Questionnaire of Cognitive Schema Activation in Sexual Context: A Measure to Assess Cognitive Schemas Activated in Unsuccessful Sexual Situations

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The aim of this study was to assess the reliability and validity of the Questionnaire of Cognitive Schema Activation in Sexual Context (QCSASC; Nobre & Pinto-Gouveia, 2000b). A total of 319 individuals (96 with sexual dysfunctions and 223 without sexual dysfunctions) participated in the study. The QCSASC assesses 28 self-schemas proposed by J. S. Beck (1995), usually associated with psychological problems. The measure assesses the activation of these self-schemas following the presentation of 4 negative sexual events associated with the most common sexual dysfunctions in men and women. The QCSASC demonstrated internal consistency (Cronbach's α = .94), test–retest reliability (r[34] = .66), convergent validity (high correlations with other measures of general schemas), and incremental validity. Discriminant analysis differentiated between clinical (sexual dysfunction) and non-clinical groups, giving credit to the hypothesis that the activation of negative schemas may be involved in sexual dysfunctional processes. Findings also suggest the relevance of assessing cognitive schemas in clinical settings.

Recently, some authors have emphasized the importance of cognitive-affective factors in human sexual response (Andersen, Cyranowski, & Espindle, 1999; Baker, 1993; Barlow, 1986; Carey, Wincze, & Meisler, 1993; Hawton, 1985, 1989; McCarthy, 1989, 1992; Nobre & Pinto-Gouveia, 2000a, 2006a, 2006b; Rosen, Leiblum, & Spector, 1994; Sbrocco & Barlow, 1996;

Zilbergeld, 1992, 1999), and have developed new conceptual models and therapeutic techniques based on this perspective. Most empirical studies in this field have been focused on specific cognitive constructs such as cognitive distraction (Beck, Barlow, Sakheim, & Abrahamson, 1987; Dove & Wiederman, 2000; Elliot & O'Donohue, 1997; Farkas, Sine, & Evans, 1979; Geer & Fuhr, 1976; Przybyla & Byrne, 1984), efficacy expectancies (Bach, Brown, & Barlow, 1999; Creti & Libman, 1989; Palace, 1995), causal attributions (Fichten, Spector, & Libman, 1988; Weisberg, Brown, Wincze, & Barlow, 2001), or perfectionism (DiBartolo & Barlow, 1996).

However, despite the results supporting the importance of these cognitive variables on sexual response, there is a lack of integrated work about the role of core cognitive structures. Specifically, the role of cognitive schemas in the onset and maintenance of sexual dysfunction has received little attention by the scientific community. One exception is the research conducted by Anderson and colleagues (Andersen & Cyranowski, 1994; Andersen et al., 1999), who developed an instrument to assess sexual self-schemas. However, the concept studied by Andersen and colleagues (Andersen & Cyranowski, 1994; Andersen et al., 1999) is specifically related to a particular aspect of self-schema (one's self-view regarding sexuality) and does not cover more general beliefs about one's self (self-schemas) usually

conceptualized as playing a major role in the development of psychopathological states.

Another exception is the work by Gagnon and Simon (1973), who developed the concept of sexual script. The authors defined sexual script as a cognitive framework responsible for planning, coordinating, and expressing social conduct (including sexual behavior). The script construct is similar to the cognitive schema used in clinical psychology. Both designate internal structures developed through learning processes and socialization, serving adaptive endings through the facilitation of meaning assignment processes and behavioral guidance.

Gagnon, Rosen, and Leiblum (1982) suggested that individuals with sexual dysfunction present specific sexual scripts that distinguish them from individuals without sexual difficulties. Individuals with sexual dysfunction would tend to present less complex, more rigid and conventional, and less satisfied scripts compared to individuals without sexual dysfunction. Unfortunately, no measures to assess sexual scripts were developed, and limited evidence for these hypotheses exists in the scientific literature.

To further investigate the role of cognitive factors on sexual problems, we applied the methodology used in cognitive therapy to the sexuality field. Cognitive theory, due to its eminent heuristic value, has led to a better understanding of the cognitive processes involved in a large spectrum of psychopathological situations and has been successfully used in the comprehension and treatment of several disorders: depression (Beck, Rush, Shaw, & Emery, 1979), anxiety (Beck & Emery, 1985), relationship disorders (Beck, 1988), personality disorders (Beck & Freeman, 1990), substance abuse disorders (Beck, Wright, Newman, & Liese, 1993), and hostility (Beck, 1999).

Cognitive schemas are conceptualized as the nuclear structure of the cognitive system. Schemas are described as "structures for screening, coding and evaluating the stimuli…on the basis of which, the individual is able to orient himself in relation to time and space and to categorize and interpret experiences in a meaningful way" (Beck, 1967, p. 238). Thus, schemas are responsible for the meaning assigned to a specific event and for guiding emotional and behavioral responses to external or internal stimuli. Schemas serve adaptive goals facilitating the interaction between the individuals and their environments. However, when the meaning assigned to a particular event is not adequate, a dysfunctional emotional and behavioral response may occur. According to Alford and Beck (1997), individuals may develop specific, faulty cognitive constructions called cognitive vulnerabilities that predispose them to develop specific psychopathological syndromes. Thus, the diverse psychopathological syndromes may be characterized according to specific inadequate or maladaptive schemas. Depression is characterized by negative views about one's self. In anxiety, the self is seen as inadequate and in anger and paranoid disorders as mistreated or abused by others (Alford & Beck, 1997).

Recently, Beck (1996) theorized that there are two broad categories of negative schemas generally related to psychopathological situations. *Helpless* schemas are mainly related to the idea that oneself is personally helpless (powerless, weak, or vulnerable) or incompetent (a failure, inferior, or a loser), and *unlovable* schemas are specially related to the idea of not being loved by others (undesirable or unworthy). This conceptualization was also used by Beck (1995), who developed a taxonomy of 28 core beliefs (14 helpless and 14 unlovable beliefs). We think that this proposed list could represent the main "pathological" self-schemas and be an alternative to other validated, but sometimes excessively long, measures such as the Schema Questionnaire (SQ; Young & Brown, 1989). Moreover, this conceptualization would allow a comparison between men and women with sexual dysfunction. Most clinical evidence suggests that men interpret sexual dysfunction as a sign of personal weakness and incompetence (Sbrocco & Barlow, 1996; Wincze & Barlow, 1997; Zilbergeld, 1992, 1999), which is better accounted for by the helpless domain. For women, on the other hand, a general clinical idea exists that mainly social and interpersonal issues are involved in sexual dysfunctions (Hawton 1985; Heiman, & LoPiccolo, 1988), which is better illustrated by the unlovability domain.

Starting from this point of view, our purpose was to develop and test the psychometric characteristics of a measure that assesses self-schemas activated by an individual when facing sexual failure situations. To gain a stronger sensitivity to assessing self-schemas, we decided to include a range of situations related to sexual failure that could work as schema activators. In fact, the idea that individuals do not have total voluntary access to their self-schemas, and are not capable of reporting them completely, led us to use a procedure already developed (Rijo, 2000). Rijo utilized activation situations related to past events and early memories within the SQ (Young & Brown, 1989), and showed that the reported schema activation was significantly higher using this procedure, compared to reported schemas in the original SQ. These findings, which are consistent with the theoretical concept of schema (Beck, 1996), influenced our measure development process. We hypothesized that participants with higher levels of identification with the activation events (unsuccessful sexual events) would report significantly higher negative self-schemas.

Moreover, this study was also part of a more integrated research project developed to assess the role of cognitive–emotional variables in sexual functioning (Nobre, 2003). For this purpose, two other measures were also created to study different levels of cognitive interference: the Sexual Dysfunctional Beliefs Questionnaire (SDBQ; Nobre, Pinto-Gouveia, & Gomes, 2003—assessing sexual beliefs associated to sexual dysfunction) and the Sexual Modes Questionnaire (SMQ; Nobre & Pinto-Gouveia, 2003—assessing sexual thoughts,

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emotions, and sexual responses). It was hypothesized that sexual beliefs would stipulate the conditions for the activation of the cognitive schemas in specific sexually unsuccessful experiences. Once activated, these cognitive schemas would elicit a systemic structure composed of thoughts, emotions, and sexual responses. For example, someone who presents with the sexual belief, "A man who fails to obtain an erection is a failure" (macho belief), would tend to activate negative self-schemas such as "I'm incompetent" whenever an erection difficulty occurs. This negative self-schema, once activated, would elicit negative automatic thoughts ("I'm not able to satisfy my partner," or "I will never be the same again") and negative emotions (sadness, disillusion, etc.), impairing the sexual response. Recent findings seem to support this model (Nobre, 2003; Nobre & Pinto-Gouveia, 2000a, 2006a,b).

Table 1. *Demographic Characteristics of the Community Sample* ($N = 223$)

Variable	Value
Age	
M	25.6
Minimum–Maximum	18–56
SD	8.0
Marital status	
Single	79.5%
Married	18.3%
Divorced	1.0%
Living together	1.4%
Education level	
0–4 years	0.5%
10–12 years	25.6%
13–15 years	9.0%
16+ years	64.9%

Method

Participants and Procedures

A total of 319 individuals (201 women and 118 men) participated in the study. A community sample of 223 participants (154 women and 69 men) and a clinical sample of 96 participants (47 women and 49 men) were constituted. Participants from the community sample were recruited in different regions of Portugal by a group of volunteer students from the University of Trás-os-Montes e Alto Douro. This group of students collected the sample in their hometowns throughout the country using non-random methods. Participants were contacted door to door by the volunteers, who explained the purpose of the study and gave them the questionnaire with the instructions. These participants were instructed to answer the questionnaires when alone and in the privacy of their homes and then to return them by mail using pre-stamped envelopes. Participants were not paid for their participation. The community sample was collected between February and July 2000, and the response rate was 39% (demographic characteristics are presented in Table 1).

Participants from the clinical sample were recruited among the patients of the sexology clinic of Coimbra's University Hospital (an outpatient clinic of a central hospital serving the population of Coimbra and its region). Individuals diagnosed with sexual dysfunction, using the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria, constitute this clinical group. After completing a clinical assessment conducted by a group of trained sex therapists from the clinic (using an unpublished structured interview for sexual dysfunctions), patients were approached about the study by a member of the research team and given the option to decline. An explanation of the purpose of the study was given, and a consent form was signed. Participants then answered the questionnaire by themselves in a private space and returned them directly to the member of the team. Participants took 40 min, on average, to complete the questionnaires. Erectile disorder (70%) and premature ejaculation (25%) were the most common diagnoses among the men, whereas hypoactive sexual desire (38%), vaginismus (24%), and orgasmic disorders (20%) were the main complaints among the women. Participants were not paid for their participation. The clinical sample was collected between September 2000 and December 2001, and the response rate was 94.8%.

To perform a discriminant analysis, a control group (46 women and 49 men) was partially selected from the previously mentioned community sample (38 women and 29 men) and from a pool of new community volunteers (8 women and 20 men). Participants from this new pool were also selected by non-random methods, using a procedure similar to the one adopted to collect the original community sample. The goal was to constitute a control group that matched the clinical group with regard to demographic variables.

Participants from this control group were also screened using the International Index of Erectile Function (IIEF; Rosen et al., 1997) and the Female Sexual Function Index (FSFI; Rosen et al., 2000) to eliminate sexual dysfunction. Participants who scored below the cutoff points for the IIEF (Cappelleri, Rosen, Smith, Mishra, & Osterloh, 1999) and FSFI (Wiegel, Meston, & Rosen, 2005) were not included in the control group. Detailed demographic data from both male and female clinical and control groups are presented in Table 2.

Materials

To validate our instrument, we used several other reliable and valid measures related to cognitive theory and research. Besides our Questionnaire of Cognitive Schema Activation in Sexual Context (QCSASC), we

Table 2. *Participants' Demographic Characteristics (Clinical and Control Groups)*

	Women	
Variable	**Clinical Sample (n = 47)**	**Control Sample (n = 46)**
Age		
M	28.7	29.2
Minimum–Maximum	19–50	18–48
SD	6.7	8.6
Marital status		
Single	23.4%	30.4%
Married	63.8%	60.9%
Divorced	6.4%	2.2%
Living together	6.4%	6.5%
Education level		
0–4 years	10.6%	10.9%
5–6 years	10.6%	10.9%
7–9 years	6.4%	6.5%
10–12 years	31.9%	34.8%
13–15 years	10.6%	4.3%
16+ years	29.8%	32.6%

	Men	
	Clinical Sample (n = 49)	**Control Sample (n = 49)**
Age		
M	43.0	42.7
Minimum–Maximum	18–67	18–56
SD	14.4	15.7
Marital status		
Single	26.5%	22.4%
Married	61.2%	71.4%
Divorced	2.1%	2.0%
Living together	10.2%	4.1%
Education level		
0–4 years	38.8%	36.0%
5–6 years	24.5%	8.0%
7–9 years	12.2%	22.0%
10–12 years	22.4%	30.0%
13–15 years	0.0%	0.0%
16+ years	2.0%	4.0%

also used the SQ (Young & Brown, 1989), the Sexual Self-Schema (SSS) questionnaire (Andersen & Cyranowski, 1994; Andersen et al., 1999), the IIEF (Rosen et al., 1997), and the FSFI (Rosen et al., 2000). The questionnaires used in the convergent validity study (SSS and SQ) were randomly assigned to participants from the community sample to minimize fatigue (SSS: $n = 48$; SQ: $n = 54$).

QCSASC. The QCSASC is a 28-item instrument that assesses cognitive schemas presented by the participants when facing sexual situations. The first part consists of the presentation of four sexual situations related to the most common sexual dysfunctions: desire disorder, erectile disorder, premature ejaculation, and orgasmic difficulties in the male version and desire disorder, subjective arousal difficulties, orgasmic problems, and vaginismus in the female version. These four situations are presented in the questionnaire in the form of vignettes and were developed by a panel of sex therapists based on material from clinical cases. Participants are asked to indicate the situation (if any) that is most similar to their sexual experience and to rate the frequency in which it usually happens from 1 (*never happens*) to 5 (*happens often*). They are also asked to identify the emotions aroused by the situation (checking all that apply from a list of 10 emotions: worry, sadness, disillusion, fear, guilt, shame, anger, hurt, pleasure, and satisfaction). After being instructed to concentrate on the identified situations and emotions, they are asked to rate, on a 5-point likert scale (1–5), the degree of concordance with 28 self-statements reproducing the core beliefs or self-schemas presented by Beck (1995; also see Appendixes A and B). Specific indexes for the five domains and for the total scale can be calculated through the sum of the schema items (higher scores reflecting greater negative schema activation).

SQ. The SQ is a widely known and used measure developed by Young and Brown (1989). The short version consists of 123 statements related with the Schema Focused Theory proposed by Young (1990). The questionnaire assesses 15 schemas that represent four overall domains: autonomy, connectedness, worthiness, and limits. The instrument has shown good convergent and discriminant validity with measures of psychopathology (Schmidt, Joiner, Young, & Telch, 1995). A Portuguese version of the scale was developed by Pinto-Gouveia, Robalo, Cunha, and Fonseca (1997), which showed good psychometric characteristics and replicated the 15-domain structure proposed by Young (1990).

SSS questionnaire. The SSS questionnaire is a measure developed by Andersen and Cyranowski (1994, female version) and Andersen et al. (1999, male version). These measures intend to assess cognitive generalizations about sexual aspects of oneself that are responsible for guiding sexual behavior. Both versions present acceptable test–retest reliability, internal consistency, and validity characteristics (Andersen & Cyranowski, 1994; Andersen et al., 1999). A factor analysis of the scale shows a three-factor structure for the male and female versions. A Portuguese version was developed with good psychometric characteristics (Nobre, 2000).

IIEF. The IIEF (Rosen et al., 1997) is a 15-item, brief, self-administered measure assessing different areas of sexual functioning in men. A principal component analysis identified five factors: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Psychometric studies supported the validity and reliability of the measure (Rosen et al.,

1997). The measure allows the calculation of specific indexes for each dimension, as well as a sexual function total index (calculated through the sum of the specific dimensional indexes), with higher scores indicating greater levels of sexual functioning. A Portuguese version was developed with good psychometric characteristics (Nobre, 2008b).

FSFI. The FSFI (Rosen et al., 2000) is a 19-item instrument providing detailed information on the major dimensions of sexual function. A principal component analysis identified six factors: sexual interest/desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and sexual pain. The measure presents acceptable test–retest reliability, internal consistency, and validity (Rosen et al., 2000). The measure allows the calculation of specific indexes for each dimension, as well a sexual function index (calculated through the sum of the specific dimensional indexes), with higher scores indicating greater levels of sexual functioning. A Portuguese version was developed with good psychometric characteristics (Nobre, 2008a).

Results

Factor Analysis and Domain Scores

A principal component analysis with varimax rotation was performed to investigate the internal structure of the 28 core beliefs presented in the QCSASC (see Table 3). Five factors were identified (using Cattell's scree test). The factors showed theoretical consistency and account for 62% of the total variance. Kaiser–Meyer–Olkin of .91 showed the adequacy of the sample, and Bartlett's test of sphericity was significant ($\chi^2 = 2,940$, $p < .01$).

The item selection for each factor was based on statistical and interpretability criteria. Inclusion decision was based on loadings higher than 0.4 on the respective factor. Items that did not load high on any of the factors were excluded (cf. Tabachnick & Fidell, 2007). Based on these criteria, two items were excluded: Item 3, "I'm out of control"; and Item 18, "I'm unattractive." Items 7 ("I'm trapped"), 12 ("I'm disrespected"), 14 ("I'm not good enough [achieve]"), and 25 ("I'm not good enough [not loved]") were excluded for loading higher than 0.4 in more than one factor. Items 20, 22, and 28, although presenting loadings higher than 0.4 in more than one factor, were retained because differences between loadings were higher than 0.10 (items were included in the factors where the loadings were higher). The five domains identified were as follows:

1. Undesirability/rejection: domain reflecting self-beliefs related to social undesirability and rejection. Items like "I'm defective," "I'm bound to be

Table 3. *Principal Component Analysis of the QCSASC with Varimax Rotation*

QCSASC Items	Factors				
	1	2	3	4	5
Undesirability/rejection					
15. I'm unlovable	**.66**	.06	.01	.27	.32
17. I'm undesirable	**.64**	.15	.23	.32	.26
19. I'm unwanted	**.68**	.36	.23	.14	.13
20. I'm uncared for	**.59**	.25	.46	–.00	.07
24. I'm defective (not loved)	**.73**	.26	.25	.24	–.06
25. I'm not good enough (not loved)	**.52**	**.49**	.18	.29	.06
26. I'm bound to be rejected	**.77**	.28	.16	.21	.07
27. I'm bound to be abandoned	**.67**	.22	.37	.09	.17
Incompetence					
2. I'm powerless	.05	**.76**	.08	.24	.07
4. I'm weak	.21	**.54**	.13	.35	.33
8. I'm inadequate	.39	**.65**	–.17	.04	.16
9. I'm ineffective	.22	**.63**	.15	.07	.38
10. I'm incompetent	.16	**.83**	.13	.04	.07
11. I'm a failure	.09	**.75**	.29	.15	.14
13. I'm defective (less than others)	.31	**.67**	.16	.04	–.01
14. I'm not good enough (achieve)	.30	**.61**	.02	**.52**	–.08
Self-depreciation					
16. I'm unlikable	.38	.01	**.64**	.22	.14
21. I'm bad	.16	.15	**.77**	.08	–.02
22. I'm unworthy	.28	**.45**	**.60**	.08	.06
Difference/loneliness					
5. I'm vulnerable	.20	.16	–.06	**.49**	.38
23. I'm different	.08	.16	.12	**.66**	.10
28. I'm bound to be alone	**.48**	.05	.20	**.62**	.05
Helpless					
1. I'm helpless	.24	.33	.22	.26	**.46**
6. I'm needy	.05	.04	.04	.16	**.75**
7. I'm trapped	**.56**	.10	–.12	–.07	**.60**
12. I'm disrespected	**.51**	.30	.20	–.07	**.42**

Note. $N = 223$. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context. Participants from the community sample were used in the analysis. Values in bold indicate items with loads higher than .4 in the factors.

rejected," or "I'm unwanted" presented the higher loadings in this factor.

2. Incompetence: dimension characterized by self-beliefs of failure, incompetence, and powerlessness—"I'm incompetent" and "I'm powerless."

3. Self-depreciation: factor represented by beliefs related to the self-worthiness and self-defective ideas—"I'm bad" and "I'm unlikable."

4. Difference/loneliness: dimension characterized by a belief of being different and lonely—"I'm different" and "I'm bound to be alone."

5. Helpless: domain represented by beliefs of being helpless and needy—"I'm needy" and "I'm helpless."

Table 4. *Questionnaire of Cognitive Schema Activation in Sexual Context Domain Intercorrelations*

Domains	F1	F2	F3	F4	F5	Total
F1: Undesirability/rejection	—					.90*
F2: Incompetence	.67*	—				.85*
F3: Self-depreciation	.63*	.47*	—			.69*
F4: Difference/loneliness	.64*	.49*	.39*	—		.75*
F5: Helpless	.62*	.51*	.39*	.50*	—	.77*

Note. $N = 199$. Correlations were conducted between subscale scores.
*$p < .01$.

The five-factor structure suggested by the factor analysis contrasts with the two theoretical domains proposed by Beck (1995). Factor 1 (undesirability/ rejection) and Factor 2 (incompetence) seem to generically represent the two broad domains of unlovability and helplessness. In fact, the eight items presenting higher loadings in the undesirability factor were taken from the list of unlovability schemas, whereas the eight items loading highly on the incompetence factor were taken from the helpless schemas proposed by Beck (1995). Despite this partial convergence, results from our analysis indicate the existence of three additional dimensions: self-depreciation, constituted by three items conceptualized by Beck (1995) as unlovability schemas; difference/loneliness, represented by three items from both unlovability and helpless schemas; and helpless with four items from the helpless schemas list.

Correlations between the various dimensions of the QCSASC (using subscale scores) showed that there is a strong association between them. All correlations were statistically significant ($p < .01$). The undesirability/ rejection domain presented the higher correlations ($r > .62$) with all the other dimensions: incompetence, difference/loneliness, self-depreciation, and helpless. This could mean that this dimension is the central construct of the QCSASC (see Table 4).

Testing the Significance of Using Activation Events as a Strategy for Assessing Cognitive Schemas

To test the significance of using activation events as a methodological strategy to assess cognitive schemas, we performed a *t* test between individuals who presented low and high levels of identification with the activation events (low identification: individuals with ratings <3 on the frequency in which the episodes usually happen; high identification: participants with ratings >3 on the frequency in which the episodes usually happen). It was hypothesized that participants with higher identification with the activation episodes would endorse more negative cognitive schemas. Findings showed that the group with high identification with the activation events presented significantly higher scores on the total scale, $t(146) = 2.48$, $p < .05$ (Cohen's $d = 0.42$; $M = 43.41$, $SD = 13.52$; $M = 49.06$, $SD = 11.42$), and in the

dimensions of incompetence, $t(146) = 2.42$, $p < .05$ (Cohen's $d = 0.41$; $M = 12.73$, $SD = 5.16$; $M = 14.76$, $SD = 4.47$); difference/loneliness, $t(146) = 2.35$, $p < .05$ (Cohen's $d = 0.40$; $M = 6.79$, $SD = 2.42$; $M = 7.76$, $SD = 2.36$); and helpless/betrayed, $t(146) = 2.93$, $p < .01$ (Cohen's $d = 0.50$; $M = 6.47$, $SD = 2.19$; $M = 7.61$, $SD = 2.44$). Undesirability and self-depreciation schemas failed to discriminate the two groups. Despite this somewhat weak support, we think that these findings show some incremental ability of this methodological strategy to detect cognitive schemas, as previously suggested by other authors (e.g., Rijo, 2000).

Reliability Studies

Test–retest reliability. Test–retest reliability was assessed by computing correlations for the total scale, between the scores of 34 participants (taken from the community sample), in two consecutive administrations of the questionnaire with a 4-week interval. The results varied between $r = .49$ and $r = .74$ for the specific domains, with the full scale presenting $r = .66$. Although some correlations were not so strong, all reliability coefficients were statistically significant ($p < .01$). These results indicated a moderate stability of the scale over time (see Table 5).

Internal consistency. Internal consistency was assessed using Cronbach's alpha statistics for the full scale and the different domains of the questionnaire. High inter-item correlations were observed for the subscales and the total scale. Cronbach's alpha values ranged from .59 (F4) to .91 (F1), with the full scale presenting .94. Except for the difference/loneliness and the helpless domains, all other Cronbach's alpha results were higher than .71, supporting the homogeneity of the scale and the contribution from all the factors to the overall score (see Table 5).

Table 5. *Test–Retest Reliability and Internal Consistency of the QCSASC*

QCSASC Domains	N	r	α
Undesirability/rejection	8	.61*	.91
Incompetence	8	.56*	.88
Self-depreciation	3	.49*	.71
Difference/loneliness	3	.74*	.59
Helpless	4	.73*	.67
Total	26	.66*	.94

Note. $n = 34$ for the test–retest reliability; $n = 199$ for the internal consistency. Participants used in the analysis were taken from the community sample. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context.
*$p < .01$.

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Table 6. *Correlations of the QCSASC Domains with SQ Domains and Total Scores*

	QCSASC Domains					
SQ Domains	Undesirability/Rejection	Incompetence	Self-Depreciation	Difference/Loneliness	Helpless	Total
Autonomy	.54**	.39	.02	.38	.32	.49**
Connectednnes	.70**	.34	.15	.53**	.37	.60**
Worthiness	.72**	.50**	.41*	.58**	.45*	.70**
Limits	.28	.02	.03	.26	.26	.24
Total	.59**	.36	.28	.53**	.43*	.55**

Note. $n = 54$. Participants used in the analysis were taken from the community sample. Bonferroni corrections were applied to all correlations. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context; SQ = Schema Questionnaire.
*$p < .05$. **$p < .01$.

Convergent Validity

In regards to convergent validity, we compared our measure with other questionnaires oriented to assess cognitive structures linked with psychopathology: the SQ (Young & Brown, 1989) and the SSS questionnaire (Andersen & Cyranowski, 1994; Andersen et al., 1999). It was hypothesized that the QCSASC total score would be correlated with the total scores from each of these two instruments.

Correlations between the QCSASC and the SQ. As hypothesized, the total scores from the QCSASC and the SQ were significantly correlated with each other, $r(54) = .55$, $p < .01$. The specific correlations between the QCSASC dimensions and the SQ domains partially confirmed our predictions (see Table 6). The incompetence and self-depreciation domains significantly correlated with the worthiness dimension from the SQ. On the other hand, undesirability/rejection, difference/loneliness, and helpless correlated significantly with both the connectedness and worthiness domains from the SQ. The limits domain from the SQ presented low correlations with all QCSASC domains. Contrary to our predictions, the autonomy domain of the SQ was significantly correlated with the QCSASC total score.

Correlations between the QCSASC and the SSS questionnaire. Regarding the SSS questionnaire, significant positive correlations between our measure (total score) and the conservative domain were found. In the opposite direction, the passionate/romantic and the open/direct domains showed negative correlations with the QCSASC total score (see Table 7).

Discriminant Validity

To assess the discriminant validity of the QCSASC, we studied its capacity to differentiate between a group of individuals with sexual dysfunction and a control group (see Table 8). We hypothesized that the higher the activation of negative cognitive schemas facing

unsuccessful sexual situations, the greater the probability of developing a sexual dysfunction. Regarding women, we found statistically significant differences between clinical and control groups in three of the five domains of the QCSASC: incompetence, $t(91) = 5.30$, $p < .01$ (Cohen's $d = 1.11$); self-depreciation, $t(91) = 2.71$, $p < .01$ (Cohen's $d = 0.57$); and difference/loneliness, $t(91) = 2.12$, $p < .05$ (Cohen's $d = 0.44$). Women with sexual dysfunction also scored significantly higher on the total QCSASC scale, $t(91) = 3.54$, $p < .01$ (Cohen's $d = 0.74$). Men with sexual dysfunction presented significantly higher scores, compared to the control group, on the incompetence dimension, $t(96) = 4.55$, $p < .01$ (Cohen's $d = 0.93$); and the total scale, $t(96) = 2.26$, $p < .05$ (Cohen's $d = 0.46$). The remaining dimensions did not differ significantly between the two groups.

Incremental Validity

To test the relative clinical utility of the QCSASC in comparison with the other related measures used in the assessment of convergent validity, we conducted partial correlations between the cognitive measures (QCSASC, SQ, and SSS) and indexes of sexual function in men (IIEF) and women (FSFI). Findings indicated that, after

Table 7. *Correlations of the QCSASC Domains with SSS Questionnaire Domains*

	SSS Questionnaire Domains		
QCSASC Domains	Passionate/ Romantic	Open/Direct	Conservative
Undesirability/rejection	−.43*	−.08	.24
Incompetence	−.21	−.02	.43*
Self-depreciation	−.33	−.18	.41*
Difference/loneliness	−.19	−.36	.53**
Helpless	−.23	.02	.19
Total	−.34	−.15	.44*

Note. $n = 48$. Participants used in the analysis were taken from the community sample. Bonferroni corrections were applied to all correlations. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context; SSS = Sexual Self-Schema.
*$p < .05$. **$p < .01$.

Table 8. *Means and Standard Deviations of Clinical and Control groups in QCSASC Domains and Between-Group t Tests*

	Women				
	Clinical Group (n = 47)		Control Group (n = 46)		
QCSASC Domains	M	SD	M	SD	t
Undesirability/rejection	15.97	4.97	14.17	5.22	1.55
Incompetence	20.29	7.07	13.11	4.29	5.30**
Self-depreciation	5.77	2.15	4.58	1.78	2.71**
Difference/loneliness	8.42	2.73	7.14	2.75	2.12*
Helpless/betrayed	7.84	2.53	7.03	2.36	1.49
Total	58.95	17.24	45.58	13.93	3.54**

	Men				
	Clinical Group (n = 49)		Control Group (n = 49)		
Undesirability/rejection	14.50	4.41	13.63	4.65	0.77
Incompetence	19.09	6.49	12.63	4.40	4.55**
Self-depreciation	5.23	2.21	5.00	1.78	0.48
Difference/loneliness	7.17	2.57	6.80	2.84	0.56
Helpless/betrayed	7.13	2.45	7.04	2.79	0.14
Total	53.83	15.79	44.96	13.69	2.26*

Note. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context.
*$p < .05$. **$p < .01$.

controlling for the contribution of the other cognitive measures, QCSASC presented higher correlations with sexual function in men, $r(48) = -.33$, $p < .01$, and women, $r(48) = -.36$, $p < .01$; compared to the SSS for men, $r(48) = .20$, $p < .05$, and women, $r(48) = .27$, $p < .01$; and the SQ for men, $r(48) = -.13$, $p > .05$, and women $r(48) = -.03$, $p > .05$ (see Table 9).

Discussion

The purpose of this study was to investigate the psychometric characteristics of a measure we developed

Table 9. *Partial Correlations Between Sexual Function and the Cognitive Measures*

	Sexual Function	
Cognitive Measures Total Score	FSFI (n = 25)	IIEF (n = 23)
QCSASC	−.36**	−.33**
SQ	−.03	−.13
SSS	.27**	.20*

Note. For every correlation between each cognitive measure and the sexual function indexes, the contribution of the remaining cognitive measures was controlled. Participants used in the analysis were taken from the community sample. QCSASC = Questionnaire of Cognitive Schema Activation in Sexual Context; SQ = Schema Questionnaire; SSS = Sexual Self-Schema questionnaire.
*$p < .05$. **$p < .01$.

(QCSASC; Nobre & Pinto-Gouveia, 2000b) to assess the activation of cognitive schemas in unsuccessful sexual events. The questionnaire was submitted to a principal component analysis, with five factors being identified: undesirability/rejection, incompetence, self-depreciation, difference/loneliness, and helpless. Although this structure contrasted with the two theoretical domains proposed by Beck (1995), it seems that undesirability and incompetence were basically representing the unlovability and helpless domains, respectively. Test–retest reliability studies showed moderate correlations between two consecutive administrations of the questionnaire, demonstrating the stability of the QCSASC across time. Internal consistency studies indicated high Cronbach's alpha for the total scale, with some moderate results, specifically in the difference/loneliness dimension. This finding might be interpreted as an effect of the dual-dimensional nature of this factor, which presents two sub-domains (difference and loneliness).

Convergent validity was assessed by correlating our instrument with other questionnaires oriented to assess cognitive structures linked with psychopathology. As expected, the higher correlations were observed with the SQ. The correlational pattern seemed to validate the clinical suggestion made by Beck (1995) that the list of self-cognitive schemas falls into two broad categories: unlovability, which could be related to both the connectedness and the worthiness domains of the SQ, represented by the undesirability/rejection, difference/loneliness, and helpless dimensions of the QCSASC; and helplessness, possibly associated with the worthiness domain of the SQ and represented by the incompetence and self-depreciation dimensions of the QCSASC.

However, contrary to our predictions, the autonomy domain of the SQ was significantly correlated with the QCSASC total score. This high correlation might be related to the fact that the autonomy domain assesses areas that present some overlap with our measure. Specifically, the undesirability/rejection dimension from the QCSASC could be related to specific subject matters of the SQ autonomy domain, such as subjugation and lack of individuation and fear of losing control (explaining the high correlation between them).

Results regarding the relation between the QCSASC and the SSS questionnaire showed moderate to high correlations supporting our prediction that negative views about oneself as a sexual individual (particularly conservative ideas) would be related to the activation of negative self-schemas when facing unsuccessful sexual situations.

Findings from the incremental validity analysis indicate that the QCSASC presents with higher clinical utility compared to already existing and related measures (e.g., SQ and SSS). Partial correlations with measures of sexual functioning in men (IIEF) and women (FSFI) were higher for the QCSASC compared

to the SQ and SSS, suggesting that this new measure presents a unique contribution for the explanation of sexual functioning beyond previous existing measures. These findings should, however, be interpreted as preliminary due to the low sample size used in these analyses.

When studying discriminant validity, we found statistically significant differences between clinical and non-clinical men and women in the QCSASC total scale and some of its domains. As hypothesized, men with sexual dysfunction differentiate from the control group by activating significantly more incompetence schemas when facing unsuccessful sexual experiences. This finding seems to support clinical suggestions that men with sexual dysfunction interpret sexual failure experiences as a sign of personal weakness and incompetence (Sbrocco & Barlow, 1996; Wincze & Barlow, 1997; Zilbergeld, 1992, 1999). Regarding women, results are more diverse. Besides the incompetence schemas, women with sexual dysfunction also activated significantly more self-depreciation and difference/loneliness schemas. It seems that these women assign meanings to failure experiences both related to personal incompetence and depreciation dimensions and more interpersonal domains such as loneliness. Contrary to predictions, women with sexual dysfunction did not report significantly more undesirability/rejection schemas when exposed to negative sexual events compared to the control group. Findings do not seem to support the idea that social and interpersonal factors (such as social undesirability) are strongly associated with women's sexual problems. We may hypothesize that the traditional double standard in which men's sexuality is mostly performance related (thus, related to incompetence in case of failure), whereas women's sexuality is mostly associated with love and commitment (therefore linked to undesirability and rejection in case of failure), does not seem to be relevant to understand the cognitive processes involved in sexual dysfunction. It seems that incompetence-related attributions to sexual failure play a central role in both men and women.

These findings should, however, be interpreted with caution. Despite the moderate to high effect sizes observed, a considerable number of dimensions failed to reach statistical significance, particularly in men, where only the incompetence schema significantly discriminated the clinical from the control group. This may mean that only some specific schemas assessed by the QCSASC are related to sexual dysfunction (with particular emphasis on the incompetence schema) raising the question of the clinical utility of the measure in men. Because the main purpose of this study was not to test hypotheses regarding the role of schema activation in sexual dysfunction, but to develop a measure to assess schemas, and study its psychometric characteristics, new research is being conducted (using larger samples) to better investigate the role of cognitive schemas in sexual problems (Nobre & Pinto-Gouveia, 2008).

Moreover, for the fact that there was no method to control the possible confounding effect of psychopathology constitutes a limitation of the study. Further studies should control for the presence of psychopathology, which may be responsible for some of the differences between clinical and control groups in the activation of cognitive schemas. In addition, the different questionnaire administration conditions between the clinical (administered at the clinic) and the control group (administered at home) may have also biased the findings. Also, the use of non-random methods to collect the community sample and the low response rate in this group (39%) limits the capacity to generalize the findings from the study.

Furthermore, the clinical sample used in this study also served to assess the discriminant validity of the SMQ (Nobre & Pinto-Gouveia, 2003) and the SDBQ (Nobre et al., 2003). Additional replications of the study using a different clinical sample should be conducted to test its findings. The way cognitive schemas were assessed might also raise the question of whether they are measuring specific cognitive reactions to sexual events or more general, negative events that may occur. Despite the fact that the measure induced individuals to concentrate on specific negative sexual events (by making them read a set of small vignettes about unsuccessful sexual situations) while asking them to respond to the list of cognitive schemas, there is still a possibility that participants report cognitive schemas in reaction to more general life situations.

Despite these limitations, it is our conviction that the QCSASC is a measure that might be clinically useful in helping to assess the role of cognitive variables in sexual functioning and eventually contributing to a better understanding of cognitive processes underlying sexual problems and the development of new therapeutic strategies.

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Appendix A: Questionnaire of Cognitive Schema Activation in Sexual Context; Female Version; (Nobre & Pinto-Gouveia, 2000b)

Read carefully each one of the episodes presented below and indicate the extent to which they have ever happened to you by circling a number (1-never to 5-often)

I'm alone with my partner. He looks as if he wants to have sex, and he's going to extraordinary lengths to try to arouse me. However, I don't feel like it at all. So instead, I pretend to be tired and change the subject. Yet he persists. He looks disappointed, and says that I don't love him as much as I used to.

never happened **1____2____3____4____5** happened often

I'm having sex with my partner. He is really trying to arouse me, but I am experiencing no pleasure at all. Instead, I feel as if I am fulfilling an obligation. I ask myself, "Does it always have to be like this?"

never happened **1____2____3____4____5** happened often

My partner is touching me and I am very aroused. A few moments later he tries to penetrate me, but my vaginal muscles seem to clamp shut and my partner can't penetrate. He persists with no success, and what could have been an unforgettable moment turns into a frustrating experience.

never happened **1____2____3____4____5** happened often

My partner and I are engaged in foreplay, and he has tried different ways of stimulating me, which I'm enjoying. But in spite of it all I can't reach orgasm. My partner seems to be getting tired and I start to feel frustrated. I begin to feel anxious as I realize that the likelihood of reaching orgasm is becoming more and more remote.

never happened **1____2____3____4____5** happened often

Circle all emotions you felt when you imagined the episode which most often happens to you

Worry Sadness Disillusionment Fear Guilt Shame Anger Hurt Pleasure Satisfaction

Keeping in mind the episode which most often happens to you, read the statements presented below carefully and circle the degree to which they describe the way you think and feel about yourself (1 – completely false to 5 – completely true)

SCHEMAS	Completely false	False	Sometimes true some false	True	Completely true	SCHEMAS	Completely false	False	Sometimes true some false	True	Completely true
1. I'm helpless	1	2	3	4	5	15. I'm unlovable	1	2	3	4	5
2. I'm powerless	1	2	3	4	5	16. I'm unlikable	1	2	3	4	5
3. I'm out of control	1	2	3	4	5	17. I'm undesirable	1	2	3	4	5
4. I'm weak	1	2	3	4	5	18. I'm unattractive	1	2	3	4	5
5. I'm vulnerable	1	2	3	4	5	19. I'm unwanted	1	2	3	4	5
6. I'm needy	1	2	3	4	5	20. I'm uncared for	1	2	3	4	5
7. I'm trapped	1	2	3	4	5	21. I'm bad	1	2	3	4	5
8. I'm inadequate	1	2	3	4	5	22. I'm unworthy	1	2	3	4	5
9. I'm ineffective	1	2	3	4	5	23. I'm different	1	2	3	4	5
10. I'm incompetent	1	2	3	4	5	24. I'm defective (not loved)	1	2	3	4	5
11. I'm a failure	1	2	3	4	5	25. I'm not good enough (loved)	1	2	3	4	5
12. I'm disrespected	1	2	3	4	5	26. I'm bound to be rejected	1	2	3	4	5
13. I'm defective (less than others)	1	2	3	4	5	27. I'm bound to be abandoned	1	2	3	4	5
14. I'm not good enough (achieve)	1	2	3	4	5	28. I'm bound to be alone	1	2	3	4	5

Appendix B: Questionnaire of Cognitive Schema Activation in Sexual Context; Male Version; (Nobre & Pinto-Gouveia, 2000b)

Read carefully each one of the episodes presented below and indicate the extent to which they usually happened to you by circling a number (1-never to 5-often)

I'm alone with my partner. She looks as if she wants to have sex, and she's going to extraordinary lengths to try to arouse me. However, I don't feel like it at all. So instead, I pretend to be tired and change the subject. Yet she persists. She looks disappointed, and says that I don't love her as much as I used to.

never happened **1____2____3____4____5** happened often

I'm caressing my partner, and she is enjoying it and seems to be ready for intercourse. Upon attempting penetration, I notice that my erection isn't as firm as it normally is and full penetration seems impossible. I try to no avail, and finally quit.

never happened **1____2____3____4____5** happened often

My partner is stimulating me, and I'm becoming very aroused. I'm getting very excited and I immediately try to penetrate her. I feel out of control and reach orgasm very quickly, at which point intercourse stops. She looks very disappointed, as if she expected much more from me.

never happened **1____2____3____4____5** happened often

I'm completely involved in lovemaking and I start to penetrate my partner. In the beginning everything is going fine, but time passes and I can't seem to reach orgasm. She seems to be getting tired. No matter how hard I try, orgasm seems to be farther and farther out of my reach.

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never happened **1____2____3____4____5** happened often

Circle all emotions you felt when you imagined the episode which most often happens to you

Worry Sadness Disillusionment Fear Guilt Shame Anger Hurt Pleasure Satisfaction

Keeping in mind the episode which most often happens to you, read the statements presented below carefully and circle the degree to which they describe the way you think and feel about yourself (1 – completely false to 5 – completely true)

SCHEMAS	Completely false	False	Sometimes true some false	True	Completely true
1. I'm helpless	1	2	3	4	5
2. I'm powerless	1	2	3	4	5
3. I'm out of control	1	2	3	4	5
4. I'm weak	1	2	3	4	5
5. I'm vulnerable	1	2	3	4	5
6. I'm needy	1	2	3	4	5
7. I'm trapped	1	2	3	4	5
8. I'm inadequate	1	2	3	4	5
9. I'm ineffective	1	2	3	4	5
10. I'm incompetent	1	2	3	4	5
11. I'm a failure	1	2	3	4	5
12. I'm disrespected	1	2	3	4	5
13. I'm defective (less than others)	1	2	3	4	5
14. I'm not good enough (achieve)	1	2	3	4	5

SCHEMAS	Completely false	False	Sometimes true some false	True	Completely true
15. I'm unlovable	1	2	3	4	5
16. I'm unlikable	1	2	3	4	5
17. I'm undesirable	1	2	3	4	5
18. I'm unattractive	1	2	3	4	5
19. I'm unwanted	1	2	3	4	5
20. I'm uncared for	1	2	3	4	5
21. I'm bad	1	2	3	4	5
22. I'm unworthy	1	2	3	4	5
23. I'm different	1	2	3	4	5
24. I'm defective (not loved)	1	2	3	4	5
25. I'm not good enough (loved)	1	2	3	4	5
26. I'm bound to be rejected	1	2	3	4	5
27. I'm bound to be abandoned	1	2	3	4	5
28. I'm bound to be alone	1	2	3	4	5