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Assessing Cognitive Appraisals Related to Sexual Function: A Scenario-Based Approach

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Abstract
Cognitive factors play an important role in the etiology and maintenance of sexual difficulties. To date, research has mostly relied on self-report measures to assess negative cognitions related to low sexual function. To overcome the limitations of self-report questionnaires, a series of open-ended, ambiguous sexual scenarios were developed and presented to participants ($N = 600$, $M_{age} = 34.2$ years), who were asked to generate an ending by entering a continuation for each scenario. Valence of completed scenarios was rated by the participants, and scenario endings were coded by two independent raters on three dimensions, namely reference to sexual problems, sexual communication, and the use of sexually explicit language. Sexual function was assessed with the Female Sexual Function Index and the International Index of Erectile Function. Multiple regression analyses were performed to assess whether the scenario-based task was associated with sexual function above and beyond other predictors (e.g., sexual distress). Individuals with lower sexual function rated the completed scenarios more negatively, and their endings included more references to problems related to low sexual function. In women with low sexual function, fewer endings included sexual communication with a partner or sexually explicit language. Our findings suggest that individuals with low sexual function appraise ambiguous sexual situations more negatively than other individuals. Future studies may investigate whether such biases can be experimentally manipulated and whether changes in cognitive biases may, in turn, lead to improvements in sexual function.

Keywords Sexual problems · Sexual function · Cognitive biases · Cognitive appraisals · Indirect measures · Scenario task

Introduction

To begin this article with a thought experiment, we would like the reader to imagine, just for a second, the following situation. Your partner has been away for a few days and on their return you both get intimate. Afterward, you lie together in silence, no one speaks for a few minutes, and you let your thoughts wander. As you turn around and look into your partner's eyes, you realize that…. Please take note of the first thought that pops into your mind. How does this situation continue in your imagination? When you look into partner's eyes, would you see something positive or negative? Would your partner look at you full of love and satisfaction, or rather frustrated, guilty, or sad? Would you imagine something explicitly sexual or not? These are a few illustrations of typical cognitions and appraisals relevant in the domain of sexuality or, more precisely, sexual function. This article introduces a novel, scenario-based approach to capture such cognitive appraisals (Beck & Barlow, 1986; Janssen, Everaerd, Spiering, & Janssen, 2000) related to sexual function in women and men, using an open-ended scenario task assessing individuals' idiosyncratic appraisals of ambiguous sexuality-related situations.

Assessing Sexual Cognitions with Self-Report Measures

Cognitive processes are relevant for the perception and evaluation of sexual stimuli and important correlates of sexual problems such as low desire for sex, arousal difficulties, or problems with reaching orgasm (Janssen et al., 2000). Sexuality-related cognitions can be measured via direct, self-report measures, targeting dysfunctional sexual beliefs (Nobre & Pinto-Gouveia, 2006) or maladaptive cognitive

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schemas (Nobre & Pinto-Gouveia, 2009). Such cognitions have been found to be associated with sexual problems in women and men. As researchers have increasingly acknowledged the importance of spontaneous thoughts that occur during sexual activity for sexual outcomes, a questionnaire has been developed to assess thoughts that may be present during sexual activity (Nobre & Pinto-Gouveia, 2008). Various studies found significant correlations between intrusive thoughts during sex, emotions, and sexual arousal. Further, it has been shown that erection concerns ("I must be able to have intercourse") and failure anticipation thoughts ("I'm condemned to failure") among men as well as disengagement thoughts among women ("When will this be over?") were more prevalent among participants with sexual problems than among sexually healthy participants. Findings were interpreted as supporting the hypothesis that cognitive, emotional, and behavioral dimensions of sexual function are closely linked and that sexual problems are characterized by a combination of dysfunctional or negative thoughts, depressive mood, and low subjective sexual arousal (Nobre & Pinto-Gouveia, 2008). Negative cognitive appraisals and emotional responses to sexual difficulties are often subsumed under the concept of sexuality-related personal distress which can be measured with questionnaires such as the Female Sexual Distress Scale (FSDS; Derogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). Sexual distress includes negative cognitions (e.g., guilt, worry, inadequacy) or emotions (e.g., anger, embarrassment, unhappiness) with respect to one's sexual life in general, sexual problems, or sexual relationships (Derogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008; Derogatis et al., 2002). Sexual distress is strongly negatively related to sexual function and encompasses how individuals cognitively evaluate their sexual life (Carpenter et al., 2015). To conclude, there is theoretical and empirical evidence supporting the role of cognitions in sexual problems across genders, and there are validated self-report measures to assess such cognitive appraisals.

Limitations of Self-Report Measures

While research has underlined the importance of cognitive processes related to sexual function and dysfunction, the methods used in these studies only allow for an assessment of thoughts that are consciously experienced, remembered, and recalled. That is, self-report questionnaires typically require participants to decide to which degree a certain concept of interest applies to them, for example, by indicating whether they disagree or agree with a series of statements. Such direct measures (De Houwer, 2006) are easy to administer, but scores may be affected by demand effects; i.e., individuals may respond to meet perceived expectations by an experimenter or may overgeneralize negative (or positive) experiences (Hirsch, Meeten, Krah, & Reeder, 2016). Another limitation of questionnaires is that participants are presented with pre-defined statements and/or a forced choice answering format, which may not be representative of their own cognitions related to sexuality. In other words, most quantitative questionnaires do not necessarily allow the expression of idiosyncratic appraisals that may be personally relevant for an individual.

Assessing Sexual Cognitions with Indirect Measures

To overcome some of the shortcomings of direct measures, indirect measures, which are not relying on self-report, have been applied to the area of emotional psychopathology (Roefs et al., 2011). As of yet, many indirect measures used to assess appraisals related to sexual problems are computerized and based on response times (e.g., van Lankveld, Bandell, Bastin-Hurek, van Beurden, & Araz, 2018), eye movements or pupil dilation (Lykins, Meana, & Minimi, 2011), or facial electromyogram (Borg, de Jong, & Schultz, 2010). The assumption that indirect measures may have predictive validity for sexual function is, for example, supported by findings concerning the single target implicit association test (ST-IAT; Karpinski & Steinman, 2006). The ST-IAT has been used to measure the extent to which a target category (e.g., sexual stimuli) is associated with two attribute categories (e.g., positive vs. negative, disgusting vs. nice; for more information on the IAT, see Greenwald, McGhee, & Schwartz, 1998). Using the ST-IAT in women with and without Hypoactive Sexual Desire Disorder (HSDD; American Psychiatric Association, 2013), implicit associations between sexual pictures and positive words were weaker in women with HSDD compared to healthy controls. Further, women with sexual pain conditions showed stronger associations between pictures of vaginal penetration and feelings of disgust, but not feelings of threat than sexually healthy women (Borg et al., 2010). In another study, van Lankveld et al. (2018) found that women with sexual problems showed negatively biased associations when erotic pictures were paired with the two attribute categories of wanting (vs. not wanting) but not when implicit liking (vs. not liking) of the stimuli was assessed. Using a similar ST-IAT in men, those with lower sexual function showed stronger positive automatic associations with erotic stimuli than men without sexual dysfunctions (van Lankveld et al., 2015, 2018). To summarize, studies using the ST-IAT, which can be seen as an example of commonly used response time-based indirect measures, often showed only small and sometimes counterintuitive correlations with self-report measures of sexual functioning. In addition, the limitation of self-report questionnaires concerning the neglect of idiosyncratic appraisals also applies to the ST-IAT, and in fact

to other indirect measures that are based on response times (Brauer et al., 2012).

Assessing Sexual Cognitions with a Scenario-Based Approach

The goal of the present study was to adapt and validate a novel, scenario-based paradigm (De Houwer, 2006) already used in other areas of psychopathology such as alcohol use or abuse (Woud et al., 2014; Woud, Fitzgerald, Wiers, Rinck, & Becker, 2012), social anxiety (Hertel, Brozovich, Joormann, & Gotlib, 2008), eating disorders (Cooper, 1997), and posttraumatic stress (Woud, Cwik, de Kleine, Blackwell, & Margraf, 2018) to assess appraisals related to sexual function. In general, this task includes a series of ambiguous, open-ended descriptions of situations that are related to the psychopathology in question and that can be appraised in different ways. Previous studies showed that the more dysfunctional continuations in response to disorder-specific, ambiguous scenarios were generated, the higher the levels of psychopathology measured by self-report questionnaires (e.g., Woud et al., 2012, 2014). As participants' appraisals are inferred from their performance on the scenario task, i.e., by the number of endings that represent an appraisal that is deemed dysfunctional in the light of the disorder in question, this approach can be thought of as indirect as the potential outcomes of interest are not directly enquired about (De Houwer, 2006). Although other text-based methods such as expressive writing have been used successfully to assess sexuality-related cognitions such as cognitive self-schemas (Kilimnik, Boyd, Stanton, & Meston, 2018), this scenario-based approach has not been applied to this area of research. To adapt this approach to the area of sexual function, a series of ambiguous, open-ended descriptions of sexuality-related situations was developed. An advantage of this approach in the context of sexual problems is the opportunity to trigger and analyze idiosyncratic endings generated by participants in response to different aspects of interest. Using this task, we first investigated whether participants' own evaluation of completed scenarios as negative or positive was associated with their sexual function levels. As self-rated valence of scenarios might be influenced by participants' overall sexual satisfaction, three additional dimensions of scenario endings were rated externally. Raters examined whether endings included any reference to sexual problems (e.g., ejaculating too early, having low desire).

In addition, the explanatory value of two dimensions not directly targeting sexuality-related appraisals but rather two behavioral aspects relevant to sexual function was explored: Sexual communication and the usage of sexually explicit language. Being able to communicate sexual wishes or concerns to a sexual partner is, for example, associated with better sexual function and sexual satisfaction in women and men (Byers, 2011; Velten & Margraf, 2017). Previous studies have assessed sexual communication with self-report measures that ask participants to recall how frequently certain sexual matters are discussed. These self-reports can be biased when participants who are, for example, generally very satisfied or unsatisfied with their partnership over- or underestimate the frequency of sexual communication. Therefore, the scenario task offers a unique way to explore how often participants' spontaneous responses include references to *talking* instead of *doing*.

Sexually explicit language refers to concrete descriptions of genitalia or sexual activities. Using specific language instead of vague, flowery, or technical terms when discussing sexual matters is important to, for example, comprehensively educate people on sexual health including sexual dysfunctions (Kohler, Manhart, & Lafferty, 2008). While one could argue that speaking openly about sexuality-related topics is important for a pleasurable sexuality, the use of such language has not been investigated with respect to sexual function. The relationship between openly discussing sexual activities and sexual behaviors has been, however, investigated in the context of sexting, defined as sending or receiving of sexually explicit text messages, photographs, or videos through electronic means (Klettke, Hallford, & Mellor, 2014). While sexting has not been investigated with respect to sexual function, studies have shown that individuals who engage in sexting are more sexually active (Gordon-Messer, Bauermeister, Grodzinski, & Zimmerman, 2013) and report greater pleasure in sex (Ferguson, 2011). Above and beyond the sexting phenomenon, it seems likely that frequent and casual use of sexually explicit language may be indicative of a greater comfort with sexual topics which may be related to sexual function.

Study Aims

The goal of the present study was to assess the value of a scenario-based approach for the explanation of sexual function in women and men. It was hypothesized that individuals who rated sexual scenarios including their self-created endings as more negative would report lower sexual function. The number of scenario endings that included references to sexual problems, as identified by external raters, should be associated with lower sexual function. In addition, exploratory analyses were conducted to examine whether the number of scenario endings that included references to verbal, sexual communication with a partner and a more frequent use of sexually explicit language would be associated with higher sexual function. To warrant further investigation, the scenario task would not only need to correlate with self-reports of sexual function, but it would need to explain sexual function above and beyond self-report questionnaires assessing affective or cognitive responses to sexual difficulties (i.e., sexual distress). Thus, two separate

hierarchical regression analyses for women and men were conducted to evaluate whether the dimensions of the scenario task added to the explanation of sexual function above and beyond sexual distress.

Method

Participants

Participants for the online survey were recruited through multiple channels (e.g., e-mail listservs, postings on university webpage, social media, online discussion boards) to increase sample diversity. No eligibility criteria were defined except that participants were required to be 18 years or older. Of the 600 participants (M_{age} = 34.22, SD 12.30) whose data were analyzed for this study, 401 identified as female, 190 as male, and nine as other. Of these nine, five participants identified as transmen, one as a trans-woman, and three as intersexual. Three-hundred eighty-three (63.8%) participants reported being in a committed partnership or married, 28 (4.7%) were in an open non-monogamous relationship, 157 (26.1%) indicated being single, and 32 (5.2%) entered a different relationship status. Forty-seven participants (7.8%) reported not having been sexually active with a partner in the last year. Concerning sexual orientation, 304 (50.7%) and 169 (28.2%) identified as exclusively or predominantly heterosexual, 40 (6.7%) identified as bisexual, while 20 (3.3%) and 50 (8.3%) identified as predominantly or exclusively homosexual. Asexuality as a sexual orientation was endorsed by three (0.5%) participants, and 14 (2.3%) chose to enter a different sexual orientation such as pansexual. Most participants were highly educated with 201 (37.1%) individuals finishing high school and additional 282 (51.8%) reporting a college degree. Most participants were working either full time (n = 247; 45.7%) or part time (n = 80; 14.8%) or were enrolled as college students (n = 154; 28.5%).

Procedure

On the first page of the survey, visitors were informed about the sensitive content of the study. Those interested in participating were encouraged to click on one of four study links depending on their gender and the gender of (most of) their sexual partners. They were also informed that surveys differed only with respect to gender-specific questionnaires (e.g., for sexual functioning) and in the wording of certain scales. Our goal was to match the gender of a sexual partner described in some of the open-ended scenarios to the actual gender of the participants' partner. This was necessary as German does not have a gender-neutral word for "partner." Visitors were also informed that they should choose the version of the survey that they feel most comfortable with and that a more nuanced assessment of sexual orientation would be presented as part of the survey. Information about the voluntariness and the possibility of withdrawing from the study at any time without negative consequences was presented, and participants were required to give their informed consent online in order to proceed to the questionnaire.

Participants provided some demographic information (e.g., age) and were then presented a total of 21 open-ended scenarios with the instruction to imagine the situations and complete them with their own words. Four to five situations were presented on a single webpage; the pages were presented in randomized order. Following this part of the survey, completed scenarios were once again presented to participants who were then instructed to rate these situations in terms of valence and vividness. Finally, the remaining study questionnaires were presented.

The study Web site had 1888 visitors between June and November 2017. Consent was provided, and the first study page was visited 1185 times. All scenarios were completed by 642 participants; 600 of them had valid data (i.e., no nonsense answers) and were included in this study. As completing the open-ended scenarios was the most time-consuming part of the survey, many participants who finished this part also provided complete data on the remaining questionnaires (n = 541). No financial incentive was provided for participation. To increase motivation to participate, individuals were offered anonymous feedback regarding their sexual function directly after the completion of the survey. On the last page, a total score of the FSFI (Rosen et al., 2000) was presented to female and a total score of the IIEF (Rosen et al., 1997) was presented to male participants. In case that a participant felt the need to talk about a potential sexual problem, additional information was provided about the interpretation of the score with the advice to contact a physician should further questions arise.

Measures

Sexual Function

Because of the gender specificity of sexual function, different scales were used to measure sexual function among women and men. The Female Sexual Function Index (FSFI; Rosen et al., 2000) was used to assess sexual function in women. The FSFI consists of 19 items and six subscales (i.e., desire, arousal, lubrication, orgasm, satisfaction, and pain) that are answered on scale from 0 or 1 to 5, with higher scores indicative of better sexual function. Subscales can be combined into one total score, ranging from 2 to 36 points, with a clinical cutoff of 26.55 (Wiegel, Meston, & Rosen, 2005); women scoring below this value are deemed at risk for sexual difficulties. The validation of the German FSFI yielded good psychometric properties (Berner, Kriston, Zahradnik, Härter,

& Rohde, 2004). In the present study, internal consistency of the total scale was excellent with $\alpha = .95$.

Men's sexual function was assessed with the 15-item version of the International Index of Erectile Function (IIEF; Rosen et al., 1997). Items were answered on a scale from 0 or 1 to 5 with higher scores indicating better sexual function. A total score of men's sexual function can be calculated ranging from 5 to 75. In a validation study of the IIEF, a value of 53 was an appropriate cutoff score to identify men with erectile dysfunction (Wiltink, Hauck, Phädayanon, Weidner, & Beutel, 2003). Good psychometric properties of the IIEF have been found in various populations and language versions (Rosen, Cappelleri, & Gendrano, 2002). In this study, internal consistency was excellent with Cronbach's $\alpha = .90$.

Sexual Distress

Among women, sexuality-related personal distress was assessed with the 13-item Female Sexual Distress Scale Revised (FSDS-R; Derogatis et al., 2008). The FSDS-R asks women how often they experience negative cognitions (e.g., guilt, worry, feelings of inadequacy) or emotions (e.g., anger, embarrassment, unhappiness) with respect to their sexual life in general, sexual problems, or sexual relationships. Items were rated on 5-point scale ranging from *never* to *always*, with a total score ranging from 0 to 52, with higher scores indicating more distress. The FSDS-R has shown good discriminant validity, high test–retest reliability, and high internal consistency (Derogatis et al., 2008). Internal consistency in the present sample was excellent with Cronbach's $\alpha = .93$.

Among men, personal distress related to sexuality was assessed with the Sexual Quality of Life Scale for Men (SQoL-M; Abraham, Symonds, & Morris, 2008). The SQoL-M includes 11 items that are answered on a 6-point Likert scale ranging from 1 (*completely agree*) to 6 (*completely disagree*). To increase comparability across genders, items were reverse coded in this study. Total scores are ranging from 11 to 66 with higher values indicating a lower sexual quality of life which corresponds to higher sexual distress. The SQoL-M has been validated in a sample of men with early ejaculation and has shown good construct validity and test–retest reliability (Abraham et al., 2008). Cronbach's α in the present sample was .90. While the concepts of sexuality-related distress and sexual quality of life may not be redundant, both questionnaires aim to assess consequences of sexual difficulties on an emotional and cognitive level. Overlap between the FSDS-R and SQoL-M is significant with many items targeting identical (SQoL-M: When I think about my sexual life, I feel angry vs. FSDS-R: Angry about your sex life) emotions or covering comparable cognitive responses (SQoL-M: When I think about my sexual life, I feel guilty vs. FSDS-R: Guilty about sexual difficulties). In addition, all items in both questionnaires are asking about negative, not positive emotional or cognitive responses and refer to both sexual difficulties as well as sexual life in general.

Scenario Task

Scenario Generation

Sixteen sexual and five neutral scenarios were created for this study. All scenarios included three lines and were followed by ellipses or colons. Participants received the following instructions: "The following pages describe a total of 21 different situations. All situations are incomplete, meaning that endings are still missing. Please imagine all situations before your inner eye, even if you have not yet experienced the situation yourself. Please complete the situations so that a meaningful and grammatically correct sentence is produced. We are interested in your first, spontaneous response. There are no right or wrong answers." The sexual scenarios were designed to reflect three aspects relevant to sexual function across genders. They were created based on previous studies using a similar paradigm (e.g., Woud et al., 2018) and clinical case vignettes of patients with sexual dysfunctions by the first author. All scenarios were reviewed by the coauthors and piloted in a sample of students who provided additional feedback on whether the scenarios were comprehensible and provided the opportunity for differential and idiosyncratic interpretations, without grammatical restrictions. Five scenarios described situations in which the person or their partner was asked about the satisfaction with their sexual life in general (Scenario 1, 10, and 20) or their satisfaction with a recent sexual encounter (Scenario 3, 8).

In line with self-report questionnaires of sexual satisfaction (Mark, Herbenick, Fortenberry, Sanders, & Reece, 2014), these scenarios were created to elicit a general cognitive–emotional evaluation of one's sexual life without explicitly asking participants to do so. Four scenarios (Scenario 2, 5, 16, and 19) described a sexual difficulty (e.g., noticing a lack of arousal). Thus, it was anticipated that participants' continuations would reflect how they or their partner would deal with such a problem. Those scenarios were adapted from sexual situations that were developed as part of the questionnaire of cognitive schema activation in sexual context (Nobre & Pinto-Gouveia, 2009). The remaining scenarios included descriptions of sexual situations or a partner's attempts to initiate a sexual encounter (Scenario 6, 9, 12, 13, 14, 17, and 21) and also provided ambiguous information (e.g., feeling tension or a faster heartbeat during sexual activity or noticing changes in one's sexual life) that can be interpreted in a positive, neutral, or negative way. The neutral scenarios were added to assess general, non-sexual interpretation tendencies. Similar scenarios were used by Woud et al. (2018) and included ambiguous situations (e.g., noticing a certain smell in a restaurant, reading a book that was recommended by

someone) that can be completed in a positive (e.g., liking the smell or the book) or negative way. On average, sexual and neutral scenario beginnings consisted of 35.5 and 26.8 words, respectively. Participant continuations for sexual and neutral scenarios included 6.19 (SD 2.27, range = 1.75–14.94) and 6.01 (SD 2.67, range = 2.20–14.20) words, respectively. To prevent participants from entering very complex—and potentially difficult to rate—answers, continuations were restricted to a maximum of 100 characters per scenario. Table 1 shows a list of all scenarios used in this study. The original German wording can be obtained by the authors.

Participants' Scenario Ratings

To assess how positively or negatively participants evaluated both the sexual and neutral scenarios and how vividly they were able to imagine the situations, each participant was presented with their completed scenarios again and was asked to rate all scenarios including their continuation in terms of valence and vividness on two 5-point Likert scales from *very negative* to *very positive* and from *very low vividness* to *very high vividness*.

External Scenario Ratings

In addition, continuations of all sexuality-related scenarios were rated on three dimensions by two trained Masters-level psychology students. As 600 participants answered 16 sexual scenarios, a total of 57,600 ratings were conducted. To practice the scoring, the students first rated a small number of scenarios individually and then discussed their ratings to clarify and check their understanding of the coding criteria. To ensure a high correspondence of the two raters, a list of examples for each coding dimension was created together with the first author.

The first dimension referred to the description of any sexual difficulty or problem and was rated as 0 (*no*) and 1 (*yes*). Endings that included specific descriptions of sexual problems (e.g., I came too early, I didn't get an erection) as well as potentially maladaptive behavior patterns (e.g., I fake an orgasm, I reject my partner) were coded as 1. Cohen's Kappa for this category was satisfactory with $\kappa = .71$.

The second dimension included verbal, sexual communication with a partner and was rated as 0 (*no*) and 1 (*yes*). Examples for sexual communication were as follows: My partner asks me what's going on, we talk about our sexual wishes, my partner says: okay. Continuations that indicated communication with someone other than a sexual partner (i.e., talking about sex with a friend) were coded as 0. There was high agreement between the two raters' judgments, $\kappa = .86$.

The third dimension included the use of sexually explicit language and was rated as 0 (*no*) and 1 (*yes*). Examples for sexually explicit language were as follows: penetration, vagina, penis, becoming wet, orgasm, sex, foreplay, horny, or moaning. Examples for non-explicit language were: longing, going to bed, being in love, relaxing, down there, caressing. Although exchange between the raters revealed that some distinctions were difficult to make on a word-by-word level (e.g., caressing someone can be something sexual or non-sexual depending on the context), Cohen's Kappa for this category was good, $\kappa = .84$. Mean ratings of both raters were summed across all sexual scenarios and used as a score on each of the dimensions. As 16 sexual scenarios were included in the study, scores could potentially range between 0 and 16 on each dimension. The actual coding schema is available by the authors upon request.

Data Reduction and Analysis

All analyses were conducted with SPSS 25. Means and standard deviations are reported as descriptive values. Bivariate Pearson's *r* correlation coefficients are used to assess the relationship between different aspects of the scenario task and sexual function as well as sexual distress. Scatter plots were used to check potential linearity of relationships between the variables. Two hierarchical regression analyses were conducted to examine the predictive value of four dimensions of the scenario task (e.g., valence, references to sexual problems, sexually explicit language, and sexual communication) for sexual function in women and men. To evaluate whether these aspects of the scenario task could explain sexual function above and beyond possible confounders such as age, partnership status, sexual orientation (i.e., exclusively heterosexual vs. other sexual orientation), valence of neutral scenarios, and sexuality-related personal distress, those variables were included in the first step. In Step 2, valence of sexual scenarios, as well as number of scenarios referring to sexual problems, sexual communication with a partner, and sexually explicit language was included. Parametric assumptions of linear regression analyses (e.g., multicollinearity, homoscedasticity) were tested via the regression diagnostics (variance inflation factors, plots of residuals), and no significant violations of these assumptions were observed. Cook's distance suggested two influential cases (Cook's distance > 1). Removing these cases did not alter the results, and they were retained in the final regression model. As statistics, R^2, R^2 change, betas, *t* values, and *p* values are reported. In addition, squared semi-partial correlations are reported as effect size for all predictors indicating the amount of outcome variance explained individually by the predictor. By convention, R^2 values of .02, .13, and .26 are considered to be small, medium, and large, respectively (Cohen, 1988).

Table 1 List of scenarios including self-ratings of valence and vividness and external ratings of references to sexual problems, sexual communication with a partner, and usage of sexually explicit language

Scenario	Valence (range: −2 to 2)		Vividness (range: 1–5)		Sexual problems	Sexual communication	Sexually explicit language
	M	SD	*M*	SD	%	%	%
1. After a delicious dinner, I am sitting around with a group of friends. After a few drinks, we start talking about sex. A friend addresses me directly and asks: How's it going with you in bed?" I blush and say:	0.10	1.16	3.72	1.21	20	0	9
2. During sex I notice that my partner's breath is going faster and that they are very aroused. I feel, however, that my body is responding differently. After a little while, my partner also notices this and…	0.00	1.22	3.64	1.12	15	1	81
3. My partner and I have been intimate with each other. While we are still lying together, we both pursue our own thoughts in silence. I am reflecting on how it has been for me this time. When I meet my partner's gaze, I know that…	1.32	1.11	4.39	0.89	3	8	41
4. I have a day off and go for a walk in the nearby city park. After some time I would like to sit down on a bench. I look around and…	0.78	1.00	4.03	1.06			
5. After some time, I see my partner again and look forward to having sex with him/her. We kiss and caress, but I feel that my body does not play along. I behave as always and…	−0.12	1.17	3.65	1.20	7	30	23
6. I have selected an erotic movie and my partner and I are watching such a film for the first time together. I quickly realize that my partner really likes the movie and that he/she is getting increasingly aroused. I feel…	1.36	1.00	3.86	1.23	59	2	32
7. A well-known band plays a concert in my city. A friend has become ill at short notice, and so I get their ticket. The concert…	0.92	1.08	3.54	1.15			
8. It's the weekend and I enjoy not having to get up early. Cuddled up to my partner, I feel the warmth of his/her body. When he/she wakes up, he/she says "Honey, the sex last night was…"	1.64	0.73	4.16	1.04	25	63	10
9. My partner and I have some time alone and we want to enjoy this time together. We undress and start to caress each other. I realize that my body is responding to the touch and I feel…	1.75	0.68	4.62	0.71	16	4	15
10. Together with my partner, I watch a documentary about the German people's sex life. My partner finds it interesting and says: "That's funny, compared to others we have…	0.89	1.11	3.77	1.15	43	7	14
11. I finally have time to read a book on holiday. It is a bestseller and was recommended to me by a colleague. After the first few chapters…	0.55	1.15	3.99	1.04			
12. My partner and I are being intimate with each other. We caress, and kiss and I feel my heart beat and my breath quicken. My partner senses what's going on and…	1.63	0.80	4.53	0.79	22	55	18
13. After a long time, my partner and I have sex again. As my partner caresses me, I feel the tension in my body and notice how my breath stops. My partner notices what's going on and…	1.02	1.15	4.06	1.09	17	0	17
14. Last night I had sex with my new partner for the first time. We were both very curious and cautious about what the other one likes. Because of the excitement…	0.55	1.21	3.92	1.11	24	20	23
15. I ordered a dish in a restaurant, which I did not know before. As the waiter brings me the food, the smell rises directly into my nose. It tastes…	0.90	1.14	3.90	1.12			
16. My partner and I want to get intimate with each other. During the foreplay, I realize that my thoughts have wandered off. When I say this to my partner, he responds as expected. He looks at me and…	0.19	1.32	3.85	1.08	12	2	8
17. I come home from work in the evening. My partner looks at me expectantly and says in a soft voice that he wants to sleep with me. I can feel my heartbeat and say:	1.32	1.08	4.16	1.06	29	24	32
18. I bought a product, which unfortunately stops working after a short time. I go to the department store to return or exchange it. The saleswoman…	0.15	1.21	3.93	1.04			
19. I'm on my way home and the thought of having sex with my partner very much excites me. As we begin to touch, I realize that my body is not responding as I want. I know that…	−0.36	1.08	3.60	1.16	9	1	58

Table 1 (continued)

Scenario	Valence (range: −2 to 2)		Vividness (range: 1–5)		Sexual problems	Sexual communication	Sexually explicit language
	M	SD	*M*	SD	%	%	%
20. My partner tells me that he talked to his best friend about our sex life. He just wanted to make sure that was okay with me. It was important for him to talk about it because…	0.18	1.13	3.16	1.28	3	17	14
21. My partner and I have been together for a few years. In recent months, I've noticed that our sex life has changed. One night, when my partner shows me that he wants to sleep with me…	0.53	1.34	3.73	1.16	3	0	67

Results

Descriptive Analyses

Female participants scored 26.44 (SD 7.08) on the FSFI with 37.9% ($n=142$) exhibiting values below the cutoff of 26.55 (Wiegel et al., 2005) which identifies women who are deemed at risk for sexual dysfunction. Sexual distress measured with the FSFD-R was on average 8.71 (SD 9.12) with 29.6% ($n=110$) women reporting values ≥ 11 (Derogatis et al., 2008) indicating clinically relevant levels of personal distress related to sexual problems. Men's score on the IIEF was on average 59.06 (SD 12.96) with 23.2% ($n=38$) scoring below 53, the clinical cutoff for erectile dysfunction. The standardized SQoL-M score ranging from 0 to 100 with higher values indicating higher quality of life (Abraham et al., 2008) was 66.47 ($n=15.98$). The average reverse-coded SQoL-M score (range 11–66) that was used in this study to allow for direct comparisons with the FSDS-R was 22.31 (SD 10.64) with higher values indicating more distress. So far, no clinical cutoff has been reported for the SQoL-M. Table 1 provides information about the scenario task used in this study. On a scale ranging from −2 (*very negative*) to 2 (*very positive*), both sexual ($M=0.75$, SD 0.54) and neutral scenarios ($M=0.65$, SD 0.62) were, on average, evaluated positively. Using a scale from 1 (*not at all vivid*) to 5 (*very vivid*), participants reported being able to envision both sexual ($M=3.93$, SD 0.55) and neutral scenarios ($M=3.88$, SD 0.72) with relatively high vividness. Sum scores for externally rated continuations of sexual scenarios, based on the average scores of the two raters, were 2.46 (SD 1.88, range = 0–10.5) for references to sexual problems, 4.09 (SD 2.09, range = 0–11.5) for the usage of sexually explicit language, and 2.12 (SD 1.33, range = 0–7) for sexual communication with a partner.

Correlational Analyses

Table 2 shows bivariate correlations between different dimensions of the scenario task, sexual function, and sexual distress separately for women and men. Intercorrelations between the dimensions of the scenario task, for example between the use of sexually explicit language and sexual communication, were mostly small. The relationship between self-reported valence of the sexual scenarios and references to sexual problems showed a moderate negative correlation for both women, $r(384)=-.55$, $p<.001$, and men, $r(180)=-.48$, $p<.001$. In addition, a greater vividness of sexual scenarios was associated with a more positive valence for women, $r(385)=.46$, $p<.001$, and men, $r(180)=.51$, $p<.001$. Among women, more sexual communication with a partner, $r(366)=.10$, $p=.049$, more sexually explicit language, $r(367)=.25$, $p<.001$, and fewer scenarios with references to sexual problems, $r(367)=-.35$, $p<.001$, were associated with higher sexual function. Self-ratings of the valence, $r(368)=.48$, $p<.001$, and vividness, $r(368)=.16$, $p=.002$, of sexual scenarios as well as the valence of neutral scenarios, $r(368)=.11$, $p=.040$, were also positively correlated with sexual function among women. Among men, fewer scenarios with references to sexual problems, $r(158)=-.46$, $p<.001$, and a more positive valence of sexual scenarios, $r(158)=.36$, $p<.001$, were associated with higher sexual function. For both genders, sexual function and sexual distress were negatively correlated (women: $r(364)=-.46$, $p<.001$, men: $r(157)=-.60$, $p<.001$). In addition, higher age was associated with better sexual function in women, $r(368)=.18$, $p<.001$. Being in a committed/monogamous partnership was significantly correlated with sexual function in women, $r(368)=.21$, $p<.001$, and men, $r(158)=.41$, $p<.001$. Reporting an exclusively heterosexual orientation versus any other sexual orientation was not associated with sexual function among women and men. To conclude, among women, the associations between all dimensions of the scenario task and sexual function were as expected, while among men, only self-rated valence and references to sexual problems showed significant correlations to sexual function.

Regression Analyses

Table 3 shows the results of two regression analyses predicting sexual function for women and men. In Step 1, possible confounding variables (i.e., age, partnership status, sexual orientation, valence of neutral scenarios) as well as sexuality-related

Table 2 Bivariate correlations between the scenario task, sexual function, and sexual distress, age, partnership status, and sexual orientation in women (top-right) and men (bottom-left)

	1	2	3	4	5	6	7	8	9	10	11	12
Scenario task: sexual communication with a partner	1		−.03	−.22***	.14**	.10*	.06	.03	.10*	−.14**	−.09	.03	−.08
Scenario task: sexually explicit language	2	−.12		−.03	.10	.11*	.14**	.01	.25***	−.03	.04	.05	.01
Scenario task: sexual dysfunction	3	−.11	.02		−.55***	−.06	−.07	.00	−.35***	.36***	−.06	−.03	.06
Scenario task: valence (sexual)	4	.10	.07	−.48***		.19***	.46***	.16**	.48***	−.44***	.15**	.01	−.04
Scenario task: valence (neutral)	5	.07	−.03	−.16*	.32***		.20***	.42***	.11*	.04	−.06	.08	−.06
Scenario task: vividness (sexual)	6	.12	.05	−.24**	.51***	.20**		.48***	.16**	−.01	.01	.04	−.05
Scenario task: vividness (neutral)	7	.04	.02	.00	.21**	.55***	.41***		.02	.04	.08	.00	−.07
Sexual function[a]	8	−.01	.01	−.46***	.36***	.11	.15	.04		−.43***	.18***	.21***	.09
Sexual distress[b]	9	−.02	.08	.34***	−.46***	−.10	−.12	−.10	−.60***		−.19***	−.01	.00
Age	10	−.02	−.10	.00	.04	−.02	−.02	.01	−.06	.14		−.03	.12*
Committed partnership/marriage (no/yes)	11	.01	.08	−.07	−.01	−.03	−.16*	−.09	.42***	−.21**			.15**
Exclusively heterosexual orientation (no/yes)	12	−.12	−.04	−.13	.02	.01	−.03	−.05	.00	−.03	.08	.07	

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

[a]Sexual function in women is assessed with the Female Sexual Function Index and in men with the International Index of Erectile Function. [b]Higher values indicate higher distress. Women's sexual distress is measured with the Female Sexual Distress Scale. Men's sexual distress is assessed with recoded values of the Sexual Quality of Life Scale

personal distress were entered. Among women, all variables were significant predictors of sexual function and explained 26% of outcome variance. Among men, partnership status and sexual distress were significant predictors and explained 45% of variance in sexual function.

In Step 2, predictors related to the sexual scenarios were added (R^2 change = .11 for women, .06 for men). More positive self-rated valence of sexual scenarios ($R^2 = .03$) and more sexually explicit language used in the scenario endings ($R^2 = .04$) were positive predictors of sexual function among women. While partnership status ($R^2 = .03$) and sexual distress ($R^2 = .05$) were still significant predictors in Step 2, valence of neutral scenarios was no longer predictive ($R^2 = .00$). Neither the number of endings that included references to sexual problems ($R^2 = .00$), nor of sexual communication ($R^2 = .00$) contributed significantly to the explanation of sexual function among women. For men, scenario endings hinting at sexual problems ($R^2 = .03$) and references to sexual communication ($R^2 = .01$) added significantly to the explanation of sexual function above and beyond partnership status ($R^2 = .10$) and sexual distress ($R^2 = .15$).

Discussion

This study aimed to validate a novel, indirect measure of cognitive appraisals related to sexual function in a large convenience sample. Toward this aim, a scenario task previously developed and applied in other areas of psychopathology (e.g., Woud et al., 2014) was adapted using ambiguous, open-ended descriptions of sexuality-related situations that could be appraised in different ways.

Negative Valence and References to Sexual Problems in the Scenario Task

We hypothesized positive correlations between the self-rated valence of the completed sexuality-related scenarios with sexual function levels assessed via self-report questionnaires, namely the FSFI in women and the IIEF in men. Indeed, a positive evaluation of completed sexual scenarios was associated with higher sexual function in both genders. Importantly, findings cannot be explained by a general positivity bias as valence of completed neutral scenarios, which were included for control purposes, only correlated with sexual function to a small extent ($r = .11$, n.s. for men and $r = .11$, $p < .05$ for women). This finding speaks to the validity of the scenario task and suggests that women and men with lower sexual function generated continuations that resolved the situation in a more negative way than continuations generated by participants with higher sexual function.

In line with these findings, the number of externally rated scenario endings that included references to sexual problems

Table 3 Hierarchical multiple linear regression analyses to predict women's ($n = 368$) and men's sexual function ($n = 161$)

Outcomes	Women's sexual function[a]				Men's sexual function[b]			
Predictors	β	t	p	R^2	β	t	p	R^2
Model 1								
Constant		20.07	<.001			23.73	<.001	
Age	.10	2.05	.041	.01	−.08	−1.30	.196	.01
Committed partnership/marriage (no/yes)	.19	4.16	<.001	.04	.35	5.58	<.001	.11
Exclusively heterosexual orientation (no/yes)	.07	1.46	.145	.00	−.04	−.69	.490	.00
Sexual distress[c]	−.42	−9.10	<.001	.17	−.53	−8.62	<.001	.26
Scenario task: valence (neutral)	.11	2.47	.014	.01	−.01	−.09	.925	.00
Explained variance	$R^2 = .26$				$R^2 = .45$			
Model 2								
Constant		12.19	<.001			17.79	<.001	
Age	.07	1.53	.126	.00	−.06	−0.94	.348	.00
Committed partnership/marriage (no/yes)	.19	4.37	<.001	.03	.35	5.83	<.001	.11
Exclusively heterosexual orientation (no/yes)	.07	1.70	.091	.01	−.09	−1.45	.149	.01
Sexual distress[c]	−.26	−5.36	<.001	.05	−.45	−6.68	<.001	.15
Scenario task: valence (neutral)	.02	0.56	.573	.00	−.04	−0.68	.499	.00
Scenario task: valence (sexual)	.24	4.28	<.001	.03	.05	0.65	.515	.00
Scenario task: communication	.01	0.19	.853	.00	−.12	−2.02	.045	.01
Scenario task: explicitness	.20	4.77	<.001	.04	.09	1.47	.143	.00
Scenario task: sexual problems	−.09	−1.80	.072	.00	−.19	−2.80	.006	.03
Explained variance	R^2/R^2 change = .37/.12				R^2/R^2 change = .51/.06			

[a]Women's sexual function is measured with the Female Sexual Function Index. [b]Men's sexual function is measured with the International Index of Erectile Function. [c]Higher values indicate higher distress. Women's sexual distress is measured with the Female Sexual Distress Scale. Men's sexual distress is assessed with recoded values of the Sexual Quality of Life Scale

(e.g., lack of sexual desire, pain, erectile problems) was associated with lower sexual function among both women and men. Correlations were comparable across genders and were moderate in strength. This result corresponds to self-report data showing that individuals who experience sexual difficulties interpret ambiguous situations differently from those without such concerns (Nobre, Gouveia, & Gomes, 2003; Nobre & Pinto-Gouveia, 2009). While significant correlations between these dimensions of the task (i.e., valence, references to sexual problems) and sexual function were found in both women and men, regression analyses showed that self-rated valence of sexual scenarios was a significant predictor of women's, and externally rated references to sexual problems were a significant predictor of men's sexual function. Possibly, this finding can be explained by the different questionnaires used to assess sexual function among women and men in this study. The FSFI includes several items that are relatively vague and open to subjective interpretation (e.g., How often did you feel sexually aroused during sex? How would you rate your arousal?), while men's IIEF focusses on erectile function and includes multiple questions that ask about aspects of the sexual response that can be more objectively assessed (e.g., How often were you able to penetrate your partner?). Thus, the former might be more closely related to a general evaluation of a sexual situation as negative or positive and the latter might show stronger associations with specific descriptions of a sexual problem (e.g., erectile problems). Future studies should utilize the same measure of sexual function and sexuality-related personal distress for women and men to rule out that this finding may be caused by idiosyncrasies of measurement instruments. Alternatively, this pattern of results could point to a more general gender difference in the relevance of sexual performance and the evaluation of sexual activity. While women might be more prone to evaluate a sexual situation holistically (Was the sexual encounter pleasurable or not?), men might focus more strongly on their sexual performance (Was my erection hard enough? Have I lasted long enough?). To conclude, the results are in line with previous studies using the same task, in such that the more disorder-specific dysfunctional endings are generated, the higher the levels of the psychopathology in question (e.g., Woud et al., 2012). In addition, valence of completed scenarios and references to sexual problems added to the explanation of variance in sexual function above and beyond cognitive–emotional sexuality-related distress assessed via self-report among women and men, respectively. This finding supports the notion that indirect measures can be used to

measure cognitive appraisals relevant to sexual function that are not redundant to those assessed via self-report.

References to Sexual Communication in the Scenario Task

As sexual communication is another predictor of sexual function and sexual satisfaction (Byers, 2011), we also explored whether the number of scenario endings that included a reference to sexual communication with a partner was associated with sexual function. Significant correlations with sexual function were found only among women—where more sexual communication was correlated with higher sexual function—but not among men. In addition, fewer references to sexual communication were associated with better sexual function among men when this predictor was investigated along with other variables in the regression analysis. This finding is interesting as it partly contradicts studies that suggested a stronger, positive relationship between self-reported sexual communication and sexual function (Byers, 2011). An important distinction between the scenario task and self-report questionnaires such as the Dyadic Sexual Communication Scale (Catania 2013) used in previous studies is that such direct measures often ask whether couples experience any difficulties in talking about sex (*My partner rarely responds when I want to talk about our sex life*), but do not assess how often couples actually discuss sexual matters. The negative association between sexual communication and sexual function in men in the present study might not necessarily mean that sexual communication negatively impacts men's sexual function. More likely, the approach used in this study to assess sexual communication was not specific enough to distinguish different kinds of sexual communication. In other words, while some participants may talk to sexual partners to further improve their sexual experiences (*I want to know what you like in bed.*), some might only discuss sexual topics to deal with sexual difficulties (*Tell me what's going on? Why are you not interested in sex?*). Thus, for some couples the need to talk about sexual matters might only arise once a sexual problem is encountered. Replicating these findings with a focus on specific scenarios (e.g., Scenarios 2 or 5 that explicitly refer to a sexual problem) or different kinds of communication (i.e., communicating sexual wishes vs. discussing sexual problems) may help to clarify these findings. Future studies should also include self-report measures of sexual communication to further investigate whether this dimension of the scenario task does indeed reflect how sexual wishes and problems are communicated between partners.

Sexually Explicit Language in the Scenario Task

While previous studies indicated that sending sexually explicit text messages may be associated with greater sexual pleasure (Ferguson, 2011), we are not aware of any study investigating the relevance of sexually explicit language in research targeting sexual function. The present study, however, included testing this concept, and results were as follows: A positive correlation between the number of endings that included sexual language and sexual function was found among women, but not among men. Women who reported higher sexual function more often used language that specifically referred to genitals or sexual activities. Even when controlling for other predictors of sexual function (i.e., age, partnership status, sexual distress, and other dimensions of the scenario task), the use of sexually explicit language added to the explanation of sexual function in women. A possible reason could be that women who use non-specific, non-sexual, or vague language when it comes to the description of sexual situations in the scenario task are also too shy or self-conscious to tell a partner exactly what they want sexually. Sexuality is affected by gender-specific norms, including a cultural suppression of women's sexual expression (Baumeister & Twenge, 2002). Thus, women who describe specific sexual acts (e.g., penetration or oral sex), a concrete response to sexual stimulation (e.g., sexual arousal, getting lubricated) or genitals might have been able to overcome this suppression of their sexuality in a helpful way and may be more assertive and open sexually. For men, discussing sexual matters directly may be more in line with cultural expectations about their sexuality and might therefore not closely relate to their sexuality on an individual level. This study, however, does not allow for a causal interpretation. Should future studies support a causal relationship between the use of sexually explicit langue and sexual function, they would provide evidence for commonly used psychological interventions that aim to educate women with sexual concerns about their own genital anatomy and to encourage them to explore ways to experience sexual pleasure alone or with a partner in order to improve their sexual function (Brotto et al., 2008).

Implications for Future Research and Clinical Practice

As the scenario task explained sexual function in women and men above and beyond cognitions related to sexuality-related distress, more research into the mechanisms of this task as well as into cognitive appraisals relevant to sexual function is warranted. While our findings underline the usefulness of a scenario-based approach, it remains unclear what cognitive processes (i.e., spontaneous, automatic vs. conscious, deliberate cognitions) were targeted with this task. Participants did have time to reflect on their answers as there was no time limit for generating and entering the scenario endings. Thus, we cannot be sure whether cognitive elaboration on the scenario or rather automatically triggered appraisals were crucial for participants' responses. To investigate which cognitive processes are driving the scenario task and to assess the relationship to other indirect measures that aim to target automatic cognitive appraisals, the

following steps are suggested. Future studies should build in a time limit for answering a scenario or provide an extra load during task completion by, for example, asking participants to memorize a series of numbers to prevent extensive cognitive elaboration before scenario completion. It would also be beneficial to use this scenario-based approach in combination with other direct (i.e., self-report questionnaires on sexual cognitions) and indirect measures of dysfunctional appraisals such as the ST-IAT to examine whether associations with other measures aiming to assess cognitive appraisals related to sexuality can be found to further validate the task. As an alternative to the ST-IAT, a lexical decision task in which participants would be presented with an ambiguous, sexuality-related scenario followed by a word cue that they would have to categorize as a word or nonword could be used. In case the word cue is an existing word, it would also disambiguate the scenario. Hence, by varying the word's valence, word categorization times would thus represent an index of participants' appraisal of the scenario (example: "When I think about my sex life, I feel …" "content" vs. "concerned," with faster response times for the latter than former word in case of a dysfunctional appraisal). Compared to the ST-IAT, the lexical decision task can assess more complex interpretations and might shed further light on the cognitive processes relevant to sexual function. As a second alternative to validate the scenario task and to investigate the relevance of cognitive appraisals for sexual function, a scrambled sentences task (Rude, Wenzlaff, Gibbs, Vane, & Whitney, 2002; Wenzlaff & Bates, 1998) could be developed based on the scenarios used in this study. This task has been used to assess the tendency to interpret ambiguous information (e.g., sex frustrating be exciting can) in a positive (sex can be exciting) or negative (sex can be frustrating) way.

Correlational analyses showed vividness ratings to be positively correlated with a positive valence of completed scenarios and fewer references to sexual problems. This might imply that participants found it easier to imagine positive situations than negative, potentially distressing ones. Among female participants, a greater vividness of sexual scenarios was also associated with better sexual function. Future studies should focus on identifying the direction of effects and investigate whether women's sexual function can be influenced by teaching them to imagine sexual situations more vividly or in greater detail.

Our study has several limitations. First, our data are only supportive of the association of cognitive appraisals with sexual function. Research from the field of experimental psychopathology, however, offers tools to test the potential causal role of cognitions, namely studies that manipulate such appraisals. A means to manipulate cognitions is cognitive bias modification (Woud & Becker, 2014), a training-based approach that teaches participants to consistently complete ambiguous scenarios in a positive manner. As this study was advertised as a study on sexuality and partnerships, a potential volunteer bias characterized by sexually more open individuals participating more often than more traditional or conservative individuals (Wiederman, 1999) could have affected the sample and reduce generalizability of our findings to other populations.

From a clinical perspective, the scenario task could provide helpful information regarding the treatment of sexual dysfunctions in such that it might provide valuable insights into patients' unique appraisals, which in turn could be used for more individualized strategies during interventions such as cognitive restructuring. Using open-ended scenarios has the advantage that responses are participant-generated and thus reflect idiosyncratic appraisals (Hirsch et al., 2016). This might be especially useful when considering that different types of sexual difficulties (e.g., genito-pelvic pain or low desire) may be associated with different types of cognitive appraisals. Further, it may be interesting to apply the scenario task using a longitudinal design, for example, before, during, and after treatment, to also test its sensitivity and specificity over time.

Conclusion

This study confirmed the value of a scenario-based approach for the explanation of variance in sexual function above and beyond self-reported sexual distress. A negative valence of scenario endings as well as the number of endings that included a reference to sexual problems was associated with lower sexual function among both women and men. Findings also suggest that sexual communication with a partner and the use of sexually explicit language may also be important correlates of women's sexual function. Thus, our study provides first evidence of the usefulness of a scenario-based approach to measure sexuality-related cognitive appraisals.

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Compliance with Ethical Standards

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

Informed Consent Informed consent was obtained from all individual participants included in the study.

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