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INDIVIDUAL DIFFERENCES IN GUILT SENSITIVITY: THE GUILT SENSITIVITY SCALE (GSS)

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Individual differences can be observed in the propensity to experience certain emotions; for some emotions, most notably anxiety and disgust, the notion of sensitivity was also explored, namely one's tendency to evaluate negatively a given emotion and its effects. Based on observations made in the clinical practice, the authors suggest that this distinction may be usefully applied also to guilt, creating a specific instrument to measure guilt sensitivity. In the wake of such considerations, the authors developed the Guilt Sensivity Scale, a 10-item scale. It evaluates subjective sensitivity to guilt feelings by investigating: the tendency to avoid this feeling, its influence on the patient's life, and his/her ability to tolerate it. The major goal of this study is testing the psychometric properties of this scale. To this end, the scale was administered to a sample of 916 participants. In terms of psychometric properties, the instrument seems to be characterized by a significant, promising reliability and validity.

Key words: Guilt; Sensitivity; Individual differences; Guilt scale; Obsessive-compulsive disorder.

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The term sensitivity refers to the individual's negative evaluation of his/her emotional state. An emotion, other than being experienced as a response to an evaluation, may be judged as well. Since their early years of life, human beings have been forming their opinions or theories about the causes, somatic, cognitive, and psychological signs which characterize an emotion and its consequences. Therefore, an emotion can be judged as threatening, both because of a subjective experience and its inner and interpersonal consequences.

Such evaluation entails obvious effects on how an emotion is managed. In the event an emotion is perceived as threatening, for instance, quite predictably the subject will try to avoid or contain that emotion. Anxiety is a good case in point: a person with a high level of *anxiety sensitivity* perceives the various expressions of anxiety (such as tachycardia, dizziness, lump in throat) as dangerous (for example: "If I suffer from tachycardia for a long time, I will have a heart attack"; "Mental confusion shows I am going crazy"); hence, he or she anticipates anxiety, thus triggering an anxiety self-feeding vicious loop, since the evaluation of anxious symptoms activates reactions that either worsen or maintain anxiety rather than reduce it (Taylor, 1995).

Anxiety sensitivity (AS), a construct introduced by Reiss and McNally (1985), has been extensively studied in the clinical practice both among adults and among children (Taylor & Taylor, 1999). It has to do with the belief that "feelings related to anxiety, such as tachycardia, dizziness, tremor, short breath, may have catastrophic consequences in terms of loss of control, maddening, fainting, infarction, or cause a negative judgment on the part of those who see an anxiety episode as it occurs" (Mancini & Capo, 2004, p. 664). This is one of the best studied cognitive characteristics of panic and is associated to an increased risk of developing a number of anxiety disorders (Olatunji & Sawchuk, 2005), especially panic attacks.

Recent evidence suggests the existence of a construct similar to AS also for disgust (de Jong, van Overveld, & Peters, 2011; Olatunji et al., 2007; van Overveld, de Jong, & Peters, 2011). In other words, it is possible to distinguish between individual propensity to disgust, namely the tendency to experience disgust more frequently and strongly, and disgust sensitivity, that is, the tendency to overestimate the negative consequences of disgust manifestations (van Overveld, de Jong, Peters, Cavanagh, & Davey, 2006). These two aspects of disgust seem to contribute to the development of different types of psychopathology. The propensity to disgust (how easily an individual feels disgust) seems to correlate more with phobias, such as the fear of spiders, whereas disgust sensitivity (how negatively an individual evaluates the experience of disgust) correlates with obsessive-compulsive and eating disorders (Mancini, Gangemi, Perdighe, & Marini, 2008; van Overveld, 2008).

The present research stems from clinical observations, suggesting a distinction between sensitivity and propensity to guilt. It is necessary to discriminate between the propensity to experience such emotion (state guilt and trait guilt) and guilt sensitivity, that is, the tendency to negatively evaluate its effects. In other words, guilt propensity concerns how readily people respond with a feeling of guilt, and guilt sensitivity concerns how unpleasant people consider experiencing guilt to be. In particular, this distinction seems to be quite evident in individuals with an obsessive-compulsive disorder who, apart from feeling guilty more strongly and more often than the general population and other clinical groups, perceive this emotion in a more threatening manner (see the review by Shapiro & Stewart, 2011). Research suggests that the obsessive activity is aimed at preventing, reducing, or neutralizing the possibility of being guilty. Guilt feelings seem to play a role in generating and maintaining checking symptoms as well as washing, order and symmetry symptoms. In fact, general psychology research has demonstrated that guilt feelings make nonclinical samples more sensitive to contamination (Zhong & Lilijenquist, 2006) and *not just right experience* (Mancini et al., 2008), which are both assumed to be at the base of washing (Rachman, 2004), order and symmetry symptoms (Coles, Frost, Heimberg, & Rhéaume, 2003; Coles, Heimberg, Frost, & Steketee, 2005). Other studies suggest that obsessive-compulsive patients are more sensitive to feelings of guilt and responsibility than other people, regardless of the situational context (Shapiro & Stewart, 2011).

To measure disgust sensitivity and anxiety sensitivity, specific instruments were developed: the Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1987) and the Disgust Propensity and Sensitivity Scale-Revised (DPSS-R; van Overveld, de Jong, Peters, Cavanagh, et al., 2006). On the other hand, we have a limited knowledge of guilt sensitivity instruments. Several measures of guilt propensity exist (for a review, see Tilghman-Osborne, Cole, & Felton, 2010) or scales that measure individual differences in terms of frequency and intensity of feeling guilty. Among the latter, the Guilt Inventory (Kugler & Jones, 1992) is widely used in both research and clinical settings. To our knowledge, there are no instruments measuring *guilt sensitivity,* namely instruments testing how negatively an individual evaluates the consequences of the guilt experience.

In the light of these considerations, we have developed a scale to measure guilt sensitivity. It evaluates subjective sensitivity to guilt feelings by investigating: the tendency to avoid these feelings, its influence on the patient's life, and his/her ability to tolerate it. The purpose of the present study is, thus, the construction of a questionnaire aimed at assessing feelings of guilt sensitivity: the Guilt Sensitivity Scale (GSS). In particular, the reported research aims to gather some empirical evidences concerning the psychometric properties (i.e., factor structure, reliability, validity) of the GSS.

METHODS

Construction of the Scale

We defined guilt sensitivity as the tendency to overestimate the negative consequences of experiencing guilt, both in terms of intolerability and the catastrophic meaning attached to such an emotional experience, as well as the consequences on one's own life at a social and interpersonal level (for instance, stigmatization). This definition served as a starting point for item generation. Four cognitive-behavioral therapists with extensive experience were asked to create sentences describing the experience of guilt sensitivity defined in this way. The result was 46 items. Then, based on two experts' judgment (two of the researchers), they eliminated similar items as well as those which seemed to assess propensity (e.g., "I often regret or feel guilty for what I do"; "In my regular daily activities, I happen to feel guilty more often than other people"), rather than sensitivity (e.g., "I do not care about being guilty or deserving to be scolded"). Special attention was paid to distinguishing our items from the Guilt Inventory's items (e.g., "I never felt too much remorse or guilt"). After this selection, 10 items were retained; the response to each item was measured on a 7-point scale ranging from 1 (*never true*) to 7 (*always true*). Examples of items include "I am not worried about being guilty or deserving admonition," "It is painful to deserve being judged guilty by someone else." The wording of items refers both to "being guilty" and "being judged guilty."

Participants and Procedure

Participants were 916 (60.7% women) with a mean age of 34.02 years (*SD* = 12.12, range = 15-75), in northern Italy (11.9%), central Italy (72.5%), and southern Italy (15.6%). Participants were students (27.6%), full-time employees (42.4%), part-time employees (9.2%), house-

wives (3.1%), unemployed (5.2%), retired people (4%), disabled (.4%), other (8.1%). The most frequent marital status was single (60.7%), followed by married (32.2%), separated (6%), and widow/widower (1.1%). Their educational level ranged from compulsory school (15.5%) to university degree (38.9%), with 45.6% of respondents having a high school degree.

The sample included a clinical group (n = 273), and a nonclinical group (n = 643). The first group included 273 patients (69.1% women), with a mean age of 37.65 years (SD = 12.29, range = 17-75); patients suffered from anxiety, mood and personality disorders (DSM IV-TR; APA, 2004). Patients were being treated by a number of psychology services across the country; exclusion criteria were a diagnosis of bipolar disorder, substance abuse, pervasive developmental disorders, mental retardation, and current or past central nervous system diseases. They were students (16.7%), full-time employees (40.7%), part-time employees (12.6%), housewives (6.3%), unemployed (11.5%), retired people (5.9%), disabled (1.5%), other (4.8%). The most frequent marital status was single (57.5%), followed by married (31.3%), separated (9%), and widow/widower (2.2%). Their educational level ranged from compulsory school (14.8%) to university degree (32.8%), with 52.4% of respondents having a high school degree.

The nonclinical group consisted of 643 participants (57.2% women), with a mean age of 32.49 years (SD = 11.72, range = 15-67). They were students (32.3%), full-time employees (43.1%), part-time employees (7.7%), housewives (1.8%), unemployed (2.5%), retired people (3.2%), other (9.4%). The most frequent marital status was single (62.1%), followed by married (32.6%), separated (4.7%), and widow/widower (.6%). Their educational level ranged from compulsory school (11%) to university degree (61.2%), with 27.8% of respondents having a high school degree.

The clinical and nonclinical groups differed significantly from each other with respect to age (t = 5.00, df = 911, p < .001), gender (χ^2 = 11.288, p < .001), educational level (U^1 = 62159, p < .001), occupation (χ^2 = 82.060, p < .001), and marital status (χ^2 = 10.922, p < .05).

In order to confirm the factor structure of the scale, a random subsample (n = 459; 70.4% women; mean age = 33.32 years, SD = 12.33, range = 15-67) was chosen using approximately half of the participants, including both patients and people from the general population in the same proportion as the entire group: clinical group (n = 137; 71.5% women; mean age = 36.77 years, SD = 11.86, range = 17-60), nonclinical group (n = 322; 69.9% women; mean age = 31.85 years, SD = 12.25, range = 15-67). Data were collected in both public and private clinical centres. Participants were informed about the aim of the study and a strong emphasis was put on data confidentiality.

Data Analyses

A preliminary inspection of the item distribution was conducted to assess the extent to which GSS items could be factor analyzed using normal-theory estimation procedures. The normality of data was checked through Kolmogorov-Smirnov (Kolmogorov, 1933; Smirnov, 1939) and Shapiro and Wilk (1965) tests. Prior to applying exploratory factor analysis, data were inspected to ensure items were significantly correlated, using Bartlett's (1950) Test of Sphericity, and that they shared sufficient variance to justify factor extraction, using Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Kaiser, 1970). Sampling adequacy values that are less than .50 are considered unacceptable, values that are between .50 and .60 are considered margin-

ally acceptable, and values greater than .80 and .90 are considered excellent (Hair, Anderson, Tatham, & Black, 1995).

In order to investigate the underlying dimensional structure of the scale, exploratory principal axis factor analyses with promax rotation were performed on the whole sample. Kaiser's (1960) criterion, the scree test (Cattell, 1966), and random parallel analysis (Horn, 1965) were used to set the number of factors to be extracted. The following three item retention criteria were applied to the pattern matrix: (a) a factor loading of at least .30 on the primary factor, ensuring a certain degree of association between the item and the factor; (b) a difference of .30 between the loading on the primary factor and the loading on other factors, when an item was loaded simultaneously on two factors; and (c) a minimum of three items for each factor, ensuring meaningful interpretation of stable factors (Tabachnick & Fidell, 1996).

The internal consistency of the subscales was calculated by using Cronbach's alpha. Corrected item-scale correlations were examined for each of the subscales, ensuring that adjusted item-total correlations for each item exceeded .30. The correlation between the scale dimensions was computed using Pearson correlation coefficient.

A confirmatory factor analysis, using maximum likelihood robust estimation procedures, was performed using the EQS Structural Equation Program Version 6.1 (Bentler, 2006). To evaluate the closeness of the hypothetical model to the empirical data, multiple goodness-of-fit indexes were used, including the ratio of the chi-square to degrees of freedom (χ^2/df), the non-normed fit index (NNFI), the comparative fit index (CFI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Traditionally, NNFI and CFI values of .90 or greater are interpreted as evidence of models that fit well (Bentler & Bonett, 1980). However, the more recent literature suggests that better fitting models produce values greater than .95 (Hu & Bentler, 1999). By contrast, smaller SRMR and RMSEA values support better fitting models, with values of .05 or less indicating good fit (Browne & Cudeck, 1993). The Satorra-Bentler chi-square (S-B χ^2) was not used as an evaluation of absolute fit because of its sensitivity to sample size.

A *t*-test for independent samples was applied to test whether mean scores for the clinical and nonclinical group were significantly different. As a measure of effect size, Cohen's (1988) *d* coefficients were reported. For the purpose of interpretation, according to Cohen's conventional criteria, $d = .20$ is considered to be a small effect, $d = .50$ is considered to be a medium effect, and $d = .80$ is considered to be a large effect.

RESULTS

Item Distribution

Psychometric evaluation of the GSS was initiated with examination of the distributional properties and response frequencies. Table 1 presents the item analysis for the GSS items. The distributional properties of each item were examined by inspecting the skewness and kurtosis and the pattern of response frequency. The statistical significance of both Kolmogorov-Smirnov and Shapiro-Wilk tests of normality revealed that each item had a distribution that was significantly different from normal and, as a result, suggested that estimation procedures that assume a normal

distribution may not be appropriate for examining the underlying factor structure of the GSS (Bollen, 1989; Nunnally & Bernstein, 1994). Based on these findings, principal axis factoring method was chosen for exploratory factor analyses, and maximum likelihood robust estimation procedure was applied for confirmatory factor analyses.

TABLE 1
Item analysis and response frequency

Item Whole sample (N = 916)	*M*	*DS*	S	K	K-S	S-W	%NT	%ANT	%UNT	%OcT	%OfT	%AAT	%AT
Item 1	4.02	1.54	–.04	–.11	.22***	.92***	8.5	7.4	11.9	42.8	13.1	8.1	8.2
Item 2	4.77	1.74	–.47	–.69	.17***	.92***	5.0	7.5	10.2	19.5	17.2	21.3	19.2
Item 3	3.44	1.79	.32	–.88	.16***	.93***	16.8	19.9	15.8	18.2	15.6	7.0	6.7
Item 4	4.79	1.87	–.55	–.81	.18***	.90***	7.0	8.6	9.8	13.1	17.9	21.4	22.2
Item 5	3.76	2.08	1.22	–1.29	.15***	.90***	20.9	14.2	10.8	16.0	12.7	11.6	13.9
Item 6	4.56	2.02	–.35	–1.17	.16***	.90***	9.9	12.6	9.1	13.1	15.7	17.2	22.4
Item 7	4.88	1.68	–.59	–.32	.16***	.92***	5.0	6.2	7.1	18.2	24.7	18.7	20.0
Item 8	3.86	2.02	.14	–1.19	.14***	.91***	15.7	16.0	12.7	17.7	13.3	8.8	15.7
Item 9	4.30	1.87	–.14	–1.08	.12***	.93***	8.3	12.3	14.6	17.1	16.7	15.0	15.9
Item 10	3.70	1.85	.10	–1.06	.14***	.93***	15.8	15.8	13.0	20.1	16.0	11.1	8.1
Item Clinical group (n = 273)	*M*	*DS*	S	K	K-S	S-W	%NT	%ANT	%UNT	%OcT	%OfT	%AAT	%AT
Item 1	3.97	1.59	.07	–.19	.22***	.92***	9.2	8.1	13.2	42.5	10.3	7.3	9.5
Item 2	5.00	1.87	–.64	–.70	.21***	.88***	6.2	6.6	9.2	16.1	11.4	22.0	28.6
Item 3	4.29	1.88	–.26	–.92	.15***	.92***	11.4	9.9	9.9	18.7	23.4	11.4	15.4
Item 4	4.90	1.97	–.65	–.77	.18***	.87***	8.8	8.4	6.2	12.5	17.2	17.9	28.9
Item 5	4.60	2.13	–.51	–1.09	.17***	.87***	15.8	7.0	5.5	12.8	16.5	16.8	25.6
Item 6	4.85	2.02	–.56	–.96	.17***	.87***	8.8	9.9	6.2	14.3	15.0	14.7	31.1
Item 7	5.27	1.63	–.86	.18	.16***	.87***	4.4	2.2	7.3	13.2	24.2	18.3	30.4
Item 8	4.64	2.04	–.44	–1.01	.14***	.89***	11.7	8.4	6.2	17.6	16.5	12.8	26.7
Item 9	4.86	1.93	–.49	–1.01	.19***	.89***	6.2	8.8	12.1	13.6	12.5	18.3	28.6
Item 10	4.62	1.86	–.53	–.71	.16***	.91***	9.9	7.0	7.7	17.6	20.1	20.1	17.6
Item Nonclinical group (n = 643)	*M*	*DS*	S	K	K-S	S-W	%NT	%ANT	%UNT	%OcT	%OfT	%AAT	%AT
Item 1	4.04	1.52	–.08	–.05	.22***	.92***	8.2	7.2	11.4	42.9	14.3	8.4	7.6
Item 2	4.67	1.67	–.41	–.64	.15***	.93***	4.5	7.9	10.6	21.0	19.8	21.0	15.2
Item 3	3.07	1.62	.50	–.57	.18***	.92***	19.1	24.1	18.4	18.0	12.3	5.1	3.0
Item 4	4.74	1.82	–.51	–.81	.18***	.91***	6.2	8.7	11.4	13.4	18.2	22.9	19.3
Item 5	3.40	1.95	.36	–1.05	.17***	.91***	23.0	17.3	13.1	17.4	11.0	9.3	8.9
Item 6	4.40	2.00	–.27	–1.22	.16***	.91***	10.4	13.7	10.3	12.6	16.0	18.4	18.7
Item 7	4.71	1.67	–.50	–.40	.16***	.93***	5.3	7.9	7.0	20.4	24.9	18.8	15.6
Item 8	3.53	1.92	.36	–.97	.16***	.92***	17.4	19.3	15.4	17.7	12.0	7.2	11.0
Item 9	4.06	1.79	–.04	–.99	.13***	.94***	9.2	13.8	15.7	18.7	18.5	13.5	10.6
Item 10	3.32	1.71	.29	–.85	.16***	.93***	18.4	19.6	15.2	21.2	14.3	7.3	4.0

(table 1 continues)

Table 1 (continued)

Item Random subsample (n = 459)	*M*	*DS*	S	K	K-S	S-W	%NT	%ANT	%UNT	%OcT	%OfT	%AAT	%AT
Item 2	4.83	1.73	–.48	–.66	.16***	.92***	4.6	7.0	10.2	18.7	19.0	19.2	21.4
Item 3	3.57	1.82	.24	–.96	.16***	.93***	15.0	19.8	13.9	18.5	17.2	7.6	7.8
Item 4	4.84	1.88	–.62	–.71	.18***	.89***	7.8	7.4	9.2	12.2	18.3	21.8	23.3
Item 5	3.79	2.09	.11	–1.30	.15***	.90***	20.3	14.2	10.7	16.6	12.2	11.8	14.4
Item 6	4.46	2.07	–.31	–1.27	.16***	.89***	11.1	14.4	8.5	10.7	16.3	16.6	22.4
Item 7	4.90	1.67	–.58	–.37	.16***	.91***	4.4	6.5	7.6	17.6	24.6	18.5	20.7
Item 8	3.85	2.03	.13	–1.21	.15***	.91***	16.3	16.3	11.8	17.4	13.5	9.4	15.3
Item 9	4.38	1.83	–.14	–1.04	.13***	.93***	6.8	11.5	15.5	17.6	17.2	14.4	17.0
Item 10	3.82	1.83	.02	–1.03	.13***	.94***	13.9	14.2	14.8	18.7	18.1	12.2	8.1

Note. S = Skewness; K = Kurtosis; K-S = Kolmogorov-Smirnov test of normality; S-W = Shapiro-Wilk test of normality; NT = Never True; ANT = Almost Never True; UNT = Usually Not True; OcT = Occasionally True; OfT = Often True; AAT = Almost Always True; AT = Always True. Items are reported in Table 2 (for the Italian version see the Appendix).
*** $p < .001$.

Exploratory Factor Analyses

With our 10-item scale we were able to satisfy the minimum 10 participants-per-item ratio, which is usually recommended for factor analysis (Gorsuch, 1983). Bartlett's Test of Sphericity (χ^2 = 2101.838; df = 45) was significant ($p < .001$), and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Kaiser, 1970) was .81, indicating that items were appropriate for a factor analysis.

Both the Kaiser-Guttman's (Kaiser, 1960) criterion and the inspection of the scree plots suggested extracting two factors for the whole sample and for the clinical and nonclinical group. Parallel analysis determined five factors to be extracted for the clinical group and four factors to be extracted for both the whole sample and the nonclinical group. The resulting number of factors is evidently over-defined, with several factors comprised by only one or two indicators, some items with loadings less than .30 on all factors, and a number of items loading simultaneously on two factors without a difference of at least .30 between loading on the primary factor and loading on other factors. Based on the examination of the pattern of loadings and accepting a minimum of three items for each factor, we retained two factors explaining 39.38%, 39.15%, and 36.49% of the variance for the whole sample, the clinical group, and the nonclinical group, respectively. The factor correlation matrix, indicating a prominent intercorrelation among factor scales, supported the use of an oblique rotations procedure (promax criterion). Based on the resultant pattern matrix, Item 1 "Sometimes it is normal being guilty" that failed to load on either two factors was not retained (loadings were –.219 on F1, and .155 on F2, for the whole sample; they were < .10 on both factors, for the clinical group; finally, loadings were –.173 on F1, and .131 on F2, for the nonclinical group). Factor structure stability across the two subsamples was tested performing separate exploratory factor analyses. In both groups, results revealed a structure similar to that underlying the full data set. Factors remained essentially invariant and items loaded in substantially the same way. The differences emerging in the solutions consisted merely of small changes in the relative order of some of the items.

Items and factor loadings of the scale are shown in Table 2. Correlation between scale factors was r = .354 ($p < .01$, two-tailed tests). All subscales' alpha coefficients can be considered acceptable (from alpha = .62 to alpha = .79, with corrected item-total correlations ranging from .372 to .662) (see Table 3).

TABLE 2
Factor loadings of the scale items (pattern matrix); exploratory factor analyses

	Whole sample (N = 916)		Clinical group (n = 273)		Nonclinical group (n = 643)	
Item	F1	F2	F1	F2	F1	F2
5. If I did not worry about being judged guilty, I would live more peacefully	.745		.737		.739	
10. I have the impression that most people tolerate guilt better than me	.743		.724		.702	
3. It seems to me that most people tolerate to be possibly judged guilty more peacefully than me	.677		.663		.593	
7. Deserving to be judged guilty by someone else is painful	.577		.645		.536	
8. If I could magically remove all the experiences where I behaved badly in life, I would live more peacefully	.574		.503		.566	
4. I try to avoid being guilty in every possible way	.426		.427		.433	
2. I do not worry about being guilty or deserving a reprimand		.653		.577		.670
9. I am not afraid of being scolded		.633		.687		.615
6. The fear of being guilty for something bad does not affect the things I do and the way I live my life		.541		.562		.516
1. Sometimes it is normal being guilty	–.219	.155	< .100	< .100	–.173	.131
% explained variance	31.325	8.053	31.601	7.554	27.718	8.765

Note. F1 = negative emotional consequences; F2 = fear of guilt/reprimand.

TABLE 3
Cronbach's alpha and corrected item-total correlations

	Whole sample (N = 916)		Clinical group (n = 273)		Nonclinical group (n = 643)	
Item	F1	F2	F1	F2	F1	F2
Item 5	.560		.606		.470	
Item 10	.373		.408		.372	
Item 3	.662		.633		.632	
Item 7	.532		.564		.495	
Item 8	.517		.423		.505	
Item 4	.626		.604		.579	
Item 2		.458		.442		.456
Item 9		.406		.423		.384
Item 6		.464		.477		.442
Cronbach's alpha	.791	.631	.785	.637	.764	.616

Note. F1 = negative emotional consequences; F2 = fear of guilt/reprimand.

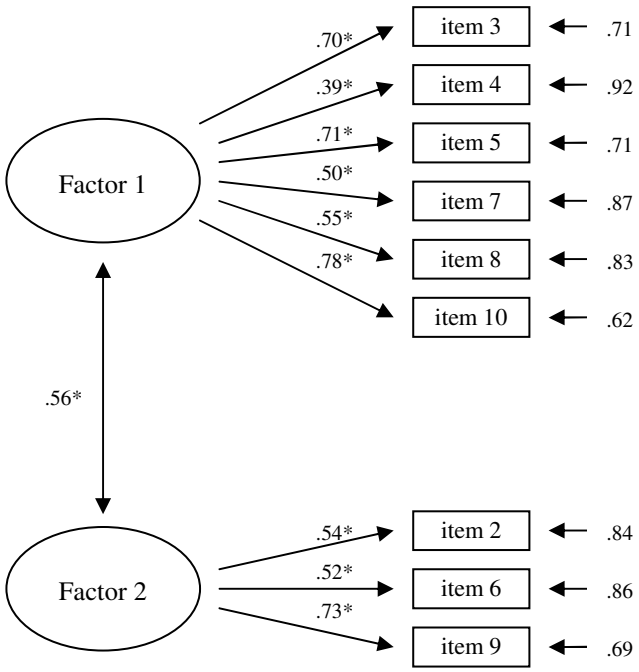
Confirmatory Factor Analyses

The confirmatory factor analysis performed on a random group from the whole sample showed reasonable goodness of fit for a two-factor model. The fit indexes met the criteria for adequacy of fit for the oblique bi-factor model, suggesting that the hypothesized structure was plausible: $\chi^2(15, N = 459) = 22.87$, $p = .087$; $\chi^2/df = 1.52$; NNFI = .98; CFI = .99; SRMR = .04; RMSEA = .03, 90% CI [.000, .060] (Table 4). All manifest variables loaded significantly ($p < .05$) on their hypothesized latent factors. Figure 1 presents the standardized parameter estimates.

TABLE 4
Fit indexes for the oblique bi-factor model for clinical and nonclinical groups; confirmatory factor analyses

	χ^2	*df*	*p*	χ^2/df	NNFI	CFI	SRMR	RMSEA	90% CI
Clinical group	13.43	15	.569	0.90	1	1	.04	.00	.000, .052
Nonclinical group	39.25	15	.000	2.62	.95	.98	.05	.05	.031, .070

Note. NNFI = non-normed fit index; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; CI = confidence interval.



* $p < .05$.

FIGURE 1
GSS empirical model (standardized solution).
Factor 1 = Negative emotional consequences; Factor 2 = Fear of guilt/reprimand.

Factor structure stability across clinical and nonclinical groups was further verified. Metric and scalar invariance was tested by CFA in order to compare mean scores across the two subgroups.

Criterion Validity

As regards criterion validity, the performed analysis shows that the two subsamples differ significantly. A very marked difference between scores from each group can be observed on both scales in the predicted direction. Differences showed a good effect size as well (Cohen's *d* ranged between .4 and .7). Results are reported in Table 5. Items included in Factor 2 were reverse-scored. Composite scores for the two factors were computed by summing the responses of subset of the factored items. The min-max values for each composite score is 6-42 (Factor 1), and 3-21 (Factor 2).

TABLE 5
Mean scores on the questionnaire subscales obtained for both groups of participants

	Clinical group		Nonclinical group			
	M	*SD*	*M*	*SD*	*t* value	Cohen's *d*
F1	28.33	8.02	22.77	7.26	–10.25	0.70
F2	14.72	4.43	13.14	4.12	–5.19	0.40

Note. F1 = Negative emotional consequences; F2 = Fear of guilt/reprimand. All *t* values are significant ($p < .001$), range of F1 scores: 6-42; range of F2 scores: 3-21.

DISCUSSION

The purpose of this study was to operationalize and identify the core features of guilt sensitivity and to develop and assess the validity of a measure of guilt sensitivity, the GSS. Our data suggest that the scale has good psychometric properties.

The factor analysis revealed the presence of two factors in the GSS. When the questionnaire was put together, such factors had not been hypothesized; the analysis of the item content, however, does suggest that Factor 1 (items 3, 4, 5, 7, 8, 10) measures the painful/unacceptable feature of a guilt experience and, at the same time, the difficulty to cope psychologically; on the other hand, Factor 2 (items 2, 6, 9) indicates the guilt anticipatory and the fear of their negative consequences." In other words, the first factor has to do with how the person evaluates the very fact of feeling (being) guilty (an intrinsically unacceptable condition) and to what extent he/she thinks he/she can tolerate and psychologically cope with it; the second factor has to do with the guilt anticipatory fear and its consequences. In this respect, the two factors are not juxtaposed, but indicate two different guilt evaluations at different times; the first one relates to current guilt per se ("being guilty is so ugly and intolerable"), the second one has to do with feared guilt ("I am so afraid of being considered guilty and scolded"). In other words, while Factor 1 measures

the overall evaluation of the guilt experience, Factor 2 measures how much an individual is afraid of it and their worrying.

Factor 1 may be called *negative emotional consequences* (in terms of pain, tolerability, loss of peace) resulting from such concern and from the sense of guilt. Factor 2 may be called *fear of guilt/reprimand*, namely it indicates the extent to which an individual worries about this event (judging it as unacceptable and catastrophic). As expected, the test can distinguish between clinical and nonclinical groups; the clinical group obtained a higher score, both with regard to the total test and to the two subscales.

This scale was created with the ultimate goal of obtaining an instrument to evaluate whether some groups of patients, besides feeling guilty more often and intensely, perceive guilt in a more threatening and dramatic manner than other patients.

Anxiety research has revealed that anxiety sensitivity interacts with anxiety expectancies in predicting fear behavior (Reiss, 1991; Taylor, 1995). In a similar vein, guilt propensity and guilt sensitivity may interact and predict the development of psychopathology. The available tools measure people's predisposition to experience guilt, not their tendency to judge this emotion negatively. Thus, they measure propensity, but not sensitivity. Emotion sensitivity and propensity appears to be involved in psychopathology. Our study provides support for the possibility of measuring as the feeling of guilt is uncomfortable for an individual and in particular for specific groups of patients.

Guilt feelings seem, indeed, to play a role in generating and maintaining psychopathological symptoms (Shapiro & Stewart, 2011); in our opinion, a tool that measures guilt sensitivity directly (as opposed to propensity) can be quite helpful to exactly understand the role of guilt in a number of psychopathological disorders. More specifically, in the wake of several previous papers (Cosentino et al., 2012; Mancini et al., 2008; Mancini, Gangemi, Perdighe, & Serrani, 2009), it could help test the hypothesis that in OCD patients, their sensitivity to the guilt experience plays a crucial role in how such a disorder unfolds. High guilt sensitivity may drive obsessions and compulsions in individuals with OCD, as they aim to avoid, prevent, or neutralize the feared feeling of guilt. Specifically, guilt sensitivity may cause individuals to be vigilant for and sensitive to ways in which actions or inactions could potentially cause harm. In this respect, if the good psychometric properties of GSS are confirmed by future studies, this tool may help improve our understanding of OCD.

Clinically speaking, a tool to assess how unpleasant people consider their guilt experience to be, as opposed to the frequency and intensity of guilt, could help design more targeted treatments; for example, if you know that a given patient has a high sensitivity level, any intervention will aim at making such an experience less unpleasant, increasing the perceived ability and commitment required to face the guilt experience and acceptance of feeling/being guilty.

We also believe, even if the scale does not allow to distinguish patient groups with a different diagnosis (as a matter of fact, guilt sensitivity is likely to affect various types of patients), that measuring a higher or lower guilt sensitivity can indicate a specific therapeutic target by diagnosis. If this is the case, one could explore the possibility of identifying and acting upon a specific psychopathological dimension, regardless of the diagnosis.

A number of issues remain unclear and shall be explored in the future. First of all, the divergent validity should be examined to determine whether GSS differs from measures regarding the propensity to experience guilt (e.g., the Guilt Inventory) and any related indices, like the ASI.

Secondly, in order to endorse the significant distinction between sensitivity and propensity to guilt, it would be important to explore the differential predictive validity of these two components by comparing clinical groups which are assumed to have a different role, such as patients affected by obsessive-compulsive disorders and depressed patients (Faraci & Tirrito, 2013). Lastly, a limitation of the present study is the small number of experts used for item generation, because this might have affected the opportunity to capture different facets of the guilt sensitivity construct. In the future, more research should be done along these lines.

NOTE

1. Mann-Whitney U test.

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APPENDIX
The Guilt Sensitivity Scale (GSS) (Italian items)

Instructions:
Below you can find a list of sentences that describe how people feel about themselves. Please, read each sentence carefully and decide whether it describes how you feel or act. Please, rate how true each statement is for you by circling a number from 1 (*never true*) to 7 (*always true*). Use the scale below to make your choice. Remember that there are no wrong or right answers. You choose the answer that best describes how you feel.

1	2	3	4	5	6	7
never true	*almost never true*	*usually not true*	*occasionally true*	*often true*	*almost always true*	*always true*

1.	Ogni tanto è normale essere colpevole [Sometimes it is normal being guilty]	1	2	3	4	5	6	7
2.	Non mi preoccupo di essere colpevole o di poter meritare un rimprovero [I do not worry about being guilty or deserving a reprimand]	1	2	3	4	5	6	7
3.	Mi sembra che la maggior parte delle persone sopporti più serenamente di me la possibilità di essere giudicato colpevole [It seems to me that most people tolerate to be possibly judged guilty more peacefully than me]	1	2	3	4	5	6	7
4.	Cerco in tutti i modi di evitare di essere colpevole [I try to avoid being guilty in every possible way]	1	2	3	4	5	6	7
5.	Se non mi preoccupassi di poter essere giudicato colpevole, vivrei più serenamente [If I did not worry about being judged guilty, I would live more peacefully]	1	2	3	4	5	6	7
6.	Il timore di essere colpevole di qualcosa di brutto, non influisce sulle cose che faccio e sul modo in cui vivo la mia vita [The fear of being guilty for something bad does not affect the things I do and the way I live my life]	1	2	3	4	5	6	7
7.	È doloroso meritare di essere giudicati colpevoli da qualcun altro [Deserving to be judged guilty by someone else is painful]	1	2	3	4	5	6	7
8.	Se potessi magicamente eliminare tutte le esperienze in cui mi sono comportato male nella vita, vivrei più serenamente [If I could magically remove all the experiences where I behaved badly in life, I would live more peacefully]	1	2	3	4	5	6	7
9.	Non ho paura di essere rimproverato [I am not afraid of being scolded]	1	2	3	4	5	6	7
10.	Mi sembra che la maggior parte delle persone tolleri il senso di colpa meglio di me [I have the impression that most people tolerate guilt better than me]	1	2	3	4	5	6	7