random half sample (N=136) and CFA loading (in parenthesis) for the second random half sample (N=136)*.

Confirmatory factor analysis for categorical items was performed using the remaining half sample (N=136). The unidimensional solution did not show close fit to the data (RMSEA=0.092, relative x^2=2.152, TLI=0.980 and CFI=0.986); whereas, the two-factor model proposed by EFA demonstrated a close fit to the data (RMSEA=0.079, relative x^2=1.833, TLI=0.986 and CFI=0.990). Thus, the model suggested by EFA was also confirmed by CFA and the corresponding loadings are given in Table 2.

3.4. Descriptive characteristics of the factors and their associations with gender and age

The inter-correlation of the factors was found 0.56, indicating a strong correlation ($p<0.001$).Descriptive characteristics for both factors by gender and their correlation with age are given in Table 3. It turns out that on average the factors do not differ among males and females. Besides that, there is no linear correlation between the factor and the participants' age.

		Males		Females			Total sample		Age
	a	Mean (median)	SD (min-max)	Mean (median)	SD (min–max)	p	Mean (median)	SD (min-max)	Correlation (p)
Factor 1	0.70	7.0 (7.0)	2.0 (3-12)	7.4 (7.0)	1.9 (3-12)	0.114	7.2 (7.0)	2.0 (3-12)	0.055 (0.365)
Factor 2	0.77	11.0 (11.0)	3.0 (5-20)	11.4 (11.0)	3.0 (5-20)	0.283	11.2 (11.0)	3.0 (5-20)	0.093 (0.127)

Table 3. Cronbach's alpha coefficients and factors associations with gender and age

3.5. Reliability

Cronbach's alpha coefficient in the total sample for the questionnaire of 8 items was found 0.83, indicating a good internal consistency. At the factor level the alpha coefficient was 0.70 for the first factor and 0.77 for the second factor. No problematic items were identified in terms of internal consistency and item total correlations. Test-retest reliability was evaluated using Cohen's weighted Kappa coefficient. The

	factor1		factor2	
n=132	Correlation Coefficient	p	Correlation Coefficient	p
Rosenberg 1	-0.112	0.200	-0.334	<0.001
Rosenberg 2	-0.285	0.001	-0.476	<0.001
Total Rosenberg's score	-0.206	0.018	-0.461	<0.001
OverallQoL	-0.376	<0.001	-0.341	<0.001
Mentalhealth	-0.256	0.003	-0.509	<0.001
Physicalhealth	-0.249	0.004	-0.262	0.002
Socialhealth	-0.295	0.001	-0.504	<0.001
Enviromental health	-0.262	0.002	-0.323	<0.001

Table 4. Correlation coefficients for the subscales of ISMI-8, Rosenberg and WHOQOL-BREF.

		Factor 1		Factor 2	
		Mean (median)	SD (min–max)	Mean (median)	SD (min–max)
Diagnosis	Bipolar disorder	7.2 (7.0)	2.0 (3–11)	10.5 (10.0)	3.2 (5-20)
	Major Depression	7.3 (7.0)	1.8 (3-10)	12.0 (12.0)	3.0 (5-20)
	Schizophrenia	7.2 (7.0)	2.0 (3-12)	11.3 (11.0)	2.8 (5-18)
p		0.977[a]		0.016[b]	
Educational level	Compulsory education	7.8 (8.0)	2.0 (3-12)	12.2 (12.0)	3.0 (7-20)
	Higher than compulsory	7.0 (7.0)	1.9 (3-12)	10.9 (11.0)	3.0 (5-20)
p		0.001[c]		0.001[d]	

Table 5. Descriptive characteristics of the factor by diagnosis and educational level. aKruskalWallistest, bOnewayANOVAtest, c Mann-Whitney U test, d t-test

coefficients varied from 0.81 to 0.91 indicating substantial agreement. The ICC was 0.83 for the total score and 0.69 and 0.77 for the two factors.

3.6. Validity

The correlation coefficients among the subscales of the ISMI-8 and the corresponding subscales of the Rosenberg and WHOQOL-BREF scales are presented in Table 4. The concurrent convergent validity is confirmed by the significant correlations among the subscales (after adjusting for multiple comparisons). In particular, the factor 1 of ISMI-8 is negatively correlated with the second subscale of Rosenberg (r=-0.285, p=0.001); whereas, the factor 2 is negatively correlated with both factors of the Rosenberg scale (r=-0.334, p=<0.001 and r=-0.476, p<0.001) and the total score of Rosenberg scale (r=-0.461, p<0.001). Both factors of ISMI-8 are negatively correlated with all the subscales of the WHOQOL-BREF scale.

In terms of discriminative validity, factor 2 is significantly associated with the type of diagnosis (p=0.016, Table 5). In particular, participants with depression had on average higher scores on factor 2 (mean=12.0, sd=3.0) than those who suffer from bipolar disorder (mean=10.5, sd=3.2, p=0.005). The average values of factor 1 did not differ across the type of diagnosis of the participants.

Both factors are associated with the participants' educational level. Participants with higher educational level, tend to have lower average values on both factors (p=0.001 and p=0.001, respectively). Participants who have finished the compulsory educational scored higher on both factors (factor 1: mean=7.8, sd=2.0; factor 2: mean=12.2. sd=3.0) than those who has finished higher than the compulsory educational level (factor 1: mean=7.0, sd=1.9; factor 2: mean=10.9. sd=3.0).

4. DISCUSSION

This study sought to explore the psychometric properties of the Greek version of the Brief ISMI scale. Our results introduced the ISMI-8 scale, which offers some potential psychometric advantages over the ISMI-10. The ISMI-8 total score demonstrated slightly stronger internal consistency estimates than did the ISMI-10 total scores.

Factor analysis supported the hypothesis of a bi-factor structure, indicating that the Greek version of the Brief ISMI scale may be best conceptualized as a bi-dimensional instrument. Two factors were obtained from our factor analysis: the first factor was named "how I think others view me", while the second factor was named "how I view myself". This finding echoes prior reports stating that high internalized stigma levels are normative for the Greek population (2, 12, 30). According to these reports, Greek psychiatric patients encounter great difficulty in finding social acceptance. They are therefore highly sensitive to critical others and greatly preoccupied by the way they think others view them.The aforementioned reports support the hypothesis that Greek psychiatric patients' high sensitivity to the way others view them leads to social isolation, lack of individual goals, distortion of the way patients view themselves and abandonment of basic rights.

Furthermore, the Greek version of the Brief ISMI scale, measuring a negatively themed construct, was found to be negatively associated with the RSES and the WHOQOL-BREF scales, assessing positive constructs. More specifically, statistically significant negative correlations were found between the ISMI-8 subscales and both the RSES and the WHOQOL-BREF subscales.

The significant correlations revealed between the RSES and the ISMI-8 subscales reflect prior studies where lower self-esteem was consistently found to occur among highly self-stigmatized patients (15, 31, 32). The significant correlations found between the WHOQOL-BREF and the ISMI-8 subscales corroborate the existing literature, which has established internalized stigma as a key predictor for lower quality of life (15, 31, 33, 34).

Additionally, the effects of age, gender, educational level, type of diagnosis were not reported in the original English validation paper. In the present study, we found no statistically significant correlations for age and gender. According to Livingston & Boyd, sociodemographic variables are neither consistently nor strongly correlated with internalized stigma levels (15).

Significant correlations were revealed for type of diagnosis. More specifically, factor 2 ("how I view myself") was positively associated with major depression. This finding echoes prior literature indicating that self-devaluation consistently co-occurs with major depression. More specifically, individu-

als with major depression are particularly vulnerable to self-devaluating ruminative schemas (10, 11, 31, 32). According to Silverstone & Salsali, further research is needed in order to examine whether, regardless of the diagnosis, negative self-image is representative of poor mental health) (32).

Moreover, we found that educational level was negatively associated with both ISMI-8 factors. Prior literature revealed that individuals with high educational level tend to challenge self-relevant stereotypes about being devaluated members of society. Since highly educated patients better understand mental illness; they are less likely to endorse discrimination and self-stigmatizing beliefs (3).

Overall, our results for internal consistency and test-retest reliability show that the Greek version of the Brief ISMI scale is a useful, reliable and valid self-report questionnaire to assess mental illness related internalized stigma among psychiatric patients . However, our findings may be more representative for patients with severe mental illness (schizophrenia, bipolar disorder, major depression).

Furthermore, our results should be interpreted with respect to the fact that our participants were outpatients who already used mental health services. Further studies should be conducted with participants who present other diagnoses and use different types of services.

5. CONCLUSION

Our results provided strong evidence that the Greek version of the Brief ISMI scale can be used as a valid tool to reliably measure mental illness related internalized stigma in Greek people with severe mental illness. Further research is needed with diverse samples regarding the psychometric properties and the sensitivity of this instrument to detect changes in attitudes following anti-stigma interventions.

- **Authors contribution:** Alexia Paraskevoulakou, Kassiani Vrettou, Katerina Pikouli, Evgenia Triantafillou, Anastasia Lykou and Marina Economou contributed substantially in the acquisition, analysis and interpretation of data, in drafting the article, as well as in critically revising it for intellectual content. Marina Economou substantially contributed in the conception and design. All authors read and approved the final manuscript.
- **Conflict of interest:** None declared.

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