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Validazione e proprietà psicometriche della versione italiana della Fear of Guilt Scale

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Abstract

Several studies and clinical observations have proven the central role of the fear of guilt in the genesis and maintenance of Obsessive-Compulsive Disorder. To date, questionnaires are available in Italian that measure one's propensity to experience guilt and sensitivity towards this emotion, understood as a tendency to negatively judge this experience and its effects, but not the fear of guilt and the commitment to prevent or neutralise this experience. The purpose of this study is to validate the Italian version of the Fear of Guilt Scale (FOGS), a tool that would facilitate a more comprehensive understanding of the weight of this specific factor in the obsessive symptomatology. To this end, the FOGS was administered to two non-clinical samples (Study 1) and to a clinical population diagnosed with either Obsessive-Compulsive Disorder, Major Depressive Disorder or Anxiety Disorder (Study2). Study 1 confirmed the original two-factors structure (Punishment and Harm Prevention), and showed adequate internal consistency, convergent and divergent validity of the Italian version of the FOGS. Study 2 revealed that the Italian version of the FOGS was able to discriminate between patients with Obsessive-Compulsive Disorder and the other clinical control groups, and in predicting the severity of obsessive symptoms. Clinical and research implications are also discussed.

Keywords: Obsessive-Compulsive Disorder; Guilt; Fear of Guilt; sensitivity of guilt; FOGS.

Riassunto

Numerosi studi e osservazioni cliniche hanno dimostrato il ruolo centrale del timore di colpa nella genesi e nel mantenimento del disturbo ossessivo-compulsivo. Ad oggi, in lingua italiana sono disponibili questionari che misurano la propensione a sperimentare il senso di colpa e la sensibilità individuale verso questa emozione, ma nessuno strumento per valutare il timore di colpa e l'impegno a prevenire o neutralizzare questa esperienza. Lo scopo dello studio è di validare la versione italiana della Fear of Guilt Scale (FOGS), uno strumento che aiuterebbe a discriminare il peso di questo specifico fattore nella sintomatologia ossessiva. A tal fine, la FOGS è stata somministrata a due campioni non clinici (Studio 1) e a una popolazione clinica composta da un sottogruppo con diagnosi di Disturbo ossessivo-compulsivo, uno con diagnosi di Disturbo depressivo maggiore e un altro con diagnosi di Disturbo d'ansia (Studio2). Lo Studio 1 ha confermato la struttura originaria a due fattori (Punizione e Prevenzione del Danno) e ha mostrato un'adeguata coerenza interna, validità convergente e divergente della versione italiana della FOGS. Lo studio 2 ha rivelato che la FOGS è in grado di discriminare i pazienti con disturbo ossessivo-compulsivo dagli altri gruppi di controllo clinico e di prevedere la gravità dei sintomi ossessivi. Si discutono le implicazioni cliniche e di ricerca di questi risultati.

Parole chiave: disturbo ossessivo-compulsivo; senso di colpa; timore di colpa; sensibilità alla colpa; FOGS.

Introduction

Many experimental and correlational studies and clinical observations demonstrate the central role of guilt in the genesis and maintenance of Obsessive-Compulsive Disorder (OCD; see Shapiro & Stewart's review, 2011; Salkovskis, 1985; Rachman, 93, 2002, 2006; Mancini & Gangemi, 2017). Taken together, this evidence supports a much more long-lasting intuition; in 1660, Taylor, an English bishop, highlighted the exaggerated scrupulousness and attitude towards moral concerns characterizing people suffering from OCD. When Freud (1909) described the clinical case of "The Rat Man", he stressed the role of guilt in the obsessive symptomatology. Along the same vein, several studies have revealed that the experimental reduction of responsibility decreased the urgency to compel rituals in OCD patients, decreasing symptom severity. For instance, Lopatka and Rachman (1995) and Shafran (1997) identified that worrying about a potential threat reduced drastically when someone else (i.e., the experimenter) took over the responsibility of the damage, albeit only in OCD patients. These data confirm that obsessive patients are more worried about being responsible for potential damage than about negative consequences for themselves. In a more recent study, Arntz, Voncken and Goosen (2007) observed that augmented responsibility increased the frequency of checking in obsessive patients, compared to healthy and anxious controls, in non-symptomatic domains. On the other hand, inducing responsibility about the outcome of a task and about any potential mistakes enhanced obsessivelike behaviours, such as intrusive thoughts (Niler & Beck, 1989), feelings of uncertainty, checking and washing rituals, and anxiety (D'Olimpio & Mancini, 2014) in healthy subjects. Combined, these data suggest that obsessive activities aim to prevent and neutralize the possibility of feeling guilty, and thus morally despised. This possibility is perceived to be catastrophic in obsessive patients, being significantly more negative to them compared to patients with other diagnoses, as they could be despised if they made mistakes or caused damage (Enholt, Salkovskis, & Rimes, 1999). In other words, compulsive activity protects the patient from the feelings of guilt involved in obsessive thoughts, preventing such emotions from occurring, or reducing or neutralizing it, once it has arisen (Mancini, 2016).

The Fear of Guilt Scale (FOGS; Chiang, Purdon & Radomsky, 2016) has recently been developed and validated. This measure assesses the intensity of the fear of guilt through two separated factors: the drive to punish oneself for feelings of guilt and the belief that guilt indicates one's actual self is bad and flawed (Punishment factor), and the drive to proactively prevent harm or other causes of guilt (Harm Prevention factor). The FOGS seems to be of particular interest in measuring a core ingredient of OCD, facilitating a more comprehensive understanding of the obsessive mind and fostering the development of more efficacious treatment interventions.

To date, few Italian tools assess guilt, although measures of guilt propensity exist. Among this, the Guilt Inventory (Kugler & Jones, 1992) is widely used in both research and clinical settings. Recently, a scale has been created, the Guilt Sensitivity Scale (Perdighe et al., 2015), which measures guilt

sensitivity, the tendency to negatively evaluate the experiencing of guilt and its effects. On the other hand, there are no tools to measure the fear of guilt and the resulting commitment to preventing, limiting or neutralizing this experience.

The present paper originates from the need to have an Italian instrument that allows researchers to assess a central construct in obsessive activity: the fear of guilt. Such an instrument would allow us to better investigate the weight that this construct occupies in the origin and maintenance of the obsessive symptomatology. The aims of the present study, therefore, were: to validate the Italian version of the FOGS; to test its psychometric properties; to verify whether the fear of guilt is associated to severity of the obsessive symptomatology more than other constructs, such as the propensity and sensitivity to guilt.

Study 1

The first study aimed to investigate the factorial structure of the Italian version of the FOGS and its convergent and divergent validity. We collected data from two independent samples composed of Italian community participants who voluntarily took part in the study by answering a structured questionnaire.

To test the goodness-of-fit of the original two-factors (i.e., Punishment and Harm Prevention) structure of Chiang and colleagues (2016), we performed a *Multigroup-CFA*, using the maximum likelihood method (Satorra & Saris, 1985) with robust estimators. Thus, we examined a CFA model separately on each sample, obtaining baseline models on which to examine any differences between the groups. After ascertaining the model's goodness-of-fit in each group, this was simultaneously estimated in the two samples by mean of a *Multigroup* analysis. This allowed us to gauge *configural*, *metric* and *scalar* invariance of the proposed model.

The model fit was assessed following the indications provided by Hu and Bentler (1999) about the *Chi square* statistic (χ^2), Root Mean Square Error of Approximation (RMSEA) and the related 90% confidence interval, Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and Standardised Root Mean Square Residual (SRMR). The invariance assumptions were tested by examining the differences in the χ^2 (Satorra & Bentler, 2001) and CFI between the nested models (Cheung & Rensvold, 2002).

Moreover, to reduce the number of observed variables and avoid non-convergence problems, we aggregated the items into six indicators (i.e., parcel items). The dimensions of Harm Prevention and Punishment were thus defined by three indicators each, which resulted from the random aggregation of 7 and 10 items respectively. The use of items parcelling is quite common in the literature (e.g., Little, Cunningham, Shahar, & Widaman, 2002; Nasser & Takahashi, 2003), especially in testing the invariance of an instrument (e.g. Schmit & Ryan, 1993; van de Vijver & Harsveld, 1994). The analyses were conducted using *lavaan* (Rosseel, 2012), an *R* package for Structural Equation Modelling, by mean of the *RStudio* graphical interface (2015).

Finally, in order to test the convergent and divergent validity, we computed correlations between the Italian version of the FOGS, Beck Depression Inventory-II (Beck, Steer,

& Brown, 1996), Anxiety Sensitivity Index-3 (Taylor et al., 2007), Guilt Inventory (Jones, Schratter, & Kugler, 2000), and Guilt Sensitivity Scale (Perdighe et al., 2015).

Method

Translation of the FOGS into Italian

Translation of the FOGS into Italian was carried out following established cross-cultural translation procedures (Núñez, Martín-Albo, & Navarro, 2005). Firstly, the scale was translated from English into Italian according to the parallel backtranslation procedure (Brislin, 1986), in which two bilingual persons independently translate the scale from its original language to the language under study. Secondly, a committee made up of the individuals who participated in the translation process assessed the new scale obtained. They prepared the scale format and the instructions identically to the original version. Thirdly, another bilingual individual, who is unfamiliar with the original scale but well-versed in the psychological lexicon, retranslated this version back to the original language. Finally, the new English version obtained was sent to the original authors in order to verify the degree of concordance between the original scale and the translation. Original and Italian versions of the FOGS are presented in the Appendix.

Participants

The first community sample (Sample A) was composed of 324 individuals (204 females, Mage=36.59, SD age = 12.53), distributed across the country (north = 11.7%; centre = 43.8%; south = 41%). Regarding job position, 10.5% declared to be students, 45.4% to be engaged in a full-time work, while 15.1% in a part-time work. The remaining participants stated they were unemployed, retired or a homemaker. For education, 56.5% were graduates, 23% had a high school diploma and 4% a lower level qualification.

The second community sample (Sample B) consisted of 216 Italian participants (129 women) with a mean age equal to 33.90 (SD = 10.93). Within this sample, 16.2% came from northern Italy, 27.2% from the centre and 50.9 from the south. In terms of education, 61.1% had a degree, 17.1% a high school diploma, 10% a post-graduate qualification, and 3.8% had a lower secondary school diploma. Moreover, 42.1% were full-time worker, 19.4% part-time worker, 13.4% were students, while the remaining percentage was distributed across the unemployed, retired and homemaker options.

Participants were recruited in several public contexts and were asked to provide informed consent after receiving a description of the research purposes.

Measures

Fear of Guilt Scale (FOGS; Chiang et al., 2016) is a 17-item scale designed to determine the extent to which respondents fear the guilty feeling and behave in ways to minimize, prevent,

or atone for guilt (Chiang, et al., 2016). FOG Sconsists of two factors: Punishment, the drive to punish oneself for feelings of guilt; Harm Prevention, the drive to proactively prevent guilt.

Anxiety Sensitivity Index-3 (ASI-3; Taylor et al., 2007) is an 18-item version, rated on a 5-point Likert scale that measures beliefs about the feared consequences of symptoms associated with anxious arousal. The reliability of the ASI-3 was satisfactory across the samples examined (M = 1.29, SD = .66, $\alpha = .94$; M = 1.61, SD = .43, $\alpha = .85$; M = 1.11, SD = .70, $\alpha = .90$; respectively for the first and second community samples and for the clinical sample).

Beck Depression Inventory-II. The 21-item of the Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown, 1996) measures the psychological and physical symptoms of depression in adults. Scores range from 0 to 3. The measure showed good reliability across the samples(M = 1.08, SD = .61, $\alpha = .95$; M = 1.43, SD = .42, $\alpha = .89$; M = .75, SD = .57, $\alpha = .93$; respectively for the first and second community samples and for the clinical sample).

The *Guilt Inventory* (GI; Jones et al. 2000) is a self-report scale asking participants to rate their agreement to 45-item on a 5-point Likert scale. It was designed to assess the following domains: state-guilt, trait-guilt, moral standards. The GI had a good reliability(M = 2.97, SD = .33, $\alpha = .80$;M = 2.95, SD = .51, $\alpha = .87$; M = 3.23, SD = .47, $\alpha = .88$; respectively for the first and second community samples and for the clinical sample).

The Guilt Sensitivity Scale (GSS; Perdighe et al., 2015). This scale evaluates subjective sensitivity to guilt feelings by investigating: the tendency to avoid this feeling, its influence on the patient's life, and his capacity to tolerate it. The scale consists of 9 items, presented on a 7-point Likert scale(M = 3.73, SD = .85, $\alpha = .62$; M = 3.71, SD = .83, $\alpha = .61$; M = 3.94, SD = 1.14, $\alpha = .70$; respectively for the first and second community samples and for the non-clinical sample).

The Padua Inventory-Revised (PI-R; van Oppen, Hoekstra, & Emmelkamp, 1995) is a 41-item revised version of the 60-item self-report measure developed to assess severity of obsessive-compulsive symptoms (Sanavio, 1988). All items are rated on a 5-point Likert scale (M = .83, SD = .58, α = .94; for the clinical sample, study 2).

Results

Confirmatory Factor Analysis

First, we tested the original two factors and 17-item model described in the study of Chiang and colleagues (2016). The analysis revealed an optimal model fit of this factorial structure in both the non-clinical samples. In the first community sample (N = 324), in addition to a non-significant *Chi square* ($\chi^2 = 7.493$; df = 8; p < .48), we found both the incremental fit indices to be higher than the acceptability threshold of .90 (TLI = .997; CFI = .999). Regarding the absolute fit indices, the analyses showed a value of .017 for the SRMR and .023 for the RMSEA with a 90% confidence interval ranging from .000 to .072. These findings suggested that the fit of the model to data was satisfactory. We gathered further evidence of the

optimal goodness-of-fit of the 17-item and two factors model even for the second community sample (N = 216). We again found a non-significant *Chi square* test (χ^2 = 6.744; df = 8; p<.56), TLI and CFI equal to 1.002 and 1.000, respectively, an SRMR of .018, and an RMSEA equal to .001 (90% CI = .000, .076). Therefore, the original 17-item version of the FOGS (Chiang et al., 2016) showed to excellently adhere to data from both samples of non-clinical participants (see Table 1).

Tab. 1. Goodness-of-fit indicators for the two-factor and 17-item model across the non-clinical samples

| Models | χ^2 | df | TLI | CFI | SRMR | RMSEA |
|-----------------------|----------|----|-------|-------|------|---------------------------------|
| Sample A (N = 324) | 7.493 | 8 | 0.997 | 0.999 | .017 | .023 (.000, 072) |
| Sample B (N = 216) | 6.744 | 8 | 1.002 | 1.000 | .018 | .072) .001 (.000, 076) |

We deepened our analysis by simultaneously estimating the proposed model in the two samples in order to test the *configural invariance* of the FOGS. Even in this case, the goodness-of-fit indicators showed an optimal fit of the proposed theoretical model to the empirical data. The *Chi square* statistic was not-significant ($\chi^2 = 14.288$; df = 16; p < .57) and both the incremental indices were satisfactory (TLI = .999; CFI = 1.000). The SRMR was .015 and the RMSEA .013 (90%CI = .000, .059). Moreover, as shown in Figure 1, the factor loadings of the parcel items were all high and significant; in their standardised version, they varied from .68 to .86 in the first community sample and from .70 to .86 in the second one. The original two-factors and 17-item solution proposed by Chiang and colleagues (2016) seemed therefore generalizable to both the Italian samples examined.

In order to ascertain the *metric invariance* of the scale, we tested a nested model by constraining the factor loadings of the parcel items to be equal across the two samples. Since equality

constraint did not produce a significant increase in the *Chi* square of the model ($\Delta \chi^2[4] = .398; p = .98$), as well as a variation of the CFI, the hypothesis of *metric invariance* could be considered verified.

Similar results were obtained when we added equality constraints for the intercepts and means of the observed variables. As can be seen in Table 2, the goodness-of-fit indicators showed that the theoretical model was able to adequately replicate the observed data, allowing us to attest the *scalar invariance* of the FOGS across the investigated samples.

Internal consistency

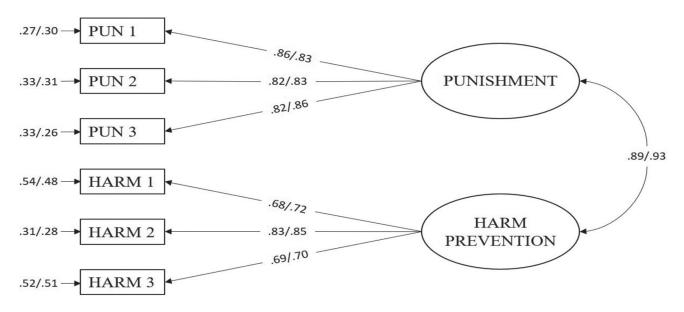
In order to assess the internal consistency of the proposed scale, we tested its reliability in the two samples. We also checked for the reliability of the two dimensions of Punishment and Harm Prevention. In support of the robustness of our new measure, we achieved satisfactory results in both samples considered. In the first community sample (N = 324) the *Cronbach's alpha* was .89 for the entire scale, .83 for the Punishment and .78 for the Harm Prevention factors. In the second community sample (N = 216), the coefficient was equal to .90 for the scale, .84 for the Punishment dimension and .81 for the Harm Prevention dimension.

Convergent and divergent validity

To test the convergent and divergent validity of the Italian version of the FOGS we computed the correlations between it and other theoretically convergent and divergent measures.

We expected that the Italian version of the FOGS was strongly correlated with the GI and the GSS, showing a convergence with these measures. In contrast, we expected it to be correlated to a significantly lesser extent with the BDI-II and the ASI-3, showing divergence with these measures compared to the previous ones. We performed these analyses

 $\mbox{{\bf Fig.}}$ 1. CFA model of the Italian version of the Fear of Guilt Scale



Note. Values reported first refer to participants of the Sample A (N = 324), values reported second refer to participants of the Sample B (N = 216).

Tab. 2. Goodness-of-fit indicators of the Multigroup-CFA nested models

| | χ^2 | df | TLI | CFI | SRMR | RMSEA | Model comparison | $\Delta\chi^2$ | Δdf | p |
|----------------------------|----------|----|-------|--------|------|----------------------|---------------------|----------------|-------------|-----|
| Model 1 Configural Inv. | 14.288 | 16 | .999 | 1.000 | .015 | .013 (.000, .059) | - | - | - | - |
| Model 2 Metric Inv. | 15.332 | 20 | 1.002 | 1.000 | 0.17 | .000 (000, .044) | 2 vs. 1 | .398 | 4 | .98 |
| Model 3 Scalar Inv. | 16.175 | 26 | 1.005 | 1.000. | .018 | .000 (.000, .023) | 3 vs. 2 | .509 | 6 | .99 |

Note. Sample A (N = 324); Sample B (N = 216)

in the first sample (N = 324) and, as shown in Table 3, our expectations received initial empirical support.

In order to draw more accurate conclusions, we tested whether the FOGS's correlation with BDI and ASI were significantly lower than its correlation with the GI and GSS. Following Eid, Gollwitzer, and Schmitt (2011), we compared correlations from dependent samples. FOGS was correlated with GI (r=.45; p<.01) and BDI (r=.21; p<.01), and the difference between these correlations was statistically significant (Z=3.89; p<.001). The correlation between FOGS and ASI was .35 (p<.01) and it was significantly lower than that between FOGS and GI (Z=1.70; p<.05). Regarding the correlation between FOGS and GSS (r=.58; p<.01), this was significantly higher than the correlation of the FOGS with BDI (Z=6.15; p<.001) and ASI (Z=4.22; p<.001). These results highlighted the convergent and divergent validity of the Italian version of the FOGS.

Tab. 3. Correlations between BDI-II, ASI-3, GI, GSS and FOGS Italian version. The table reports mean, standard deviation and Pearson correlations for the non-clinical sample of 324 participants

| Variables | Mean | SD | 1 | 2 | 3 | 4 |
|-----------|------|------|-------|-------|-------|-------|
| BDI-II | 1.08 | .61 | | | | |
| ASI-3 | 1.29 | .66 | .73** | | | |
| GI | 2.96 | .35 | .27** | .28** | | |
| GSS | 3.63 | .96 | .22** | .31** | .51** | |
| FOGS | 3.35 | 1.04 | .21** | .35** | .45** | .58** |

Note. ** *p*< .01 (2-tailed)

Study 2

The second study aimed to investigate concurrent validity of the Italian version of the FOGS and confirm its factorial structure on a sample of clinical patients. Participants were recruited from different clinical practices in Italy and were asked to provide informed consent after receiving a description of the research purposes. They completed the same questionnaire of the previous study (for a detailed description, see the measures section in Study 1), while also providing additional information about diagnosis and treatment.

As in Study 1, we performed a *Multigroup-CFA* to investigate the goodness-of-fit of the FOGS's factorial structure. In this case, we tested the model simultaneously for men and women,

obtaining an estimate of *configural*, *metric* and *scalar* invariance of the measure in respect to participants' gender.

Concurrent validity was tested by means of two distinct regression analysis models. The first model involved a logistic regression analysis, which considered the FOGS as predictor of participants' belongingness to the group of obsessive-compulsive patients (vs. depressed and anxious). The second model pertained a hierarchical linear regression analysis. It was aimed to investigate whether the FOGS significantly predicted the severity of OCD symptoms, detected through the PI-R (van Oppen et al., 1995). The analyses were performed by means of SPSS version 24.

Method

Participants

The clinical sample consisted of 156 individuals (84 females, Mage= 37.37, SDage = 11.86) with different occupations (19.2% students, 50% full-time employee, 3,8% part-time employee, 5.8% homemaker, 2% unemployed, 2.6% pensioner) and different educational qualifications (10.9% middle school diploma, 36.5%, high school diploma, 14.1% university degree, 5% higher level title). Most participants in this sample came from central Italy (78.2%), while 1,3% from the north and 7.7% from the south. Important for analysis purposes, 42% of participants declared to use psychotropic drugs and 72.4% were treated with psychotherapy. Participants were included in the research if their diagnosis, made by expert psychiatrists or psychotherapists, fell into one of these three categories: 1) obsessive-compulsive disorder, 2) major depressive disorder, 3) anxiety disorders. Exclusion criteria included any overlap between two or more diagnoses including psychosis, mania, substance abuse, and mental insufficiency. The presence of any personality disorder or dysfunctional trait, and undergoing pharmacological or psychotherapeutic treatment, did not represent an exclusion criterion to participate to the study. Thus, 33.3% of the sample was diagnosed with obsessive-compulsive disorder, 44.9% with major depressive disorder and 21.8% with anxiety disorders.

Results

Confirmatory Factor Analysis

Analysis revealed that the proposed factorial model fitted to the data from the clinical sample. We found a satisfactory

goodness-of-fit for both groups of women($\chi^2[8] = 9.424$; p =.31; TLI = .992; CFI = .996; SRMR = .022; RMSEA = .046; 95%CI = .000, .141) and men clinical patients ($\chi^2[8] = 7.970$; p = .44; TLI = .991; CFI = .995; SRMR = .027; RMSEA = .049; 95% CI = .000, .152). These results were confirmed when we tested the model simultaneously among the two groups, following the same procedure used in Study 1.As can be seen in Table 4, the comparison between the nested models emerged from the Multigroup-CFA denoted the configural, metric and scalar invariance of the Italian version of the FOGS. All the three models showed excellent incremental and absolute fit indices, as well as a non-significant Chi square. In the first CFA Model, used to assess the configural invariance, the factor loadings of the parcel items were .71, .86, .78 and .75, .83, .82, respectively for women and men, on the Harm Prevention dimension, whereas .79, .88, .87 and .88, .89, .85 on the Punishment dimension. Moreover, adding equality constraints to the loadings (i.e., Model 2; metric invariance), intercepts and means (i.e., Model 3; scalar invariance) of the observed variables, remarkable differences between the fit indices considered were not observed across the nested models.

Internal consistency

As in study 1, we tested both the overall reliability of the scale and the reliability of the two dimensions of Punishment and Harm Prevention. The overall measure showed a *Cronbach's Alpha* of .92, while it was equal to .87 and .82 for Punishment and Harm Prevention, respectively.

Concurrent validity

Concurrent validity was tested by means of two distinct regression analysis models. Since guilt represents a key sentiment in the characterization of the obsessive-compulsive disorder (Salkovskis et al., 2000, Foa et al., 2001, Foa et al., 2002; D'Olimpio et al., 2013), the first model involved a logistic regression analysis in which we considered the Fear of Guilt as a predictor of the OCD diagnosis (vs. major depressive disorder and anxiety disorder). In light of this, we created a dummy variable in which the value 1 corresponded to the obsessive-compulsive group while the other two groups (i.e., major depressive disorder and anxiety disorder) were categorized into the 0 value. We expected a positive relation between the predictor and dependent variable. We included also psychotherapeutic treatment and use of psychotropic drugs as control variables. In order to test the predictive power

of the Italian version of the FOGS, we entered the GI and the GSS scores in the analysis, expecting a significant effect of the FOGS when these two variables were controlled for.

The overall logistic regression model was significant (NagelkerkeR2 = .21; p < .05) and, more importantly, the Fear of Guilt significantly predicted the belongingness to the obsessive-compulsive group (B = .77; SE = .34; Z = 5.52; p < .05; Exp(B) = 2.15; 95% CI = 1.11, 4.16). This result confirmed our expectations, indicating that a higher FOGS score characterized especially individuals affected by OCD rather than other psychopathologies (see Table 5).

The second model envisaged a hierarchical linear regression analysis in which the dependent variable was represented by PI-R. We were interested in determining whether the FOGS would significantly predict the severity of OCD symptoms after controlling for the GI and GSS. At the first stage of the analysis we entered the GI, followed by the GSS at the second stage and by the FOGS at the third and last stage. The overall hierarchical regression model was significant and explained a large amount of variance (R2 = .41; F(3,152) = 35.19; p <.001), with an increased R2 due to the FOGS being equal to 12%. As can be seen in Table 6, at stage 1 of the analysis, the GI significantly predicted the score on the PI-R (B = 1.4; SE = .23; t = 5.88; p < .001; 95%CI = .909, 1.829). At the second stage, the GSS also significantly predicted the PI-R score (B = .50; SE = .10; t = 4.86; p < .001; 95%CI = .298, .706) and the GI effect remained significant (B = .74; SE = .25; t = 2.90; p < .01; 95%CI = .236, 1.236). Consistently with the analysis purpose, when the FOGS was entered into the model, both GI (B = .38; SE = .24; t = 1.59; p = .11; 95%CI = -.092, .895) and GSS (B =.16; SE = .11; t = 1.46; p = .14; 95%CI = -.058, .388) lost their predictive power and the FOGS (B = .57; SE = .10; t = 5.49; p < .001; 95%CI = .369, .784) remained the unique significant predictor of the OCD symptoms severity.

General discussion

Previous literature (e.g., Mancini, 2016; Shapiro & Stewart, 2011) suggested that fear of guilt plays a pivotal role in the genesis and maintenance of the OCD. Therefore, a measure assessing this construct could be particularly important for clinical and research purposes. However, the FOGS has not yet been validated in the Italian context. Because the international version of the FOGS (Chiang et al., 2016) turned out to be a valid and reliable measure of the fear of guilt construct, we focused our effort on the attempt of validating its Italian version.

Tab. 4. Goodness-of-fit indicators of the Multigroup-CFA nested models for the clinical sample

| | χ^2 | df | TLI | CFI | SRMR | RMSEA | Model comparison | $\Delta\chi^2$ | Δdf | р |
|----------------------------|----------|----|------|------|-------|----------------------|---------------------|----------------|-----|-----|
| Model 1 Configural Inv. | 16.644 | 16 | .998 | .999 | .021 | .023 (.000, .106) | - | - | - | - |
| Model 2 Metric Inv. | 21.170 | 20 | .997 | .998 | 0.041 | .027 (000, .102) | 2 vs. 1 | 4.640 | 4 | .33 |
| Model 3 Scalar Inv. | 27.648 | 26 | .997 | .998 | .049 | .025 (.000, .094) | 3 vs. 2 | 6.061 | 6 | .41 |

Note. Women (n = 84); Men (n = 72)

| Tab. 5. Logistic regression model for predicting diagnosis disorder (Obsessive-compulsive vs. Anxiety and Depressive) on the basis of FOGS, GI, GS | S, |
|---|----|
| Psychotropics drugs and Psychotherapy represent the covariates included in the model. | |

| | | | | | | | Exp(B) 95% C | I |
|---------------|------|-----|-----|----|-------|--------|--------------|-------|
| Predictors | В | SE | Z | df | p | Exp(B) | Lower | Upper |
| FOGS | .77 | .34 | 5.2 | 1 | < .05 | 2.15 | 1.11 | 4.16 |
| GI | 24 | .81 | .09 | 1 | > .05 | .786 | .161 | 3.83 |
| GSS | 16 | .33 | .24 | 1 | > .05 | .851 | .444 | 1.63 |
| Psychotropics | 47 | .62 | .58 | 1 | > .05 | .624 | .186 | 2.09 |
| Psychotherapy | -1.9 | .78 | 6.2 | 1 | < .05 | .143 | .031 | .658 |
| Intercept | .51 | 2.6 | .04 | 1 | > .05 | 1.66 | | |

Tab. 6. Hierarchical linear regression model for predicting self-reported OCD symptoms (PI-R) on the basis of FOGS. GI and GSS represent the covariates included in the model.

| Predictors | | Model 1 | | | Model 2 | | | Model 3 | | | | |
|------------|--------|---------|--------|--------|---------|--------|--------|---------|--------|--|--|--|
| | В | SE | β | В | SE | β | В | SE | В | | | |
| GI | 1.4 | .23 | .43*** | .73 | .25 | .23** | .38 | .24 | .12 | | | |
| GSS | | | | .50 | .10 | .39*** | .16 | .24 | .13 | | | |
| FOGS | | | | | | | .58 | .10 | .48*** | | | |
| | | | | | | | | | | | | |
| R2 | .18*** | | | .29*** | | | .41*** | | | | | |
| ΔR2 | .18*** | | | .11*** | | | .12*** | | | | | |

Note. *p< .05; ** p< .01; *** p < .001

Specifically, our studies aimed to confirm the core dimensions of the fear of guilt scale and to test its validity and reliability for empirical and clinical use within the Italian context. We also aimed to investigate whether an increased fear of guilt was prominent for OCD symptoms in respect to other measures related to guilt (i.e., GI and GSS), as well as in respect to other psychological disorders such as depression and anxiety.

To those ends, we performed a Multigroup-CFA on two distinct non-clinical samples (Study 1) and a clinical sample (Study 2). Factorial analyses confirmed the presence of two latent factors, labeled Punishment and Harm Prevention, which together captured the key features of the fear of guilt. Furthermore, multigroup analyses showed that this result was consistent among the different groups of participants examined. In particular, analyses revealed the configural, metric and scalar invariance of the Italian version of the FOGS between the two non-clinical sample (Study 1) and across patients' gender (Study 2). Further empirical support for the robustness and consistency of the Italian version of the FOGS was provided by the reliability analyses. Indeed, the overall measure (i.e., considering the 17 items together), as well as the Punishment and Harm Prevention factors, showed an excellent internal consistency across the two studies. Both CFAs and reliability analyses provided empirical evidence about the goodness of the measure structure and its suitability to represent and seize the two key dimensions of the fear of guilt construct proposed by Chiang and colleagues (2016).

As test of convergent and divergent validity, we computed correlations between the Italian version of the FOGS and BDI-II, ASI-3, GI and GSS. In line with findings of Doron et al. (2007, 2008), we found that FOGS showed high correlations with other OCD-related measures investigating guilt. Moreover, we found that these associations were significantly stronger in respect to the associations between FOGS and depression or anxiety measures. Consistently with results of Chiang and colleagues (2016), these findings indicated that the Italian version of the FOGS was able to discriminate the fear of guilt from other clinically distinct constructs such as depression and anxiety, and that, as expected, it converged with other guilt-related measures relevant for the OCD.

In addition to convergence with measures investigating guilt, correlation analysis also suggested that FOGS was able to seize something distinct from guilt propensity and guilt sensitivity. Fear of guilt could be expected to play a different role, compared to GI and GSS, in the diagnosis of the OCD and assessment of the related symptoms severity.

Results consistent with this expectation emerged from both regression analysis models conducted on the clinical sample of Study 2. Specifically, the first model revealed that FOGS was able to discriminate the patients' belongingness to the OCD group, rather than to those of anxiety or depressive disorders. This finding supported the hypothesis that the fear of guilt particularly characterized patients with obsessive symptoms compared to patients with diagnosed anxious or depressive symptoms. Coherently, the second model showed that the FOGS was the unique significant predictor associated to OCD symptoms severity, overcoming the predictive power of the GI and GSS. This finding suggested that fear of feeling guilty played a key role in OCD, compared to guilt propensity and sensitivity, and that a higher intensity of such feeling represented a precise indication of the presence of accentuated OC symptoms. Overall, results from both regression analyses indicated the FOGS as a reliable measure for detecting OC symptoms and their severity, confirming the central role of the fear of guilt in the Obsessive-Compulsive Disorder in respect to other psychopathological conditions.

The fear of guilt construct, as measured by means of the FOGS, may contribute to improve our understanding of the OCD. In addition to what might be explained by guilt propensity or guilt sensitivity, the FOGS is able to grasp a specific concern that is preponderant in obsessive-compulsive patients. As suggested by Mancini and Gangemi (2004), the central worry in obsessive compulsive disorder is not about the harm or the responsibility related to it. Rather, it refers to the quality of one's own conduct. The feeling of guilt arises from the meaning attributed to a conduct that is perceived as poor, unjust, immoral. Individuals with obsessive compulsive disorder may be worried about behaving consistently with the moral concerns that are perceived as universal moral obligations. Consistently with this conceptualization, the FOGS is capable of circumscribing such preoccupations, and of precisely measuring it through the dimensions of Punishment and Harm Prevention.

Caveats and conclusions

Our findings show that the Italian version of the FOGS is an suitableand reliable measure to assess fear of guilt. Moreover, the FOGS discriminated between two different dimensions, namely the drive to punish oneself for feelings of guilt and the belief that guilt indicates one's actual self is bad and flawed (Punishment factor), and the drive to proactively prevent harm or other causes of guilt (Harm Prevention factor). The fear of guilt as assessed by the FOGS seems to specifically characterise patients with OCD compared to other disorders, such as anxiety and depression, significantly predicting obsessive symptomatology.

A caveat of our study includes the small sample size of the clinical samples. Particularly, the sample of patients diagnosed with anxiety disorder was small. Future studies should deepen the predictive validity of the FOGS by including more patients with different psychopathological conditions. Additionally, they should address the specific subtype of OCD

as this would be important in evaluating whether the fear of guilt, as assessed with the FOGS and its two dimensions, differs across the various symptoms.

To conclude, the Italian version of the 17-item FOGS, and its two dimensions, seems to have good psychometric properties. Having an Italian tool to assess the fear of guilt, distinguishing between the propensity to prevent this emotion and the tendency towards punishment, provides the opportunity for interesting scenarios in both research and clinical fields. Future studies could use this scale to better understand the obsessive psychopathology, for instance investigating how the fear of guilt affects decision-making (Gangemi & Mancini, 2007) and how it might contribute to selectively drive intentional processes within the moral domain (Cosentino et al., 2017). Within the clinical field, the FOGS could be used to evaluate the efficacy of specific interventions focused on the acceptance of guilty feelings, and in reducing guilt sensitivity characterising patients suffering from OCD (Cosentino et al., 2012).

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no competing interests.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Each participant dealt with the process of informed consent.

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Appendix

Original Versions of the FOGS

| FOGS | | | | | | | | | | | | |
|------|--|-------------------------|----------------------------|------------------------------|------------------------------|----|------|--------|-----|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | | | 7 | 7 | |
| | Strongly disagree | | | | | Sı | rong | ly agı | ree | | | |
| 1 | When I have done | something for which l | I feel guilty, I feel very | angry at myself for not ha | ving known better | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | It is not right to rela | ax and/or enjoy mysel | f if I have not complet | ely atoned for something f | for which I feel guilty | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3 | When my actions o had actually caused | | re (but didn't) harm or | offend a living creature, I | feel just as guilty as if I | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | When I have done s | something for which l | I feel guilty it means I | have not been true to the p | person I would most like | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5 | Even the thought of | f feeling guilty in the | future is enough to cha | ange my actions so that I d | lo my best to prevent it | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | When I have done s | | I feel guilty I will right | fully be viewed as a callou | s, selfish, careless, and/or | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7 | If I think someone | is upset with me, I car | nnot rest until I have a | ppeased her/him | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | I should have no ne | gative impact whatso | ever on the lives of any | living creature | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9 | When I feel guilty, | I find it hard to focus | on anything else | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10 | I do not have the ri | ght to relax or enjoy n | myself if I have done so | omething for which I feel g | uilty | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11 | Guilt is one of the r | most important emoti | ions you can feel | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12 | I do not stop atonir | ng for something I hav | ve done until I no long | ger feel guilty | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13 | If I cause even the s | lightest harm or offen | nce to any living creatu | re, I cannot forgive myself | , even if others can | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14 | If I don't please "the | e powers that be", it m | neans I am bad | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15 | If I feel guilty, I mu | st keep what I did a so | ecret so that others dor | n't find out what a horrible | person I am | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16 | If I have done some | ething for which I feel | guilty, I worry that the | ose I cherish will be punisl | ned | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17 | I was raised to belie | ve that guilt has value | e and/or meaning | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Italian Versions of the FOGS

| | FOGS | | | | | | | |
|----|---|---|---|---|-----|--------|------|-------------|
| | 1 2 3 4 5 | 6 | | | | | 7 | |
| | Completamente Neutro | | | | Com | pletar | nent | e d'accordo |
| 1 | Quando faccio qualcosa per cui mi sento in colpa, mi arrabbio molto con me stesso per non aver agito meglio | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | Non trovo giusto rilassarmi e/o divertirmi se non ho completamente risolto ciò per cui mi sento in colpa | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3 | Quando le mie azioni o mancate azioni <i>avrebbero</i> potuto far del male o offendere qualcuno, pur non essendo accaduto, mi sento in colpa come se fosse realmente successo | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | Quando ho fatto qualcosa per cui mi sento in colpa vuol dire che non sono stato fedele alla persona che vorrei tanto essere | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5 | Il solo pensiero che in futuro potrei sentirmi in colpa è sufficiente a farmi modificare le mie azioni, impegnandomi a fare il possibile per evitarlo | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | Quando ho fatto qualcosa per cui mi sento in colpa è giusto che io venga giudicato insensibile, egoista, menefreghista e/o disonesto | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7 | Se penso che qualcuno ce l'abbia con me, non mi do pace fino a quando non ci siamo riappacificati | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | Non devo arrecare nessun danno a nessun essere vivente | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9 | Quando mi sento in colpa trovo difficile concentrarmi su altro | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10 | Non ho il diritto di rilassarmi o di divertirmi se ho fatto qualcosa per cui mi sento in colpa | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11 | La colpa è una delle emozioni più importanti che si possono provare | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12 | Non smetto di scusarmi per qualcosa che ho fatto fino a quando non mi sento più in colpa | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13 | Non riesco a perdonarmi se provoco anche il minimo danno o offesa a qualcuno, anche se gli altri mi perdonano | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14 | Se non compiaccio "l'autorità " significa che sono una cattiva persona | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15 | Se mi sento in colpa, devo tenere nascosto ciò che ho fatto in modo che gli altri non scoprano che sono una persona orribile | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16 | Se ho fatto qualcosa per cui mi sento in colpa, mi preoccupo che non vengano punite le persone a cui tengo | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17 | Sono cresciuto con l'idea che la colpa ha un valore e/o un significato | 1 | 2 | 3 | 4 | 5 | 6 | 7 |