Portuguese Version of the Stigma Scale: Preliminary Psychometric Characteristics

Versão Portuguesa da Escala de Estigma: Caraterísticas Psicométricas Preliminares

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ABSTRACT

Introduction: Stigma is associated with poor prognosis of illness and reduced help-seeking behavior, self-esteem and treatment compliance. The aims of this study were to study the reliability and construct validity of the King's *et al* Stigma Scale, and its association with Illness and Help-Seeking Behaviors scale (IHSBS) scores.

Material and Methods: One hundred and forty mental health patients filled out the Stigma scale and the Illness and Help-Seeking Behaviors scale. The exploratory factor analysis of the stigma scale was performed, and its reliability studied. The correlation analysis was used and mean differences in Stigma Scale scores among IHSBS groups were explored.

Results: The exploratory factor analysis indicated four factors (F): F1-Disclosure, F2-Discrimination, F3-Acceptance and F4-Personal Growth, which showed acceptable/good internal consistency (α from 0.70 to 0.91). Help-seeking behaviors were not associated with stigma. The levels of Discrimination were high in the group with global high-IHSB and in patients with medium/high illness behavior (IB) and health-related worries (HW). Additionally, Disclosure and overall stigma levels were higher in groups with high-HW and with medium-IB scores (when compared with the group with low-IB). The group with low-IB also had lower levels of Acceptance and Personal Growth when compared with the groups with medium-IB and high-IB, respectively.

Conclusion: The Stigma Scale (27 items) is a valid, reliable instrument and useful tool to assess stigma in mental health patients.
Keywords: Dementia; Mental Health; Psychometrics; Social Stigma; Surveys and Questionnaires

RESUMO

Introdução: O estigma está associado a pior prognóstico de doença e redução da procura de ajuda, autoestima e adesão ao tratamento. Os objetivos deste estudo foram estudar a fidedignidade a validade de construto da Escala de Estigma de King *et al* e a sua associação com as pontuações da Escala de Comportamento de Procura de Ajuda e de Doença (ECPAD).

Material e Métodos: Cento e quarenta doentes psiquiátricos preencheram a Escala de Estigma e a ECPAD. Foi realizada a análise fatorial exploratória da escala de estigma e a sua fidelidade estudada. Foram realizadas análises de correlação e exploradas as diferenças nas médias das pontuações da escala de estigma nos grupos de ECPAD.

Resultados: A análise fatorial exploratória indicou quatro fatores (F): F1-Divulgação, F2-Discriminação, F3-Aceitação e F4-Crescimento Pessoal (α de 0.70 a 0.91). Os comportamentos de procura de ajuda não se associaram ao estigma. Os níveis de Discriminação foram altos no grupo com CPAD total-elevado e nos grupos com comportamentos de doença (CD) e com preocupações com a saúde (PS) médios/elevados. Adicionalmente, os níveis de Divulgação e Estigma total foram superiores no grupo com PS-elevado e no grupo com CD-médio (quando comparado com o grupo CD-baixo). O grupo com CD-baixo também revelou níveis inferiores de Aceitação e Crescimento Pessoal em comparação com os grupos com CD-médio e CD-elevado, respectivamente.

Conclusão: A escala de estigma (27 itens) é um instrumento válido, fidedigno e útil para avaliar o estigma em doentes psiquiátricos.
Palavras-chave: Demência; Estigma Social; Inquéritos e Questionários; Psicometria; Saúde Mental

INTRODUCTION

Stigma can be defined as a person's negative appreciation or discrimination, based on features such as mental illness, ethnicity, drug abuse, or physical disabilities[1] and it can have negative consequences on a social, political, economic, and psychological level.[2]

The concept can be divided into felt stigma, when mentally ill people expect, fear or perceive discrimination/stigma from others or from society (for example, loss of job opportunities and/or renting opportunities and disregard for one's feelings/opinions), and enacted stigma (similar to experienced stigma), when actual episodes of discrimination against a person are experienced or, if not, the person fears they might occur in case his/her disease is exposed.[3] The latter may or may not be associated with internal stigma as one may not feel discriminated but still fear what others might think of his/her mental disease and avoid uncomfortable situations that might trigger discrimination. Felt stigma includes perceived stigma aspects, such as personal thoughts about the views and beliefs people or society have about the stigmatized group. Felt stigma is also frequently used to describe the internalized negative view of being mentally ill, and its associated feelings.[4] In this way,

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the construct of felt stigma is similar to self-stigma, which reflects the reaction of stigmatized people towards themselves, the acceptance and internalization of stigma as a result of the experience of episodes of discrimination and rejection perpetrated by people from the general population (public stigma), and can go along with feelings of loss of self-esteem, fear, guilt, and shame.[4]

Illness behavior (IB), which may be passive or active, refers to the way individuals feel, evaluate or act upon their symptoms.[5,6]

Help-seeking behavior (HSB) refers to the patient's decision to act on his/her symptoms by seeking help (medical or otherwise). This behavior is influenced not only by multiple sociodemographic and cultural factors, but also by the patient's past experiences.[5] Stigma may also have an influence in IB and HSB, leading patients to postpone seeking help and delay their treatment, which negatively influences the prognosis of the disease.[5,7]

The association between stigma, IB and HSB was studied in multiple samples, such as mental health patients,[8] university students[9] and the general population[10]; almost all showed similar results – stigma is associated with less help-seeking.

The negative consequences of stigma are worse among people with mental health disorders,[2] with higher levels of psychological distress (e.g., depression and anxiety symptoms).[8,11] Also, stigma can lead to less treatment compliance,[8] worse prognosis,[12] lower self-esteem[8,7] and worse occupational and social outcomes.[8,13] The stigma barriers to help-seeking include the patients' beliefs that mental illness might have a negative impact on employment opportunities and the way they would be treated or seen by others, including coworkers.[14]

Knowing that stigma has such deleterious consequences for mental health patients, and that, in Portugal, the studies on mental illness stigma are scarce and most of them focused on public stigma rather than personal stigma (i.e., the subjective experience of stigma) it is imperative to have a valid instrument to evaluate this construct in the Portuguese population in order to characterize stigma, study its influence on the quality of life of patients and on the different steps of the mental treatment: help-seeking, treatment, and prognosis. It can also be helpful for the development of specific intervention programs to reduce stigma and for the evaluation of their effectiveness and in clinical practice, thus improving the efficiency of mental health care, namely setting in motion processes that can counteract or reduce the effects of both types of stigma – patients with more severe disease are also the ones that experience more stigma.[11]

To our knowledge, there are only fifteen measures to assess personal stigma.[15] Among the three that evaluate both experiential stigma and self-stigma, only the Internalized Stigma of Mental Illness scale (ISMI)[16] and SS[7] have shown content and construct validity, acceptable internal consistency, and test-retest reliability,[4,15] and only ISMI was translated to European Portuguese and has its psychometric characteristics studied.[4,15] The aim of this study was to assess the King's *SS*[7] reliability and construct validity and its association with the Illness and Help-Seeking Behavior scale (IHSBS)[5] in a sample of Portuguese mental health patients. We predicted that the scores of these two will be inversely correlated.

MATERIAL AND METHODS

This study was approved by the Ethics Committee of the Faculty of Medicine of the University of Coimbra. The patients were invited (by investigators or by their physician) to join the study and participating subjects signed an informed consent form. The Inclusion criteria were the ability to understand the purpose and method of the research project and to be over 18 years old. No exclusion criteria were used. Recruitment was conducted from November/2017 to February/2018 and from September/2018 to January/2019.

Sample

A data set from 140 mental health patients (70% women), followed in an outpatient clinic at the Psychiatry Department of Coimbra and Baixo Vouga's Hospitals (62.9%) and six primary healthcare units in the Center region (37.1%), was collected using a non-probability convenience sampling method. The sample was made up of patients with a mean age of 39.49 years old (SD = 15.71, range: 18 – 78), and that were mostly single (48.9%) or married (36.7%) and were mostly born in Portugal (94.3%). Most of them finished elementary / high school (66.7%: 35.5% elementary school; 31.2% high school) and college (23.9%); 8.6% had a master or PhD degree. Of all patients, 57.9% reported their profession – most of them were specialists, working in intellectual or scientific activities (30.9%) and in personal services (23.5%) and a minority were unqualified workers (14.8%). We also registered that 38.7% of the patients were currently working, 21.2% unemployed and 11.7% were on sick leave/medical certificate. The psychiatric diagnoses (which could be more than one per patient) were reported by each physician whose patients participated in the study and comprised depression (43.6%), anxiety (27.1%), bipolar disorder (11.4%), schizophrenia (10.7%), disorders related with trauma/stress (5%), personality disorders (4.3%), obsessive compulsive disorder (4.3%), addictive behaviors (2.1%), eating disorders (2.1%), dissociative disorders (2.1%) and sleep disorders (1.4%).

Instruments

The SS was created by Michael King *et al*[7] to evaluate the personal stigma in mental health patients and consists of 28 items that are answered according to a Likert scale of five points, from "Strongly disagree" (1) to "Strongly agree" (5). Nine items are reversely scored (Appendix 1: https://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/14623/Appendix_01.pdf), so that a higher SS total score means higher levels of stigma. The scale originally had 42 items and arose from a pilot study, based on the qualitative analysis of the answers from an interview of the patients followed in mental health care facilities.[7]

Using the exploratory factor analysis (EFA) in a sample of 193 psychiatric patients with a wide range of diagnosis and from many psychiatric services located in London (north), a set of 35 items was reduced to 28 items (α = 0.87), divided into three factors: F1-Discrimination (α = 0.87), F2-Disclosure (α = 0.85) and F3-Positive Aspects (α = 0.64) and had good psychometric qualities.[7]

The cultural adaptation of the SS followed the standard procedures (translation into European Portuguese; back-translation; expert panel to check for equivalent meaning of the versions; pilot test of the initial SS version; final *SS* version with the inclusion of information obtained from pilot test participants).

The IHSBS was created by Macedo *et al*[5] and consists of 17 items that are answered according to a Likert scale of five points, from "Strongly disagree" to "Strongly agree". The items 2, 3, 6, 7, 12, and 14 are reversely scored so that a higher IHSBS total/dimensional scores are associated with more proactive illness and help-seeking behaviors. The study of the reliability and construct validity of the scale, performed in a sample of psychiatric patients for the first time during this study, suggested the scale was divided into three factors: F1-HSB (α = 0.69), F2- Health Worries (HW) (α = 0.76) and F3- Illness Behavior (IB) (α = 0.68). Both the scale and its factors showed adequate psychometric qualities.

Statistical analysis

Descriptive and inferential statistical analysis was performed using SPSS, for windows (25th version).

The parametric tests were applied when the distribution of the variables was close to the normal distribution (-1 < skewness and kurtosis < 1),[17] and if not, the non-parametric tests were used.

Pearson's and Spearman's correlations were used for analyzing the associations between the variables.[17] The Student's *t*-test, one-way ANOVA test with Bonferroni´s post hoc tests, Mann-Whitney U test and Kruskal-Wallis test were used, appropriately. The significance level was $p < 0.05$.

Firstly, some practical procedures were applied to assess the adequacy of the data for factor analysis. The sample size, the intercorrelations between the items (r > 0.30), the Kaiser–Meyer–Olkin measure of sampling adequacy (KMO) (value = / > 0.60), and Bartlett's test of sphericity with $p < 0.05$.

Secondly, the factor extraction was performed. To make an initial decision on the number of factors to retain for further investigation, the principal components analysis method (PCA)[17] was performed, as well as the Horn´s parallel analysis,[18] using the Watkins statistical program.[19] The components with eigenvalues over one were considered (Kaiser criterion)[20] and compared with the average eigenvalues for 100 randomly generated samples.[18] Additionally, the percentage of explained variance (EV) was considered, and the scree plot was inspected.[21] Lastly, the factors were rotated (factors' orthogonal varimax rotation) and only the items with a loading over 0.4 in each factor were retained in it.

To explore the discriminative power of the items,[22] the corrected item total/dimensional correlations were computed. The internal consistency estimation of reliability, Cronbach's alpha (α), was computed for SS (and dimensions).[22] The contribution of each SS item to the scale's internal consistency was assessed exploring what would be the α if that item was deleted from the scale/subscale.

The SS association with the IHSBS was assessed, using correlation analysis, and the analysis of SS scores by groups with different levels of illness and help-seeking behaviors. These groups were arranged based on the mean and standard deviation (SD) scores of IHSBS: low, the group with scores 1 SD below the mean; high, the group with scores 1 SD above the mean; medium, the group with scores between 1 SD under and above the mean.

RESULTS

Distribution of the items' answers

All items covered the scale of values, from the minimum value (1) to the maximum value (5), showed skewness and kurtosis values that do not indicate serious deviations from normality and medians very close to the mean value (Table 1). Thus, the items did not present relevant problems of sensitivity and normality.

Exploratory factor analysis procedures to assess the adequacy of the data for factor analysis

The size of the sample matched the criterion of five participants for each item, allowing the factorial analysis of the data, according to some authors.[17] Most of the correlations between the items were more than 0.30 but less than 0.90.[22] The Keiser-Meyer-Olkin measure (KMO) value of 0.861[23] and the statistical significance ($p < 0.05$) of the Bartlett's test of sphericity[24] proved the ability of factorization of the correlation's matrix.[17,22]

Principal analysis, parallel analysis and number of factors

The PCA method for the extraction of the initial factors indicated seven components with eigenvalues-greater-than-one (EV = 68.44%). The Cattell's scree plot[21] analysis showed a slope after ¾ components (Fig. 1).

The Horn's[17] parallel analysis indicated four components with eigenvalues exceeding the corresponding values for a randomly generated matrix's data of the same size, which suggested that the scale should be divided into four factors instead of the seven suggested by PCA.The parallel analysis has been shown to be among the most accurate methods, as PCA and the Cattell's scree test tend to overestimate the number of components,[17] and therefore we considered that the 4-factor solution was more suitable than the 3-factor solution, which was subsequently explored.

Factors' orthogonal varimax rotation

Table 1 shows the items' descriptive statistics, the

Table 1 – Descriptive statistics, rotated four factors matrix for 28-items Stigma Scale and the factor loadings in the four factors

Item	Mean (SD) Median	F1 D‡	F2 Dcr†	F3 A‖	F4 PG§	Original scale factor¶
SS28	2.69 (1.37) 3	**0.851**				F2-D
SS27	2.35 (1.31) 2	**0.779**				F2-D
SS25	3.06 (1.33) 3	**0.774**				F2-D
SS17	2.74 (1.34) 3	**0.697**	(0.315)			F1-Dcr
SS5	2.69 (1.38) 3	**0.681**				F2-D
SS12	2.70 (1.38) 3	**0.653**	(0.432)			F2-D
SS16	2.55 (1.33) 3	**0.637**	(0.409)			F2-D
SS26	2.93 (1.38) 3	**0.627**	(0.396)			F1-Dcr
SS24	2.94 (1.35) 3	**0.544**				F2-D
SS11	2.91 (1.43) 3	**0.537**	(0.485)			F1-Dcr
SS9	1.95 (1.14) 1.5		**0.773**			F1-Dcr
SS8	1.70 (0.94) 1		**0.723**			F1-Dcr
SS22	1.58 (0.94) 1		**0.695**	(0.344)		F1-Dcr
SS21	1.74 (0.98) 1		**0.684**	(0.441)		F1-Dcr
SS18	2.56 (1.28) 3	(0.372)	**0.673**			F1-Dcr
SS1	1.89 (1.16) 1		**0.615**			F1-Dcr
SS2	2.27 (1.34) 2	(0.367)	**0.610**			F1-Dcr
SS13	2.81 (1.43) 3	0.476	**0.527**			F1-Dcr
SS19	2.79 (1.40) 3			**0.660**		F1-Dcr
SS4	2.76 (1.35) 3			**0.615**		F2-D
SS14	3.16 (1.43) 3	(0.326)		**0.595**		F2-D
SS15	3.39 (1.39) 4	(0.398)		**0.515**		F2-D
SS20	1.71 (1.01) 1		(0.382)	**0.492**		F1-Dcr
SS7	2.54 (1.10) 2		(0.358)	**0.487**		F3-PA
SS23	3.01 (1.28) 3				**0.753**	F3-PA
SS3	2.75 (1.19) 3				**0.752**	F3-PA
SS10	2.89 (1.19) 3				**0.751**	F3-PA
SS6	3.48 (1.14) 4	0.169	-0.055	0.086	-0.189	F3-PA

F: factor; SS: Stigma Scale; ‡F1 D: Disclosure; †F2 Dcr: Discrimination; ‖ F3 A: Acceptance; §F4 PG: Personal Growth
¶Original scale[7]: F1 Dcr: Discrimination; F2 D: Disclosure ; F3 PA: Positive Aspects; factor loadings in brackets: acceptable loading values also in this factor
SD: standard deviation

rotated four-factor matrix for 28-items SS.

The four factors (4F) explained 55.88% of the total variance – explained variance (EV: F1 = 32.02%, F2 = 9.02%, F3 = 8.24%, F4 = 6.59%).

The items with a loading over 0.40 in the factor were retained in it. F1 and F2 are Disclosure and Discrimination; F3 evaluates the disease's Acceptance, not only by the patient but also by others, and F4 evaluates each patient's personal growth, boosted by their mental illness, so we defined it by Personal Growth.

The item number six of the factor Positive Aspects of the original scale[7] had an unacceptable factorial weight in all the factors (< 0.40).

The mean (SD) scores were the following: SS 70.61 (SD = 14.19); Disclosure 27.66 (SD = 8.90), Discrimination 16.51 (SD = 6.71), Acceptance 17.09 (SD = 4.21) and Personal Growth 9.35 (SD = 2.95).

Reliability

The item six did not contribute to the internal consistency of *SS* (28 items) (Table 2). Regarding the 27 items of the SS, they are representative of the construct measured by the subscale they're a part of and contribute to their internal consistency; the exceptions were items number 23 (Personal Growth) and number 24 (Disclosure) (Table 2). Despite that, the content of these two items was related with the construct measured by their corresponding subscale, they had acceptable correlations (both > 0.26) with the corrected total score of the SS (27 items) and they contributed to its internal consistency or to its maintenance; therefore, those items were kept in the SS.

The total scale consists of 27 items (the sixth item was excluded from the scale) and both the scale (α = 0.91) and its subscales had acceptable/high internal consistency (α: F1 = 0.91; F2 = 0.87; F3 = 0.70; F4 = 0.72).

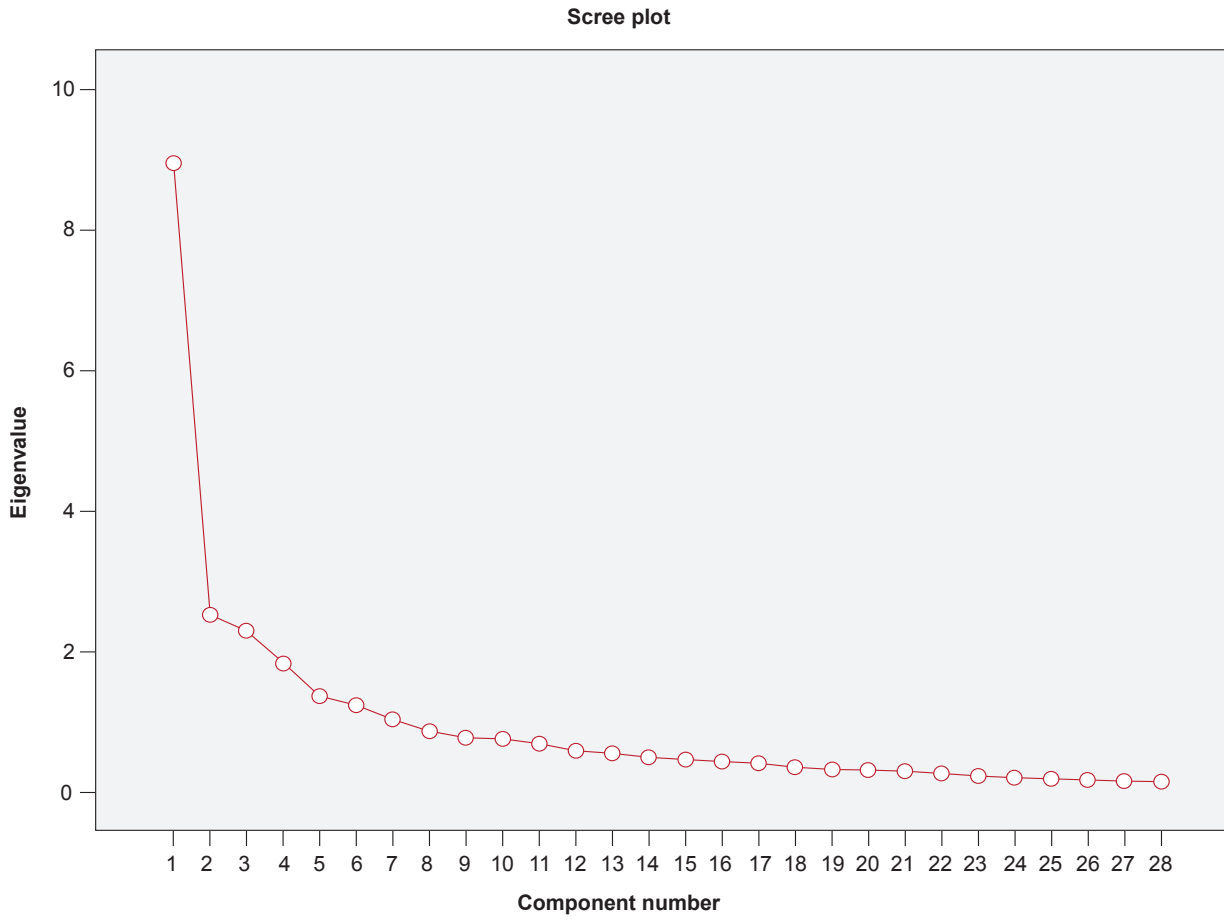

Figure 1 – Scree plot

Correlations between the scores of the SS

The score of the SS was highly and positively correlated with the factors Disclosure and Discrimination (r = 0.88/0.80, $p < 0.01$) and moderately correlated with the Personal Growth factor (r = 0.32 $p < 0.01$). The correlation between Disclosure and Discrimination was also high and positive (r = 0.65, $p < 0.01$). The factor Acceptance was not correlated with the SS score but was inversely correlated with Disclosure and Discrimination (r = -0.25/-0.29, $p < 0.01$).

Stigma asssociation with IHSBS

Correlations between the scores of the SS and the scores of IHSBS

Both total Stigma and Discrimination correlated positively and modestly or moderately with IHSBS (r = 0.22, $p < 0.05$/r = 0.26, $p < 0.01$), IB (r = 0.19, $p < 0.05$/r = 0.32, $p < 0.01$), and especially with HW (r = 0.37/.035, $p < 0.01$).

Also, Disclosure correlated positively with HW (r = 0.38, $p < 0.01$) and with IB (r = 0.19, $p < 0.05$); and Acceptance (low) correlated negatively with IB (r = -0.17, $p < 0.05$), meaning that the more IB the patients have, the more he accepts it.

The Personal Growth (PG) subscale did not correlate with any of the IHSBS subscales.

Differences in SS scores by IHSB groups.

Table 3 describes the levels of the stigma by groups of patients with low, medium and high IHSB scores.

Only the group with high-IHSB (versus low and medium-IHSB groups) showed higher levels of Discrimination.

There are no significant differences in stigma scores among HSB groups.

The group with high-HW had significantly higher levels of Disclosure and total stigma (versus low and medium-HW groups) and of Discrimination (versus low-HW group). Moreover, the group with medium-HW (versus low-HW) also showed higher scores of Discrimination.

The group with high-IB (versus low-IB group) had significantly higher scores of Discrimination and a trend towards higher Disclosure. The scores of Disclosure, Discrimination and total stigma were still significantly higher in the group with medium-IB (versus low-IB group).

The groups with medium and high-IB (versus also Low-IB) showed significantly more adequate Acceptance and PG.

DISCUSSION

The Portuguese version of King's *et al*[7] SS revealed construct validity and good reliability in Portuguese psychiatric patients, and its scores distinguished those with different levels of IHSB.[5]

Table 2 – The corrected item-total correlations and α if the item was deleted for the Stigma Scale - 28 items, and the corrected item-total dimensional correlations and dimensional α if the item was deleted for the Stigma Scale - 27 items (4-factors factorial solution).

	Stigma Scale - 27 items		Stigma Scale - 28 items	
F1 Disclosure items	Corrected item-total dimensional correlations	α if item deleted	Corrected item-total correlations	α if item deleted
SS28	0.813	0.894	0.686	0.894
SS25	0.700	0.901	0.599	0.896
SS27	0.769	0.897	0.711	0.894
SS5	0.678	0.903	0.620	0.896
SS17	0.723	0.900	0.651	0.895
SS12	0.750	0.898	0.708	0.894
SS16	0.737	0.899	0.683	0.895
SS26	0.582	0.908	0.553	0.897
SS11	0.571	0.909	0.514	0.898
SS24	0.469	0.915	0.541	0.897
F2 Discrimination items	Corrected item-total dimensional correlations	α if item deleted	--	--
SS9	0.699	0.843	0.546	0.898
SS21	0.638	0.851	0.595	0.897
SS22	0.663	0.849	0.576	0.898
SS8	0.576	0.857	0.434	0.900
SS18	0.658	0.847	0.639	0.896
SS2	0.651	0.848	0.597	0.896
SS1	0.574	0.856	0.441	0.899
SS13	0.575	0.860	0.616	0.896
F3 Acceptance items	Corrected item-total dimensional correlations	α if item deleted	--	--
SS4	0.491	0.635	0.330	0.902
SS19	0.506	0.629	0.411	0.900
SS14	0.444	0.652	0.381	0.901
SS15	0.442	0.652	0.403	0.900
SS7	0.346	0.681	0.259	0.902
SS20	0.334	0.684	0.421	0.900
F4 Personal Growth items	Corrected Item-total dimensional correlations	α if item deleted	--	--
SS3	0.638	0.504	-0.022	0.907
SS23	0.431	0.761	0.263	0.903
SS10	0.555	0.607	-.040	0.908
SS6	--	--	0.093	0.905

α Stigma Scale (28 items) = 0.902;
Stigma Scale (27 items): α F1 Disclosure = 0 .912; α F2 Discrimination = 0.867; α F3 Acceptance = 0.697; α F4 Personal Growth = 0.717

The SS comprises 27 items which evaluate Disclosure, Discrimination, Acceptance and Personal Growth (α from 0.70 to 0.91). This 4-factor solution is new and does not correspond to that found by King *et al*.[7] Using a sample of psychiatric patients from the north of London, they found that SS evaluated three factors, namely F1-Discrimination, F2-Disclosure and F3-Positive Aspects (PA). Contrasting to our findings, Discrimination was the factor that explained the largest amount of the variability, followed by Disclosure. The 3-factor solution of the SS was also found by other authors, using samples of patients with mental disorders from several different countries, such as Switzerland,[25] Iran,[26] Chine,[27] and Japan.[28]

The items with acceptable loading in Disclosure (F1) corresponded almost completely to those of this factor in the original version,[7] except for three items that are part of Discrimination and that involve feelings of isolation/loneliness (item 11), feelings about the injustice of life (item 26) due to the fact of having a mental illness, and non-disclosure of mental health problems due to the fear of people's reactions (item 17).

Regarding Discrimination (F2), all of its items had an

Table 3 – The SS scores (Mean, SD) by groups with low, medium and high levels of Illness and Help-Seeking Behaviors (IHSBS)¥

	IHSBS_T Groups			Test	*p*	Multiple comparisons
	Low‖ (n = 15) 1	Medium§ (n = 99) 2	High†† (n = 26) 3			
SS scores	**M (SD)**	**M (SD)**	**M (SD)**			
SS_F2	14.60 (3.92)	15.86 (6.79)	20.07 (6.62)	F (2,137) = 5.03	0.008**	3 > 1*, 2*†
	HW groups			**Test**	***p***	**Multiple comparisons**
	Low‖ (n = 11) 1	Medium (n = 105) 2	High†† (n = 24) 3			
SS scores	**M (SD)**	**M (SD)**	**M/SD**			
SS_ F1	22.55 (10.48)	26.81 (8.48)	33.71 (7.20)	H = 14.77	0.001**	3 > 1*, 2**‡
SS_F2	11.45 (4.30)	16.47 (6.66)	19.96 (6.69)	H = 10.76	0.005*	2 > 1*‡; 3 > 1**‡
SS_T	63.18 (12.34)	69.50 (14.50)	78.83 (9.89)	H = 13.18	0.001**	3 > 1*, 2**‡
	IB groups			**Test**	***p***	**Multiple comparisons**
	Low‖ (n = 45) 1	Medium (n = 79) 2	High†† (n = 16) 3			
SS scores	**M (SD)**	**M (SD)**	**M (SD)**			
SS_F1	24.31 (9.43)	29.20 (7.84)	29.44 (10.22)	H = 9.54	0.009*	2 > 1**‡
SS_F2	13.53 (5.94)	17.61 (6.08)	19.44 (8.88)	H = 15.48	< 0.001***	2 > 1**‡, 3 > 1*‡
SS_F3	18.38 (4.27)	16.46 (3.92)	16.63 (4.86)	F (2,137) = 3.20	0.044*	1 > 2*†
SS_ F4	9.73 (3.18)	9.47 (2.61)	7.69 (3.24)	F (2,137) = 3.14	0.047*	1 > 3*†
SS_T	65.96 (12.85)	72.73 (13.49)	73.19 (18.42)	H = 7.61	0.022*	2 > 1*‡

*: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$; M: mean; SD: standard deviation; ¥: Only the statistically significant differences between groups were described; †: Bonferroni´s test; ‡: Mann-Whitney U test; F: one-way ANOVA test; H: Kruskal-Wallis test

F: factor; IHSBS: Illness and Help-Seeking Behavior scale; IHSBS_T: IHSBS total score; HW: Health Worries; IB: Illness Behaviors; ‖Low: group of subjects with IHSBS total or dimensional scores 1 SD under the mean; ††: High - group of subjects with IHSBS total or dimensional scores 1 SD above the mean; §: Medium - group of subjects with IHSBS total or dimensional scores between 1 SD under and above the mean.

SS: Stigma scale; SS_T: SS total score; SS_F1: Disclosure; SS_F2: Discrimination; SS_F3: Acceptance; SS_F4: Personal Growth

acceptable loading on this same factor of the original version.[7]

The items of the factor PA were distributed in the factors Acceptance and, in particular, in PG. All the items of PG are part of PA dimension of the original version. The Acceptance includes items that have acceptable loadings in PA (item 7), Discrimination (items 19, 20) and Disclosure (items 4, 14,15) dimensions of the original version, which are associated with the acceptance of the mental illness and to the perception that others also accept it, and with the intention of revealing the mental health problems.

The SS total score correlated with high levels of Disclosure and Discrimination, and with the low PG, therefore these dimensions evaluate the total stigma construct. The Discrimination and Disclosure were strongly associated, suggesting that patients who feel discrimination may also conceal their mental health problems to avoid negative stereotyping, labeling, stigmatization, which may not only hamper their social and vocational integration, but also interfere with help-seeking and effective treatment.

The Discrimination and Disclosure dimensions correlated with high levels of Acceptance. Thus, the results showed that, even though stigma is correlated with low PG, it was also shown that the Discrimination and Disclosure dimensions may create more Acceptance of the disease. This means that, for some patients, there might be a bright side in having a mental illness, as it can promote positive changes.[29] It may be possible that patients who better accept their mental illness or perceive acceptance of it by others may become more open to making positive changes[7] and more prone to disclosure,[27] which may promote better adjustment.[29]

Regarding the association between SS and IHSBS[5] scores, the results showed that neither the total stigma nor its subscales were significantly associated with the HSB. They also didn't differentiate the groups with low, medium and high HSB which means that the help-seeking is independent from the stigma in this population.

The levels of Disclosure, Discrimination and total Stigma were positively associated with HW and were significantly higher in the groups with more HW, which suggests that the patients with these cognitive characteristics can find it difficult to disclose their condition and are afraid of discrimination due to their illness and high levels of global stigma.

On one hand, the mean values of Disclosure, Discrimination and total Stigma increased gradually between the groups with low, average and high IB. On the other hand, the Acceptance and PG gradually became more adequate. These results suggest that patients with higher IB, meaning more proactive, show higher levels of total Stigma and Discrimination and tend to feel more afraid of the Disclosure, but also have more positive feelings towards their illness, more Acceptance and more PG compared to patients with less proactive IB.

High levels of Discrimination were positively associated with higher levels of total IHSB. Therefore, the results suggest that the greater the Discrimination, the greater the patient's proactivity regarding IHBS.

We thus concluded that, in this sample, contrary to what we had predicted, stigma did not correlate with HSB. Even though it is not the expected result, other studies have similar findings. For example, a study showed that stigma did not prevent patients from seeking their GP's for their health problems,[30] and two meta-analysis concluded that stigma was not always significantly associated with active HSB and that they can even be inversely associated.[10,31] It is possible that differences in the methodology of the studies accounted for these dissonant results.[31] Additionally, the possibility that these results may be justified by regular follow-up and have a higher mean age. In fact, some studies show that the negative effect of stigma is stronger in adolescents,[10] in younger patients[32] and in the beginning of the treatment.[8] The period from adolescence to early adulthood shows a higher incidence of most mental disorders[33] and therefore the first contact with a healthcare professional help may occur at this time. The beginning of the treatment is the period when the patients have to accept their illness and the need for receiving psychiatric treatment (first appointment, being diagnosed with a psychiatric illness and beginning treatment).[34,35] It has also been shown that seeking help one time changes the way each patient perceives help-seeking behavior.[31]

The high representativeness of women in the sample may also contribute to the lack of association between stigma and HSB, as women reveal less stigma-related barriers to help-seeking[10] and higher mental health literacy,[36] both of which may promote adjusted help-seeking behaviors. There is also high representativeness of graduates and post-graduates in the sample and education is associated with reduced stigma and high levels of mental health literacy,[10] namely a high level of knowledge about mental health, awareness, and health-seeking attitudes.[36] Besides stigma, there are many predictive factors of help-seeking behavior such as the normalization of mental health problems, knowing they are not the only ones with these kind of problems, having friends that also have psychiatric problems, the knowledge that the appointments are confidential, the lower caregiver stigma, the respect and non-judgment of healthcare professionals, higher physical dysfunction and the belief that the doctor will help.[10,30] Regarding the factors that negatively influence the HSB besides stigma, there are, for example, the desire to solve the problem by themselves, the patients' belief that they do not need help, a feeling of embarrassment to talk about their problems, the patients' concerns about hospitalization and the treatments available, poor knowledge about the available services and how to contact them, difficulties in taking time off work and having financial problems.[14,31,33] Therefore, patients that have a higher level of mental health literacy and a more positive attitude regarding seeking professional help are the ones that do it the most.[30,36]

Therefore, patients that are already followed in regular appointments because of their psychiatric problems, such as those who participated in the present study, probably know that they cannot solve the problems by themselves and that they need the help of healthcare professionals. As the appointments are in public institutions and Portugal has a high governmental financial participation in healthcare costs, it seems less likely that low HSB is associated with financial problems. Despite this, a study performed with most patients of the sample of the present study[14] revealed that the financial concerns figure among the top instrumental barriers for help-seeking.

Even though stigma in the present sample of psychiatric patients was not associated with HSB regarding the illness itself, it was associated with HW and IB, which can have an impact on the patients' quality of life and treatment outcomes.

The development of campaigns to eradicate or, at least, to decrease social negative judgments and rejection of people with psychiatric problems (including professionally)[37] is of the utmost importance. These campaigns should also target the shame that the patients feel for having psychiatric problems and contribute to the abolishment of stereotypes, such as that patients with mental health problems are dangerous, weak or unable to contribute to the society in which they live in.[10] Interventions to reduce stigma must also focus on the promotion of personal growth and acceptance of the mental illness.

A point in favor of the SS and its factorial solution is that it allows us to evaluate not only the two major components of the personal stigma – Discrimination and Disclosure, but also positive aspects such as Acceptance and PG related with the stigma.

The sample of the present study was a non-probability convenience sample of out-patients from two hospitals and family health units of the center area of Portugal and might not be representative of all people with mental disorders, which limits the generalizability of the results to all mental health patients. The validation of the scale in other populations of psychiatric patients, from several areas of Portugal, can be an important contribution to the knowledge of the psychometric characteristics of the scale.

Although the sample size of 140 participants is acceptable for the EFA,[17] that size did not allow us to perform, in addition to it, the confirmatory factorial analysis, which we intend to carry out in future studies. Future studies with two assessments may allow the study of the temporal stability of

the SS scores.

There is preliminary evidence of criterion-related validity and convergent validity of SS. The SS factor structure explains stigma differences among the diagnoses of participants in the present sample, and differences were found in Acceptance and PG.[38] Another study with most participants of the present sample showed that total SS score was positively associated with stigma-related barriers.[14]

CONCLUSION

The Stigma scale showed good psychometric qualities in this sample of psychiatric patients including reliability, and construct validity, meaning it is a useful instrument to measure stigma from the perspective of the person with mental illness. In particular, the SS items evaluate Disclosure and Discrimination, and the lower levels of Acceptance and PG associated with the disease. Its scores distinguished the patients with different IHSB. The scale can be particularly helpful not only for evaluating stigma per se, but also the Acceptance and PG that emerges from the disease and can be a valuable instrument to assess the impact of stigma on IHSB. The SS can be a useful tool for research and clinical purposes in Portuguese patients with mental disorders.

OBSERVATIONS

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AUTHORS CONTRIBUTION

CS: Participated in data collection; design of the study; statistical analysis; contributed to the writing of the manuscript: draft of the paper; final approval of the manuscript.

MJS: Participated in data collection; design of the study; orientation of the work; statistical analysis; critically reviewed of the different versions of the paper and contributed to its correction; final approval of the manuscript.

NM, IR, AA: Coordinated of the sites where the assessment was conducted; participated in the data collection of most of the participants; critically reviewed the paper; final approval of the manuscript.

AFM: Participated in data collection of most of the participants; constructed the database; critically reviewed the paper; final approval of the manuscript.

ATP: Participated in the research project elaboration and submission to the Ethics Committee of the Faculty of Medicine of the University of Coimbra; critically reviewed the paper; final approval of the manuscript.

CC: Critically reviewed the paper; final approval of the manuscript.

AM: Directs the team and coordinates the research project in which the present study is framed. Participated in the research design and in the orientation of the work; critically reviewed the paper and contributed to its correction; final approval of the manuscript.

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in 2013.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

COMPETING INTERESTS

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