Title: **Attitudes Towards Mental Health Problems Scale: Confirmatory Factor Analysis and validation in the Portuguese population**

Shortened version of the title: **Attitudes Towards Mental Health Problems Scale: CFA**

Abstract

Several studies about stigmatization and shame towards mental health problems have contributed to minimizing the impact of these negative attitudes on people diagnosed with mental illnesses, on their families and on their communities. The Attitudes Towards Mental Health Problems scale (ATMHP) is a self-report scale aimed at the assessment of attitudes towards mental health that involve several factors relating to attitudes and shame (internal, external and reflected shame) when facing mental health problems. The goal of the current study was to translate and to adapt this scale to the Portuguese population, and to study its psychometric properties in a sample of Azorean adults with and without psychiatric problems. The scale was administered to 411 participants with ages between 19 and 81 years old. Confirmatory Factor Analysis was carried out on the initial model proposed by the authors of the ATMHP and results showed a poor adjustment. An alternative model comprising an additional factor was tested and presented good model fit indices. Based on the alternative model, further analysis revealed that the scale has good psychometric properties.

Key words: Mental illness; Stigma; Attitudes; Shame; Internal shame; External shame; Reflected shame; Assessment.

Introduction

Mental health problems have always been a source of erroneous or mistaken beliefs that change over time (Espinosa, 1998; Manderscheid, et al., 2010). The attitudes and beliefs about mental illness can be influenced by several factors, such as cultural stereotypes about the mentally ill, information disseminated in social media, the degree of knowledge or interactions individuals establish with people with psychiatric problems, or the degree of contact with mental health care services (e.g. Attitudes of professionals and mental health care service characteristics) (Corrigan, 2004; Ghai, N. Sharma, S. Sharma & Kaur, 2013; Have, et al., 2010; Wahl, 2003).

These beliefs and attitudes may be valued as positive or negative. On one hand, when the beliefs relating mental illness are positive, they may result in support and inclusion behaviors, and on the other hand, may result in exclusion, abuse or discrimination of people living with mental illnesses, when they are negative (Centers for Disease Control and Prevention, 2012), further reinforcing stigma concerning this issue.

According to Goffman (1968), stigma is used in reference to a deeply depreciative attribute, resulting from social comparison in which the stigmatized individual presents attributes (regarding appearance, conduct or behavior) that deviates from the accepted standards of a given society. The stigma of mental illness is defined as a set of beliefs, attitudes and perceptions focused on the undesirable characteristics of a person (illness), and that may result in social behaviors such as distancing or discrimination (Jones, 1984; Link & Phelan, 2001). According to Thompson et al. (n.d., as cited in Moldovan, 2007), this type of stigma goes beyond stigma related to other conditions, due to the debilitation originating from psychiatric problems being considered as more incapacitating.

As suggested by Lewis (1992, 1995, 1998), there is a strong relationship between stigma and shame, considering that stigma implies the existence of a difference or a defect that may generate feelings of shame in the person who is a target of stigma, or the person who relate to them. A large body of literature supports this view, stating that stigma is a cause of shame (Eg: Turner, 1994; Turner, Dofny, & Dutka, 1994; Wehmeyer, 1994 cited in Lewis, 1998), and to the extent that shame is often pointed out as the central emotion elicited by stigmatization (Dinos, Stevens, Serfaty, Weich, & King, 2004; Rusch et al., 2009; Rusch et al., 2010). Rusch, Todd, Bodenhausen, Olschewski, & Corrigan, 2010 states that shame is strongly related to stigma, considering that people with psychiatric problems who have a negative view of mental illness feel ashamed due to their condition, and interpret signs of discrimination according to their cognitive schemas, turning shame into a vulnerability factor for the acceptance of stigma as legitimate.

Gilbert et al. (2007) theorized the relationship between stigma of mental illness and shame in a model that includes internal shame (negative self-evaluations), external shame (the belief that others regard the self as inferior, for having a mental health problem) and reflected shame (the belief that one may shame others or that others can shame the self, due to their mental illness) as aspects encompassed in attitudes towards mental health problems.

According to Gilbert et al. (2007), negative attitudes towards mental health problems may generate internal shame, stemming from negative self-judgments, in which individuals regard the themselves as inferior, worthless or unattractive (Cook, 1996; Gilbert, 1997; Gilbert et al., 2007; Lewis, 1987). These attitudes may also generate external shame, the negative feelings arising from the anticipation that others may poorly judge the self due to their undesirable personal attributes (Allan, Gilbert, & Goss, 1994; Gilbert et al., 2007). Finally, reflected shame refers to the situations in which individuals believe that they may shame others (their families or communities) or that others may shame them because of a mental illness (Gilbert, 2002; Gilbert et al., 2007). In other

words, individuals may feel ashamed or guilty because their mental illness may cast shame to their families, or because they feel concerned about being seen as inferior by members of their communities because they are somehow related to others that suffer from a mental illness. Based on these constructs, and to address the need of assessment tools aiming at the specificities of stigma in mental illness (Rosario & White, 2006; Gilbert et al., 2007) devised a new scale, the Attitudes Towards Mental Health Problems (ATMHP), which focuses on the assessment of attitudes towards mental health problems across several dimensions: perceived stigma, internal shame, external shame and reflected shame.

Effects of attitudes towards mental health

Because many people suffering from psychiatric problems are extremely vulnerable to stigmatization, the attitudes towards mental health problems and their impact are important subject of study over the past decade (e.g. Corrigan, 2004; Leff. & Warner, 2008; Whitly & Campbell, 2014). Despite several efforts to change beliefs about mental health problems (Angermeyer & Dietrich, 2006) through programs and measures aiming to combat stigma (Corrigan & Shapiro, 2010; Rosen, Walter, Casey & Hocking, 2000), several studies suggest that stigma and negative attitudes did not decrease over time and that people suffering from mental illness are still perceived negatively, rejected, devalued, excluded or feared by others (Angermeyer & Matschinger, 2005, Schomerus, et al., 2012). These data raise a considerable concern, to the extent that stigma may lead to the discrimination and marginalization of people suffering from mental illness (Corrigan, Markowitz, & Watson, 2004), further decreasing one's social and psychological wellbeing (Perlick, 2001) and the quality of life of the affected person, including their families (Kondrat & Early, 2011). Stigma can restrict several aspects of the social life, increasing isolation, affecting

education, hindering the access to jobs and to other opportunities within the community (Henry & Lucca, 2004, Leff & Warner, 2008; Unal, Hisar, Celik & Ozguven, 2010) and also affecting personal relationships, damaging the relationships with friends and family (Moldovan, 2007).

Several studies showed that fears of being stigmatized can discourage people with psychiatric problems to seek help, elicits shame of admitting symptoms to health professionals (Docherty, 1997) and often impedes access to treatment in a timely manner (Corrigan, 2004; Ghai, et al., 2013; Yap, Wright & Jorm, 2011). A longitudinal study carried out with people suffering from severe mental illness showed that participants are constantly aware of stigma towards mental illness, and this awareness leads them to take several actions to anticipate, prevent, cope and avoid stigma and discrimination (Whitly & Campbell, 2014).

The degree of familiarity and knowledge about psychiatric problems favors more positive attitudes towards mental illness, and several studies suggest that the more contact people have with people with these problems, the more positive their attitudes towards mental illness tend to be (e.g. Corrigan, et al, 2001; Dessoki & Hifnawy, 2009;).

This familiarity effect with mental illness is also known in studies involving people with mental illness relatives (e.g.: Corrigan et al, 2001; Dessoki & Hifnawy, 2009; Penn, et al., 1994). These studies showed that attitudes towards psychiatric problems are more positive when compared with people with no relatives suffering from mental illness, especially when concerning shame and social distancing. On the other hand, some authors refer that individuals present more positive attitudes towards mental health problems in individuals within the family than within the community (Ghai, et al., 2013; Gilbert, et al., 2007). Ghai et al. (2013) explains that this may be because individuals feel more empathy and concern for their relatives and more indifference towards unknown members of the community. However, these results need to be explored in further studies.

Despite the existing literature in stigma, shame and attitudes toward mental illness, it is important to understand it further, because several studies highlight that knowing the attitudes of a community towards mental illness is fundamental in the development of effective programs in mental health education and reduction of stigma (Corrigan & Shapiro, 2010; Dessoki & Hifnawy, 2009; Rosen, et al., 2000; Vezzoli et. al, 2007). Studies should also include people living with mental illness, who may provide a valid contribution from their first-person experience in the identification of key factors involved in stigmatization (Moses, 2014). Moreover, there are no studies about mental illness and stigma that actually include people with psychiatric problems in their samples (Angermeyer & Dietrich, 2006). Gilbert and colleagues (2007) further emphasize the importance of these studies being carried out in different communities. According to some authors, the cultural differences relating to beliefs about mental illness should be explored (Gilbert, et al., 2007; P.Gilbert, J.Gilbert, & Sanghera, 2004; Angermeyer & Dietrich, 2006). Different communities may have different values and norms that can influence how people with psychiatric problems are seen or treated (Gilbert et al., 2004) For instance, in collective cultures, the emotions such as shame and pride are more focused on how one's behavior may impact others than the self, when compared to more individualistic cultures (Mesquita, 2001).

With this purpose in mind, the current study aims at the translation and validation studies of the Attitudes Towards Mental Health Problems scale (ATMHP) in a Portuguese sample comprising participants from the general population and people living with mental illness. The availability of these kind measures for Portuguese native-speakers is of utmost importance, taking into consideration that it is the fifth most spoken language worldwide, with over 240 million native-speakers in the five continents (Ethnologue, 2013).

Method

Participants

The sample in this study comprises adult participants of both sexes, with 18 years or older, residing in the Autonomous Region of Azores, Portugal. A convenience sample included participants from the general population and who were receiving treatment for mental health problems (people with psychiatric disorders). This latter group was contacted through the regional health care services, who provided the necessary permissions from the institutional ethical review boards to the researcher team to conduct this study.

Participation was voluntary and all participants signed an informed consent form stating the goals of the study, and warranting anonymity and data confidentiality. People with mental illness who had any difficulties filling the research protocol were aided by a researcher and psychologist.

Procedures

Translation and adaptation of the ATMHP

The English version of the ATMHP was initially translated to Portuguese by a translator and two researchers with expertise in Psychology and experienced in the translation of scientific texts. The translations were then compared in any divergent terms of ambiguous expressions. The final step included a back-translation by a third researcher with expertise in translation of academic text and a bilingual translator fluent in Portuguese, in order to assert the equivalence of both versions of the scale.

Statistical analysis

Data analysis was carried out using SPSS v. 20.0, and Confirmatory Factor Analysis was carried out with MPLUS v6.12 (Muthén & Muthén, 2010). Quality of model adjustments was

assessed through the following fit indices: Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), with reference values of adjustment above .90; Parsimony CFI with acceptable values above .06; Root Mean square Error of Approximation (RMSEA) below .05. The reference values are according the suggestions by Kline (2010) and Maroco (2010). Construct reliability and validity was evaluated through Composite Reliability (CR) (Fornell & Larker, 1981) and construct validity was assessed through Average Variance Extracted (AVE). Composite reliability values ≥ .70 and AVE ≥ .50 were adopted as reference values indicating good construct validity and reliability (Fornell & Larker, 1981).

Measures

Attitudes towards mental health problems (ATMHP - Gilbert, et al., 2007) comprises 35 items assessing different aspects of attitudes and shame referring to mental health problems. The response options range from 0 ("Do not agree at all") to 3 ("Completely agree"), and is divided into five sections, as described in table 1. Higher scores in this scale indicate more negative attitudes towards mental health problems. Preliminary analysis showed that all subscales presented good internal consistency, with Cronbach's alpha ranging from .85 to .97 for Asian and non-Asian students, respectively (Gilbert et al., 2007). Because the studies of the dimensionality and psychometric properties of the ATMHP is the main goal of this study, data on the Portuguese version of the scale will be presented in detail in the Results section.

Table 1

Other as Shamer Scale (OAS) (Goss, Gilbert, & Allan, 1994; Portuguese version by Matos, Pinto-Gouveia & Duarte, 2011) is a self-report scale assessing external shame, the negative perceptions each person has about how others sees them, or in other words, the extent to which one is regarded as inferior, flawed or unattractive by others. This scale consists of 18 items rated in a Likert-type response scale ranging from 0 ("Never") to 4 ("Almost always"). Higher scores indicate higher levels of external shame.

Both the original and the Portuguese version of the scale presented good internal consistency (Cronbach's alpha = .92 and .91, respectively) (Goss et. al, 1994; Matos et al., 2011). In the current sample, internal consistency was of .96.

Results

Sample characteristics

The current sample included 411 participants, with ages between 19 and 81 years old (M=43, SD=13.78), 116 were males (28.2%) and 295 females (71.8%). Most participants were married 214 (52.1%), living in urban areas 285 (69.8%), and were from the low socioeconomic status 245 (59.8%). In this sample, 228 participants were from the general population and 183 presented psychiatric problems. Sample characteristics are presented in table 2, and group comparisons showed that both groups are equivalent concerning gender, marital status, area of residence distributions, and age. Statistically significant differences were observed concerning education and socioeconomic status, in which participants with psychiatric problems presented significantly less years of education and lower socioeconomic status.

Table 2

Item analysis and scale dimensionality

Preliminary analysis on the scale reliability showed that the internal consistency of the total scale was very good (α =.940). Each section also presented acceptable to good and very good internal consistencies: α = .844 for the Section 1 "Attitudes towards Mental Health Problems"; α = .919 for the Section 2 "External Shame/Stigma Awareness"; α = .922 for the Section 3 "Internal Shame"; α = .832 for the Section 4 "Reflected Shame 1", and α = .902 for the Section 5 "Reflected Shame 2". A confirmatory factor analysis of the model suggested by the authors of ATMHP was carried out, comprising 5 latent factor as described by Gilbert, et al. (2007).

All items presented adequate factor loadings ($\lambda ij \geq .5$) and model fit indices presented some values that indicate a poor fit: $\chi 2(550)= 2464.312$, p = .000; CFI = .946 ; TLI=.942; RMSEA =.092, P(rmsea ≤ .05) = .000. However, modification indices indicated that freeing some parameters would improve the fit of this model. Further adjustments were calculated in the single general model, freeing five parameters based on the highest modification indices. Correlations were established between the errors of items 29 and 30 from the "Reflected Shame 1" factor; 3 and 4, 1 and 2 from the "Attitudes Towards Mental Health Problems" factor; 15 and 17 from the "External Shame/Stigma Awareness" factor. After freeing those parameters, model fit indices improved, but χ^2 and RMSEA still presented unacceptable values: $\chi^2(546)= 2282.470$, p =.000; CFI =.951; TLI=,947; RMSEA =.088, P(rmsea ≤ .05) =.000.

Taking into account the components obtained in the initial analysis, an alternative six-factor model was created (see Table 3). This alternate model (Model 2) included items that belonged factors 1 and 2 in a single factor "Community's Attitudes Towards Mental Health Problems", in order to group individuals' perceptions relating to the attitudes of their community towards mental health problems in a single latent factor. The same criteria used to group items belonging to factor 2, "Family Attitudes Towards Mental Health Problems", that included items belonging to sections

1.2 and 2.2 of the original model, referring to attitudes from family members. The items belonging to Factor 4 in the original model were divided into two latent factors, one including items concerning the way individuals think their families would be regarded by others if they had a psychiatric problem (items 24-27, "Reflected shame on family") and another comprising items referring to worries that individuals may have relatively to the way their family would be regarded if they had a psychiatric problem (items 28-30, "Worries about reflected shame on family"). The factors "Internal Shame" and "Reflected shame on the self" remained unchanged.

Table 3

This alternative model showed better model fit indices: $\chi 2(545)= 1744.320$, $p = .000$; CFI =.966; TLI=.963; RMSEA =.073, P(rmsea ≤ .05) = .000. Further adjustments were calculated in the 6-factor model, freeing parameters based on the highest modification indices. Correlations were established between the errors of items 20 and 19 from the "Internal Shame" factor, 4 and 3; 2 and 1 from the "Attitudes towards Mental Health Problems" factor. After freeing those parameters, the model presented good fit indexes: $\chi 2(541)= 1167.871$, $p = .000$; CFI = .982; TLI=.098; RMSEA = .053, P(rmsea ≤ .05) =.110.

The final model presented good Composite Reliability (≥ .70): Factor 1=.949; Factor 2= .958; Factor 3=.947; Factor 4=.936; Factor 5=.908 and Factor 6= .894. Construct validity was assessed through AVE, with all factors presenting values higher than .5, as defined by Fornell & Larker (1981): $AVE_{\text{Community's attitudes towards mental health problems}}$ =.682; $AVE_{\text{Family attitudes towards mental health problems}}$=.723; $AVE_{\text{Internal shame}}$=.782; $AVE_{\text{Reflected shame on family}}$=.787; $AVE_{\text{Worries About reflected shame on family1}}$=.771 and $AVE_{\text{Reflected shame on the self}}$=.630. Moderate correlations were found between the six factors in the model (see Table 4).

Table 4

Reliability and validity

Reliability analysis was calculated for each factor in Model 2 in the total sample: Factor 1 "Community's attitudes towards mental health problems" α =.925 ; Factor 2 "Family attitudes towards mental health problems", α = .909; Factor 3"Internal shame", α = .922 ; Factor 4"Reflected shame on family", α = .859; Factor 5 "Worries about reflected shame on family", α = .838; and Factor 6"Reflected Shame on the self", α = .902. All values are either good or very good indicators of the measure's reliability.

Convergent and divergent validity

Pearson correlation coefficients were calculated between the factors of ATMHP and the OAS. All correlations were weak and positive, but statistically significant, except for factor 4 "Reflected Shame on family" (see Table 5).

Table 5

Differences between people with mental illness and general population

The scores obtained in the ATMHP by participants from the general population (n=228) and people living with psychiatric problems (n=118) were compared. Independent sample t-test presented statistically significant differences in factor 4 "Reflected shame on family" and factor 6 "Reflected shame on the self", in which participants from the general population scored higher than the participants with psychiatric problems (See Table 6).

Table 6

Discussion

After a thorough process of translation and adaptation of the ATMHP to Portuguese, the scale was administered to a sample including participants without a history of psychiatric problems and participants living with mental illness for the validation studies. Analysis of the characteristics of these two subgroups showed that people living with mental illness presented lower education and socioeconomic status, a phenomena often mentioned in the literature (Leff & Warner, 2008) as resulting from the limitations and difficulties that psychiatric problems often pose to progressing in school, getting or maintaining a job or having good employment conditions and, consequently, achieving higher socioeconomic status.

The CFA did not fully confirm the initial factor structure proposed by the authors of the scale (Gilbert, et al., 2007), in which some fit indices suggested a poorer fit of the model. This result raises the hypothesis of the model being sensitive to contextual, social or cultural variables, considering that the original version of the scale was initially tested in Asian youths (Gilbert, et al., 2007). The Asian culture is distinct from the culture from the population in this study, and according to Mesquita (2001), in more collective cultures such as the Asian cultures there is a heightened concern about the impact of individual's behavior on others than in more individualistic cultures, such as in western societies. In addition, several studies showed cultural differences in attitudes towards mental health problems (e.g.: Gilbert, et al. 2004; Angermeyer & Dietrich, 2006). Thus, it is relevant to explore the measure's sensitivity and model to different cultural backgrounds, assessing the need to adjust the scale prior to applying it to populations from different cultural backgrounds.

Taking into account the data analysis, current literature in the field of mental illness stigma and items' content, an alternative model was created to better adjust the proposed latent structure of the ATMHP. This new model comprised two separate dimensions comprising individual's

perceptions about attitudes towards mental health problems: from their communities and from their family. This alternative was tested based on studies that point out to the existence of different attitudes attributed to the family and from the community (Ghai, et al., 2013, Gilbert, et al., 2007) which, according to Ghai et al. (2013), individuals feel more empathy and concern from their family members, and more indifference from unknown members of their community. Therefore, and similar to results obtained in other studies (Ghai, et al., 2013 and Gilbert, et al., 2007), individuals presented higher scores (more negative attitudes) in factor 1 (regarding their community) than in factor 2 (regarding their family members). In this alternative model, "Reflected shame 1" dimension was divided into two factors, one referring to reflected shame and another concerning worries about reflected shame, in order to make a more detailed analysis of the different components of reflected shame. This alternative model presented a good adjustment according to several fit indices and very good internal consistency, indicating a good validity and reliability of the ATMHP.

The correlations between the ATMHP and the OAS indicate convergent and divergent validity of the scale. It is noteworthy that the reflected shame is the only divergent dimension, suggesting the pertinence of future studies aimed at better understanding reflected shame.

The differences in scores from participants with and without psychiatric problems was also explored. Results suggest that participants do not differ in their scores for the different dimensions assessed in the ATMHP. The only exceptions are both reflected shame factors, where people with psychiatric problems presented lower scores than healthy individuals. It is possible that the subgroup of people with mental illness have fewer concerns about how one's family would be seen if one had a mental health problem and being stigmatized for having a relative with mental illness, due to their own experience with this issue (Corrigan, et. al, 2001; Dessoki & Hifnaw, 2009) or for having developed effective coping strategies to avoid stigma (Whitly & Campbell, 2014).

Overall, the results showed that the Portuguese version of the ATMHP has a slightly different latent structure than what was originally proposed by the authors, but it is important to highlight that the study was carried out in a population from a different cultural background. The ATMHP presented good psychometric properties and is a useful tool to be used both with healthy individuals, or individuals suffering from psychiatric problems. This may prove to be a useful tool for empirical research in several fields of expertise (e.g. Community psychology, transcultural psychiatry, nursing). Moreover, the validation of an instrument of this kind for people suffering from psychiatric problems adds value and allows further studies on the perceptions of people who may directly experience negative attitudes of others (Moses, 2014). This scale may also prove useful to explore how attitudes towards mental health problems are perceived by individuals with different diagnosis of mental illnesses, as suggested by Moses (2014); Angermeyer and Dietrich (2006). This is particularly relevant in intervention, when determining strategies that can aid the development of effective approaches to minimizing the expression and the negative impact of stigma associated with mental illness. The availability of this tool in Portuguese should facilitate the dissemination in several communities across the globe and cross-cultural comparisons of attitudes toward mental health problems worldwide.

This study presents some limitations that should be addressed in future studies. It was not possible to analyze the temporal stability of the scale, as recommended in studies of this nature. In addition, it should be reminded that social desirability is always a factor that can influence the results of studies focusing on delicate subjects such as stigma and negative attitudes towards the mentally ill. Future studies should focus on more specific segments of the population, such as relatives of people with psychiatric disorders or a more representative number of people with psychiatric problems ranging from mild to more severe forms of psychopathology, in order to address any subtle differences in perceptions of stigma and attitudes that may exist.

Finally, it is important to point out that aspects relating to stigma and negative attitudes towards mental health problems should be studied further, as stigma and attitudes towards mental illness is constantly changing, and can have a great impact and severe consequences to people with mental illness and their communities, and that knowledge about this phenomena is key in defining effective prevention and intervention strategies.

Conclusion

The attitudes towards psychiatric problems, when negative, may cause great suffering to people living with mental illness and their families. In the current study, the ATMHP was translated and validated to the Portuguese population. The CFA confirmed a modified model of the theoretically proposal by the original authors. However, this model was pertinent and presented a better fit to data, bringing some useful refinement to the original model, and that may be more adjusted to the cultural characteristics of the sample in this study. Further analysis showed that the ATMHP presented good psychometric properties. This measure is a useful tool to research focusing on issues related to attitudes towards mental illness at several levels. In addition, it is an adequate measure to study these constructs in different populations, whether with or without psychiatric problems, and the availability of these kind of measure in Portuguese constitutes an advantage, as it allows a great dissemination of this tool among millions of native-speakers, and its use in different regions and populations to assess different aspects of shame and attitudes towards mental illness across the globe.

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