Portuguese Version of Cues for Sexual Desire Scale: The Influence of Relationship Duration

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ABSTRACT

Introduction. It is well established that sexual desire is a triggered response to effective sexual stimuli. Factors that trigger women's sexual desire can change over time and circumstances. The Cues for Sexual Desire Scale (CSDS) is a valuable assessment tool to measure the range and magnitude of such stimuli.

Aim. To investigate the psychometric properties of CSDS within a Portuguese community sample of women; to examine the influence of relationship duration on CSDS scores.

Methods. Portuguese women (N = 3,687) over age 18 completed a web-based survey of previously pilot-tested items

Main Outcome Measures. Factor structure and internal consistency of CSDS scores; differences between women in longer-term (more than five years) and shorter-term (less than three years) relationships; predictors of CSDS scores. *Results.* A factor analysis revealed a difference in factor structure between the Portuguese and the original (English) version of CSDS. A five factor solution explained 58.3% of the total variance. The CSDS demonstrated good reliability (Cronbach's = 0.913). All subscales had α values greater than 0.85. Women in longer-term relationships had significantly fewer cues for sexual desire (M = 124) compared to women in shorter-term relationships (M = 128), t(1,879) = 3.7, P < 0.001. Older women (β = -0.075; P < 0.001), and longer term relationships (β = -0.056; P < 0.05), were significant predictors of lower CSDS-P scores. Additionally, women who masturbated (β = 0.172; P < 0.001) and reached orgasm easily (β = 0.059; P < 0.001) had higher scores for CSDS-P.

Conclusions. The CSDS is a useful instrument for identifying triggers that facilitate sexual desire in Portuguese women. Women in longer-term relationships reported fewer cues compared to women in shorter-term relationships. This has clinical implications and suggests that encouraging women to consider newer and varied cues that might evoke or enhance sexual desire may be one means of addressing concerns with low sexual desire. Carvalheira A, Brotto LA, and Maroco J. Portuguese version of cues for sexual desire scale: The influence of relationship duration. J Sex Med 2011;8:123–131.

Key Words. Hypoactive Sexual Desire Disorder; Sexual Interest; Sexual Desire; Women; Cues; Relationship Duration

Introduction

ous attempts to document the prevalence of low desire and hypoactive sexual desire disorder (HSDD) in women. Sexual desire difficulties are considerably more frequent in women than in men [1–8] with rates as high as 60% reported in some studies. However, there are also wide cross-study discrepancies in the reported prevalence of HSDD

that likely relate to significant methodological differences (for a review, see Brotto [9]). Thus, the actual prevalence of HSDD in women is likely between 5 and 20% [9].

Problems with sexual desire have been the most common complaint among treatment-seeking women, perhaps related to the complexity of its etiology, and the range of perpetuating factors involved. Research and clinical practice have revealed the wide diversity of contextual variables

influencing women's desire as well as enormous individual variability among women. According to Baumeister and colleagues [10,11], women have more erotic plasticity than men: for women, sex is driven by sociocultural factors, interpretations, context, expectations, and their like. Thus, the higher plasticity enables women to change their sexual patterns and preferences as they move through adult life [11]. There is evidence that women report substantial fluctuations over time and circumstances in their level of sexual interest [12]. It is also well known that there may be differences in how effective certain stimuli are at triggering women's sexual desire over time and circumstances related to the woman, her partner, and her relationship.

Recently, McCall and Meston [13] presented a multidimensional assessment tool for empirically categorizing stimuli that trigger sexual desire in women. The instrument, entitled the Cues for Sexual Desire Scale (CSDS), is comprised of four factor-analytic derived subscales: (i) emotional bonding cues (e.g., feeling a sense of love with a partner); (ii) erotic/explicit cues (e.g., watching an erotic movie); (iii) visual/proximity cues (e.g., seeing a well-toned body); and (iv) implicit/romantic cues (e.g., having a romantic dinner with a partner). The CSDS was able to detect significant differences between women with and without HSDD [13]. Consistent with prior findings, women with low sexual desire reported significantly less love/emotional bonding cues, erotic/explicit cues, implicit/romantic cues, and had significantly lower CSDS total scores as compared to women with no sexual difficulties [14]. Findings also revealed that postmenopausal women were more likely to report cues associated with Love/Emotional Bonding as compared with premenopausal women [14], but the groups did not differ on the three other factors.

Such an assessment of sexual desire cues can be useful for both clinicians and researchers because it considers the contextual nature of sexual desire and it draws attention to individual differences in factors that can contribute to sexual desire [13]. According to the authors, the CSDS can be beneficial in therapeutic settings to help identify cues that do and do not facilitate sexual desire in women with clinically diagnosed desire difficulties. Thus, determining the generalizability of the measure's usefulness in cross-cultural populations has potentially significant therapeutic benefit internationally.

Relationship duration is among one of a diverse number of contextual variables thought to influ-

ence women's sexual desire. Research has revealed that the proportion of women engaging in consensual sexual activity with no initial awareness of sexual desire increases as the duration of partnership increases [15,16]. Evidence from nationally representative community samples of adult women confirms the finding of such infrequent "spontaneous" sexual thinking (i.e., desire in the absence of stimuli, or desire when stimuli are not made aware to the individual) in the majority of sexually healthy women in longer-term relationships [17–19]. According to Basson [20], the absence of sexual desire at the outset of sexual activity may be normative, particularly for women in longer-term relationships. Such a speculation is consistent with the findings from the Incentive Motivation Model that has received an abundance of empirical support and that posits that desire emerges only in response to sexually competent stimuli [21-24]. Though routinely assessed in the clinical situation, relationship duration is not included in the diagnostic framework for diagnosing sexual dysfunction. We hypothesized that women in longer-term relationships would have fewer cues that trigger sexual desire than women in shorter-term relationships.

To this end, a primary goal of the present study was to further our understanding of how sexual desire is impacted by relationship duration by investigating differences on CSDS scores in two groups: women in shorter- and longer-term relationships. Additionally, a second aim of this study was to investigate the psychometric properties of the CSDS within a Portuguese community sample of women. As women's sexual desire is thought to be influenced by a diversity of variables related to the "context of a person's life" (APA [25]) we also aimed to examine the contextual predictors of sexual desire cues.

Methods

Participants

A total of 3,687 women completed the questionnaires in full. All were living in Portugal and were of Portuguese nationality. All regions of the country were represented in the sample, although the majority of participants lived in larger metropolitan cities. The average age of participants was 29.4 (SD = 8.26; range = 17–75). The sample was highly educated (see Table 1). 77.2% were in a committed relationship, with equal numbers of women who were not committed who were

Table 1 Demographic variables

| | Women (| nen (N = 3,687) | |
|------------------------------------|---------|-----------------|--|
| Education | % | n | |
| High school diploma or less | 29.6 | 1,091 | |
| University degree | 52.2 | 1,923 | |
| Postgraduate degree | 18.3 | 673 | |
| Marital status | | | |
| Single | 55.6 | 2,051 | |
| Married | 23.1 | 851 | |
| Common-law | 13.2 | 487 | |
| Divorced/Separated | 7.5 | 276 | |
| Widowed | 0.6 | 22 | |
| Relationship status | | | |
| In a committed relationship | 77.2 | 2,845 | |
| Not committed, sexually active | 11.0 | 406 | |
| Not committed, not sexually active | 11.8 | 436 | |
| Length of relationship (n = 2,845) | | | |
| <6 months | 9.4 | 122 | |
| 6 months-1 year | 7.3 | 269 | |
| 1–3 years | 19.6 | 722 | |
| 3-5 years | 12.9 | 475 | |
| 5-10 years | 18.4 | 680 | |
| >10 years | 15.6 | 577 | |
| Religion | | | |
| Catholic (practicing) | 12.1 | 445 | |
| Catholic (observant) | 52.0 | 1,919 | |
| Other religion (practicing) | 2.0 | 73 | |
| Other religion (observant) | 2.4 | 87 | |
| No religion | 31.5 | 1,163 | |
| Sexual orientation | | | |
| Heterosexual | 89.2 | 3,287 | |
| Homosexual | 4.1 | 151 | |
| Bisexual | 5.4 | 198 | |
| Undefined | 1.4 | 51 | |

and were not sexually active. Data on length of relationship and religion are presented in Table 1.

A minority of women were pregnant at the time of participation (3.4%), some women were less than 6 months postpartum (1.5%), and 1.3% were breastfeeding. One hundred twenty-two were postmenopausal (3.3%), and 103 were receiving hormonal therapy (2.8%). Sixteen percent of women had received psychological or psychiatric treatment over the last 2 years and 9.8% were taking antidepressants. A small group of women reported to have suffered sexual abuse at some point in their lives (9.2%).

Materials

The instrument included: (i) a sociodemographic questionnaire (age, educational level, marital, and relationship status, length of relationship, religion, sexual orientation); (ii) an investigator-derived self-report questionnaire of reproductive life cycle and women's sexual response (sexual desire/arousal, erotic fantasies, frequency of orgasm and masturbation, sexual satisfaction)—all questions

had forced-choice response options presented on a Likert scale; and (iii) the CSDS.

The CSDS assesses cues that result in sexual desire in women with 40 items and provides four factors (10 items within each): (i) emotional bonding cues; (ii) erotic/explicit cues; (iii) visual/ proximity cues; and (iv) implicit/romantic cues. Response choices are listed on a 5-point Likert scale: not at all likely (1) to extremely likely (5). Higher scores on CSDS indicate many cues for sexual desire. The reliability is in the acceptable range for sexually healthy women (Cronbach's alpha = 0.87-0.90), as well as for women diagnosed with HSDD (Cronbach's alpha = 0.78– 0.92). The CSDS demonstrated good validity and was able to detect significant differences between women with and without HSDD [13]. The CSDS has good predictive validity for the Female Sexual Function Index [26] desire and arousal domain scores.

Procedure

The original version of the CSDS was translated into Portuguese by three independent persons, fluent in Portuguese and English. The final version was back-translated by a native English speaker. The translation of the English version into Portuguese was semantically equivalent to the English original accordingly to the retro-translation.

A research website was developed. Storage of the complete data collected from the survey was done in a database linked to a server. Security of the database was guaranteed through a username and password. In order to establish the integrity of the website as well as face validity of the items a pilot test was initially carried out. During this pilot, technical errors that were identified were corrected. Passive advertisement and snowball sampling by e-mail were used to recruit participants. The survey was posted on one of Portugal's most popular websites (http://www.sapo.pt) in a female specific section. Some Portuguese blogs written and visited by women where used to enhance the reach of the survey. Recruitment was open from January to July 2008. After logging on to the first webpage where a brief description of the study was available, participants had access to a consent form. Upon consenting to participate, access to the questionnaire was granted. No further information about the participants was collected or saved in order to guarantee confidentiality. No remuneration was provided. Multiple submissions were controlled through the IP

address and any duplicate submissions were deleted.

Statistical Analysis

The factorial validity of the Portuguese CSDS (CSDS-P) was evaluated by means of a Confirmatory Factor Analysis performed with AMOS17 (SPSS Inc, Chicago, IL, USA). The evaluation of the goodness of fit for the four factor model was judged from the χ^2 /d.f., CFI, GFI e RMSEA e $P(RMSEA \le 0.05)$ indices according to Schumacker and Lomax [27]. Failure to confirm the original scale factorial structure led us to perform an Exploratory Factor Analysis based on principal components extraction followed by varimax rotation. We conducted a t-test to compare two independent samples (women in shorter and longer-term relationships) on CSDS-P scores. Predictors of CSDS-P scores were examined using optimal scaling regression analysis. The examined predictor variables included: age, relationship duration, antidepressant use, frequency of orgasm, frequency of masturbation, reported sexual satisfaction, history of sexual abuse, and pregnancy. Cases with missing observations were deleted listwise before any analysis was conducted. t-Tests and optimal scaling regression were performed with SPSS Statistics 17 (SPSS inc, Chicago, IL, USA).

Results

Confirmatory Factor Analysis

The factorial validity of the four factor model of the CSDS-P was evaluated with a confirmatory factor analysis in the sample of 3,687 women. The values of the fit statistics revealed that the proposed four-factor model did not have a close fit to the covariance structure of 40 items of the scale ($\chi^2/d.f. = 24.5$; CFI = 0.793; GFI = 0.754; RMSEA = 0.08; $P[RMSEA \le 0.05] < 0.001$). Considering the poor fit of the four-factor model we proceeded with an Exploratory Factor Analysis to elucidate a better factor structure for the 40 items in the present study sample.

Exploratory Factor Analysis

We conducted an exploratory factor analysis (N = 3,687) based on principal components extraction followed by varimax rotation, which revealed six main factors with eigenvalues over 1.00. Upon inspection of the corresponding scree plot, we extracted five factors that explained 58.3% of the total variance (see Table 2). A sixth factor

included two items from the visual/proximity subscale. These two items were eliminated because this factor, with an eigenvalue of 1.035, only explained 2.6% of the total variance. All factor loadings were limited to values greater than 0.40. Cronbach's coefficient α for this five-factor solution was 0.913. Factor 1 explained 24.4% of the variance and included eight items that showed factor loadings greater than 0.60. This factor included all items from the original subscale visual/proximity cues except those two items that were excluded. Factor 2 included the same 10 items of the original subscale emotional bonding cues and explained 14.6% of the variance. Factor 3 also included the same 10 items of the original subscale romantic/implicit cues and explained 9.5% of the variance. Factor 4 included five items from the original subscale explicit/erotic cues. These items were related to sexual arousal cues, specifically physical and cognitive triggers. On this basis, we labeled this factor explicit/arousal cues. This factor explained 6.0% of the variance and the five items showed factor loadings greater than 0.69. Factor 5 included the other half of the items from the original subscale explicit/erotic cues. These five items were also related sexual arousal cues, particularly to sensorial stimuli (watching, listening, talking, reading). On this basis, we labeled this factor explicit/sensorial cues. This factor explained 3.8% of the variance. Cronbach's coefficient alphas for the five factors of the CSDS are presented in Table 2. All α values were greater than 0.85. Descriptive statistics of the 40 items of CSDS-P are presented in Table 3.

Predictors of Sexual Desire Cues

Predictors of CSDS-P scores were examined using optimal scaling regression analysis. The examined predictor variables included: age, relationship duration, antidepressant use, frequency of orgasm, frequency of masturbation, reported sexual satisfaction, history of sexual abuse, and pregnancy. Age ($\beta = -0.075$; P < 0.001), relationship duration $(\beta = -0.056; P < 0.05)$, frequency of orgasm $(\beta =$ 0.059; P < 0.001), frequency of masturbation ($\beta =$ 0.172; P < 0.001), sexual satisfaction ($\beta = 0.099$); P < 0.001), and not taking antidepressants ($\beta =$ 0.047; P < 0.05), were significant predictors of the CSDS-P scores. That is, older women and women in longer-term relationships indicated lower total scores for the CSDS-P. Additionally, women who masturbated and reached orgasm easily had higher scores for CSDS-P (Table 4). History of sexual

Table 2 Factor Loadings, communalities, eigenvalue, variance explained and Cronbach's alpha following exploratory factor analysis with varimax rotation on the 40 scale items

| | Factor | | | | | |
|--|---------------|-------|--------------|-------|-------|---------------|
| Item | 1 | 2 | 3 | 4 | 5 | Communalities |
| Visual/Proximity cues (8 items) | | | | | | |
| Seeing/Talking with someone powerful | 0.854 | | | | | 0.750 |
| Seeing/Talking with someone famous | 0.842 | | | | | 0.749 |
| Seeing/Talking with someone wealthy | 0.819 | | | | | 0.710 |
| Being in close proximity with attractive people | 0.742 | | | | | 0.680 |
| Seeing someone who is well-dressed or "has class" | 0.734 | | | | | 0.593 |
| Watching someone engage in physical activities | 0.707 | | | | | 0.596 |
| Seeing a well-toned body | 0.686 | | | | | 0.605 |
| Seeing someone act confidently | 0.652 | | | | | 0.730 |
| Emotional bonding cues (10 items) | | | | | | |
| Your partner is supportive of you | | 0.817 | | | | 0.679 |
| Feeling a sense of security in your relationship | | 0.789 | | | | 0.641 |
| Feeling protected by a partner | | 0.774 | | | | 0.643 |
| Talking about the future with your partner | | 0.749 | | | | 0.630 |
| Your partner expresses interest in hearing about you | | 0.723 | | | | 0.593 |
| Experiencing emotional closeness with a partner | | 0.712 | | | | 0.570 |
| Feeling a sense of commitment from a partner | | 0.638 | | | | 0.428 |
| Feeling a sense of love with a partner | | 0.630 | | | | 0.442 |
| Feeling protective of a partner | | 0.611 | | | | 0.499 |
| Your partner does "special" or "loving" things for you | | 0.602 | | | | 0.448 |
| Romantic/Implicit cues (10 items) | | | | | | |
| Watching a sunset | | | 0.784 | | | 0.685 |
| Having a romantic dinner with a partner | | | 0.753 | | | 0.648 |
| Watching a romantic movie | | | 0.722 | | | 0.657 |
| Touching your partner's hair or face | | | 0.695 | | | 0.620 |
| Laughing with a romantic partner | | | 0.652 | | | 0.587 |
| Giving or receiving a massage | | | 0.630 | | | 0.487 |
| Dancing closely | | | 0.622 | | | 0.521 |
| Being in a hot tub | | | 0.529 | | | 0.408 |
| Smelling pleasant scents | | | 0.521 | | | 0.457 |
| Whispering into your partner's ear or having your partner whisper | | | 0.516 | | | 0.522 |
| into your ear | | | 0.010 | | | 0.022 |
| Explicit/Arousal cues (5 items) | | | | | | |
| You experience genital sensations | | | | 0.767 | | 0.658 |
| Hearing your partner tell you that he or she fantasized about you | | | | 0.744 | | 0.659 |
| Sensing your own or your partner's wetness, lubrication, or erection | | | | 0.738 | | 0.614 |
| Asking for or anticipating sexual activity | | | | 0.708 | | 0.581 |
| Having a sexual fantasy (e.g., having a sexual dream, daydreaming) | | | | 0.698 | | 0.615 |
| Explicit/Sensorial cues (5 items) | | | | 0.030 | | 0.015 |
| Watching an erotic movie | | | | | 0.810 | 0.739 |
| Watching or listening to other people engage in sexual behavior/activity | | | | | 0.794 | 0.711 |
| Reading about sexual activity (e.g., pornographic magazine) | | | | | 0.769 | 0.704 |
| Watching a strip tease | | | | | 0.732 | 0.656 |
| Talking about sexual activity or "talking dirty" | | | | | 0.732 | 0.474 |
| Eigenvalue/Variance reliability | | | | | 0.432 | 0.474 |
| Eigenvalue | 9.76 | 5.84 | 3.80 | 2.39 | 1.51 | |
| Variance explained (%) | 24.4 | 14.6 | 9.5 | 6.0 | 3.8 | |
| . , | 24.4 0.908 | 0.891 | 9.5 0.882 | 0.854 | 0.863 | |
| Reliability (Cronbach alfa) α (38 items) = 0.913 | 0.908 | 0.091 | 0.002 | 0.004 | 0.003 | |

Factor loadings < 0.40 have been suppressed.

Item 29 (Seeing/talking with someone intelligent) and item 30 (Flirting with someone or having someone flirting with you) were eliminated.

abuse and being pregnant did not predict CSDS-P scores.

CSDS and Relationship Duration

Our goal was to explore how women in shorter and longer-term relationships differ in CSDS-P subscales. Analyses were conducted to compare a group of women in a relationship for less than three years (n = 1,050) and another group of women committed for more than 5 years

(n = 831). Inclusion criteria for both groups were: women who reported getting sexually aroused easily, not taking anti-depressants, not being pregnant or breastfeeding, and more than 6 months postpartum. Analyses showed that women in longer-term relationships had significantly fewer cues for sexual desire (M = 124) compared to women in shorter-term relationships (M = 128), t(1,879) = 3.7, P < 0.001. Women in shorter-term relationships had significantly more romantic/

Table 3 Descriptive statistics of CSDS-P items

| Item | Min | Max | Median | Skewness | Kurtosis |
|------|-----|-----|--------|----------|----------|
| 1 | 1 | 5 | 5 | -1.591 | 2.650 |
| 2 | 1 | 5 | 4 | -1.053 | 0.711 |
| 3 | 1 | 5 | 4 | -1.102 | 1.068 |
| 4 | 1 | 5 | 4 | -0.805 | 0.532 |
| 5 | 1 | 5 | 4 | -0.695 | -0.404 |
| 6 | 1 | 5 | 4 | -0.969 | 0.759 |
| 7 | 1 | 5 | 4 | -0.386 | -0.675 |
| 8 | 1 | 5 | 4 | -0.807 | 0.085 |
| 9 | 1 | 5 | 5 | -1.412 | 2.294 |
| 10 | 1 | 5 | 3 | -0.208 | -0.855 |
| 11 | 1 | 5 | 3 | -0.075 | -1.139 |
| 12 | 1 | 5 | 3 | 0.027 | -0.987 |
| 13 | 1 | 5 | 2 | 0.508 | -1.003 |
| 14 | 1 | 5 | 3 | -0.304 | -0.649 |
| 15 | 1 | 5 | 2 | 0.549 | -0.705 |
| 16 | 1 | 5 | 4 | -1.099 | 1.078 |
| 17 | 1 | 5 | 4 | -0.482 | -0.392 |
| 18 | 1 | 5 | 4 | -0.967 | 0.649 |
| 19 | 1 | 5 | 4 | -0.735 | -0.053 |
| 20 | 1 | 5 | 4 | -0.906 | 0.574 |
| 21 | 1 | 5 | 2 | 1.021 | 0.148 |
| 22 | 1 | 5 | 1 | 1.677 | 2.366 |
| 23 | 1 | 5 | 2 | 0.693 | -0.498 |
| 24 | 1 | 5 | 1 | 1.871 | 3.338 |
| 25 | 1 | 5 | 2 | 0.652 | -0.476 |
| 26 | 1 | 5 | 1 | 2.478 | 6.793 |
| 27 | 1 | 5 | 1 | 1.365 | 1.317 |
| 28 | 1 | 5 | 2 | 0.820 | -0.401 |
| 29 | 1 | 5 | 2 | 0.511 | -0.933 |
| 30 | 1 | 5 | 3 | 0.079 | -0.953 |
| 31 | 1 | 5 | 4 | -0.528 | -0.222 |
| 32 | 1 | 5 | 4 | -0.470 | -0.363 |
| 33 | 1 | 5 | 3 | -0.052 | -0.749 |
| 34 | 1 | 5 | 4 | -0.503 | -0.190 |
| 35 | 1 | 5 | 3 | -0.144 | -0.732 |
| 36 | 1 | 5 | 2 | 0.327 | -1.002 |
| 37 | 1 | 5 | 3 | -0.196 | -0.652 |
| 38 | 1 | 5 | 4 | -0.725 | 0.015 |
| 39 | 1 | 5 | 4 | -0.498 | -0.457 |
| 40 | 1 | 5 | 4 | -0.400 | -0.799 |

implicit and explicit/arousal cues compared with women in longer-term relationships (Table 5).

Discussion

The purpose of the present study was to analyze the psychometric properties of the CSDS in a community sample of Portuguese women and to

Table 4 Predictors of CSDS-P scores

| | Beta (SE) | Sig. |
|------------------------------|----------------|---------|
| Age | -0.074 (0.020) | < 0.001 |
| Relationship duration | -0.055 (0.025) | 0.009 |
| Taking antidepressants | 0.051 (0.018) | 0.006 |
| Frequency of orgasm | 0.059 (0.020) | < 0.001 |
| Frequency of masturbation | 0.172 (0.019) | < 0.001 |
| Reported sexual satisfaction | 0.099 (0.020) | < 0.001 |
| Had suffering sexual abuse | 0.016 (0.014) | 0.232 |
| Pregnancy | 0.021 (0.016) | 0.191 |

examine the influence of relationship duration on women's cues for sexual desire.

A confirmatory factor analysis revealed a poor fit of the four-factor model of the CSDS in this sample of 3,687 women. The subsequent exploratory factor analysis elucidated a fairly different factor structure for the 40 items: three subscales remained consistent with the original CSDS: (visual/proximity; emotional bonding; romantic/ implicit), and a fourth subscale (explicit/erotic) was divided into two. Factors 4 and 5 in this solution corresponded to a factor which McCall and Meston [13] labeled as explicit/erotic cues and we labeled as explicit/arousal (Factor 4) and explicit/ sensorial (Factor 5), respectively. Thus, results revealed a five-factor solution, which explained 58.3% of the total variance in the sample. This five-factor structure of the CSDS-P demonstrated good reliability (Cronbach's α for total scale = 0.913).

Interestingly, the items of Factors 4 and 5 were strongly related to sexual arousal, specifically sensorial triggers of factor 5 (e.g., watching, reading, listening, talking). Factor 4 included items that may have overlapped with sexual arousal. The item "You experience genital sensations" is an expression explicitly connected to arousal as well as "Sensing your own or your partner's wetness, lubrication or erection," with both items included on factor 4. Therefore, these physical/sensorial stimuli of sexual arousal constitute important cues for sexual desire for women. This is supported by extensive empirical evidence showing the importance of sensory cues in sexual response (see Graham, for review [28]) and clinical experience and demonstrates overlap in the experiences of sexual desire and arousal when considering the overall sexual response. Desire and arousal have been described as being "two faces of the same coin." The observation that women may not separate "sexual desire" from "arousal" is consistent with previous studies [16,29-31]. Moreover, the overlap between arousal and desire was recently highlighted in a critical review of the DSM-IV-TR diagnostic criteria and the combination of desire and arousal into one disorder with polythetic criteria was recommended [9,28]. Our finding that awareness of arousal cues sexual desire is consistent with this proposal.

We also compared women in shorter-term and longer-term relationships on CSDS-P total and subscale scores. We narrowed the sample of interest (n = 1,881) to exclude women with variables known to negatively influence sexual desire (e.g.,

Table 5 CSDS-P in short and longer-term relationships

| | Shorter-term relationships ≤ 3 years $n = 1,050$ mean (SD) | Longer-term relationships > 5 years n = 831 mean (SD) | P | t |
|----------------------------|---|---|---------|-------|
| CSDS Factor | | | | |
| 1: Visual/Proximity cues | 14.2 (6.2) | 13.8 (5.8) | 0.147 | 1.44 |
| 2: Emotional bonding cues | 40.4 (6.9) | 39.4 (7.0) | 0.003 | 2.98 |
| 3: Romantic/Implicit cues | 34.1 (7.6) | 32.3 (7.8) | < 0.001 | 4.9 |
| 4: Explicit/Arousal cues | 20.0 (3.9) | 19.5 (3.8) | 0.027 | 2.21 |
| 5: Explicit/Sensorial cues | 14.4 (5.0) | 14.5 (5.1) | 0.942 | -0.07 |
| CSDS total score | 128.0 (20.2) | 124.5 (20.1) | < 0.001 | 3.7 |

CSDS = Cues for Sexual Desire Scale, CSDS-P = Cues for Sexual Desire Scale-Portuguese version.

arousal difficulties, taking anti-depressants, being pregnant or breastfeeding, and less than 6 months postpartum). Women in longer-term relationships (i.e., more than five years) reported fewer cues that trigger sexual desire compared to women in shorter-term relationships (less than 3 years). This suggests that encouraging women to consider newer and varied cues that might enhance desire might be one means of targeting low desire concerns. Moreover, demystifying the idea of "initial sexual desire" as a sine qua non condition to engage in sexual activity might also target women's difficulties related to loss of untriggered feelings of desire. Sexual arousal and satisfaction are not exclusively determined by the presence of "initial sexual desire." Thus, women must not falter by the diminished cues that target sexual desire, but should be willing to engage sexually considering that desire may possibly come after arousal. Therapeutic intervention can also encourage women to not only focus on specific cues to trigger sexual desire, but to be more proactive in the pursuit of arousal and sexual satisfaction. Indeed, it has been found that women with and without arousal difficulties would like to receive more adequate sexual stimulation from their partners to facilitate arousal [16].

These findings related to the negative influence of relationship duration on sexual desire are consistent with previous studies [15–19]. However, relationship duration is not included in the diagnostic framework of sexual dysfunction diagnosis. Research has revealed that relationship duration is an important contextual variable thought to influence women's sexual desire. Consequently, relationship duration should be considered in making a diagnosis of HSDD. Specifically, given relationship-duration related differences in potential arousability, the diagnosis of HSDD should take into account normative declines in sexual desire. Of note, proposed criteria for sexual desire

and arousal disorders in DSM-V suggest including "relationship factors" as a dimensional specifier to capture this variable [9,28].

A secondary analysis was conducted to examine predictor variables of the CSDS-P total score. Variables examined included: age, relationship duration, taking antidepressants, frequency of orgasm, history of sexual abuse, frequency of masturbation, reported sexual satisfaction, and pregnancy. Results of regression analyses revealed that all these variables predicted scores on CSDS-P except history of sexual abuse and being pregnant. Consistent with prior research, age and antidepressant usage are linked to sexual desire [1,32] as well as relationship duration [15,33]. Being pregnant did not predict CSDS-P total scores, that is, pregnancy did not affect the total number of cues that trigger sexual desire.

Considering the influence of contextual variables in women's sexual interest as well as large individual differences, we believe that the CSDS can be beneficial in therapeutic settings to help identify cues that do and do not facilitate sexual desire in women with clinically diagnosed desire difficulties. Differences in cues that trigger sexual desire among women should be considered in order to promote more comprehensive intervention protocols, but also to avoid pathologizing of a couple's sexual desire discrepancies. Individual variation should be considered regarding the diversity of cues to trigger the desire for sexual activity. Moreover, the stimuli that used to work in a particular life stage, might not be as effective anymore in a different moment of woman's life. Likewise, some cues that used to be meaningful with a particular partner might not be important with a different partner in a different relationship context or commitment level. Regarding therapeutic intervention in HSDD, it can be useful to identify those cues and stimuli that make a woman move towards a willingness to engage in sexual activity.

There are limitations in this study that must be considered. The sample is not representative of all Portuguese women since the use of an Internet survey preselected more highly educated women. Additionally, analyses of concurrent validity were not performed. Nonetheless, the findings contribute to a growing body of literature aiming to disentangle the complexity of women's desire. The findings may also be translated for use in the clinical setting to encourage women with HSDD to deliberately see out and use effective cues that might awaken a subdued sexual desire.

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