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Measuring Sexual Excitation and Sexual Inhibition in a Dutch-Speaking Sample

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Measuring Sexual Excitation and Sexual Inhibition in a Dutch-Speaking Sample

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Statistics and Analytics

by

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ABSTRACT

Background: Individual differences in sexual excitation and sexual inhibition are important predictors of sexual functioning. Psychometric instruments for these aspects of sexual response were originally developed separately for men (Sexual Inhibition /Sexual Excitation Scales [SIS/SES]) and women (Sexual Excitation/Sexual Inhibition Inventory for Women [SESII-W]). These measures were then adapted to function similarly in samples comprising both men and women (Sexual Inhibition/Sexual Excitation Scales-Short Form [SIS/SES-SF] and Sexual Excitation/Sexual Inhibition Inventory for Women and Men [SESII-W/M], respectively). No published study to our knowledge has administered the SIS/SES and SESII-W/M questionnaires to a sample of both women and men. In the present study, we sought to validate Dutch versions of these measures of sexual excitation and sexual inhibition as well as evaluate tests of measurement invariance across gender.

Methodology: Several researchers fluent in both English and Dutch translated the English versions of the SIS/SES, SIS/SES-SF, and SESII-W/M to Dutch. Using a secondary dataset in which these items had been administered to Dutch-speaking women ($n = 688$) and men ($n = 340$), we conducted tests of measurement invariance using multiple group confirmatory factor analysis.

Results: The 3-factor structure of the 45-item SIS/SES did not fit the data well in a Flemish sample. However, results from the present study supported the original factor structures for the 3-factor 14-item SIS/SES-SF and 6-factor 30-item SESII-W/M. Further, both the SIS/SES-SF and SESII-W/M exhibited configural invariance, metric invariance, partial scalar invariance, and partial residual invariance across gender.

Conclusion: While the SESII-W has been successfully translated to Dutch, there have not been any published studies using Dutch versions of the SIS/SES, SIS/SES-SF, or SESII-W/M. In a Dutch-speaking sample of women and men, our analyses suggested that the SIS/SES-SF may be the most efficient available tool for directly comparing sexual excitation and sexual inhibition across women and men; however, the SESII-W/M also demonstrated positive qualities.

Researchers interested in making comparisons across gender might consider developing a new scale that combines items from these measures or one that comprises an entirely new set of items created with the intention of functioning similarly for women and men.

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CHAPTER 1

INTRODUCTION

Overview

One of the prominent theoretical models in sex research is the Dual Control Model of sexual response (Bancroft & Janssen, 2000). This model posits that sexual response is governed by two neuropsychological systems: sexual excitation and sexual inhibition. The relative balance of excitatory and inhibitory processes determines whether a sexual response occurs within a particular person within a particular context. Previous studies have shown that individual differences in sexual excitation and sexual inhibition can be important predictors of sexual functioning and sexual risk taking (Janssen & Bancroft, 2007).

The development of psychometric measures related to the Dual Control Model has been an iterative and gendered process. The first measure of sexual excitation and sexual inhibition was developed for men (Sexual Inhibition/Sexual Excitation Scales [SIS/SES]; Janssen, Vorst, Finn, & Bancroft, 2002), and a short form of this measure was created to use with both men and women (Sexual Inhibition/Sexual Excitation Scales-Short Form [SIS/SES-SF]; Carpenter et al., 2011). A separate measure was developed for women (Sexual Excitation/Sexual Inhibition Inventory for Women [SESI-W]; Graham et al., 2006), which was similarly adapted to be used with both women and men (Sexual Excitation/Sexual Inhibition Inventory for Women and Men [SESI-W/M]; Milhausen, Sanders, Graham, Yarber, & Maitland, 2010).

Even though the SIS/SES-SF and SESSI-W/M were adaptations intended to measure sexual excitation and sexual inhibition in both women and men, the item content and related factors of these measures vary. Like the SIS/SES, the short form version reflects three factors: one sexual excitation factor (SES) and two sexual inhibition factors (SIS-1 and SIS-2). The

SIS–1 factor involves inhibition due to threat of performance failure (e.g., difficulty getting aroused, losing arousal easily, or concern about pleasing a partner), and the SIS–2 factor involves inhibition due to threat of potential consequences (e.g., risk of being caught, sexually transmitted infections, or unwanted pregnancy).

However, the factors of the SESII-W/M are more specific. Factors related to sexual excitation include “Arousability” and “Partner Characteristics,” while “Concerns About Sexual Function” and “Dyadic Elements of the Sexual Interaction” are related to sexual inhibition. Further, two other factors contain items reflecting either sexual excitation or sexual inhibition: “Setting” and “Relationship Importance.” Many of these factors are not reflected in the items of the SIS/SES. Because there are content differences between these scales, they may function differently in samples of women and men.

The validation studies for the development of the SIS/SES-SF (Carpenter et al., 2011) and SESII-W/M (Milhausen et al., 2010) included tests of measurement invariance by gender, finding that they each measured sexual excitation and sexual inhibition similarly in women and men. Demonstrating the importance of continuing this line of research, the most recent *Annual Review of Sex Research* discussed the importance of verifying that a measure functions similarly across groups before comparing them (Sakaluk, 2019).

In our present study, we sought to provide additional evidence that these measures function similarly for women and men by evaluating factorial invariance. While the SIS/SES, SIS/SES-SF, and SESII-W/M have been administered to samples of both women and men, no study to our knowledge has administered these questionnaires to a sample of both women and men. However, doing so would allow researchers to simultaneously assess how invariant each scale is across gender in its measurement of sexual excitation and sexual inhibition.

Finally, these measures of sexual excitation and sexual inhibition have been translated into several other languages. For example, previous research has demonstrated good test-retest reliability, convergent validity, discriminant validity, and construct validity for the SIS/SES-SF and SESII-W/M in German (Velten et al., 2018). Further, because one in five Dutch people disclose a problem concerning sexual response at some point in their life (Ter Kuile, Brauer, & Laan, 2006), Bloemendaal and Laan (2015) sought to validate the SESII-W for use in Dutch-speaking populations. However, there is still a need for measures of sexual excitation and sexual inhibition that were developed for men (i.e., SIS/SES) or for both women and men (SIS/SES-SF and SESII-W/M) to be translated into Dutch and for the psychometric properties of these translated versions to be assessed. Further, in the only study to validate the psychometric properties of a measure of sexual excitation and sexual inhibition in Dutch, Bloemendaal and Laan (2018) urged future researchers to compare these measures (i.e., SIS/SES, SIS/SES-SF, and SESII-W/M) to determine which questionnaire may best be able to assess sexual excitation and sexual inhibition in samples of both women and men.

Purpose of the Study

The SIS/SES, SIS/SES-SF, and SESII-W/M have not been publicly translated to Dutch nor validated in a Dutch-speaking sample. Thus, the first purpose of the present study was to evaluate the psychometric properties of the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M. To assess how well each of these scales function in a sample of women and men, we also tested for measurement invariance across gender.

As such, two sets of research questions were addressed in the present study. First, can the proposed factor structures for the English versions of the SIS/SES, SIS/SES-SF, and SESII-W/M be replicated using Dutch versions of these measures in a Dutch-speaking sample? Second, do

the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M function similarly across women and men?

CHAPTER 2

REVIEW OF THE LITERATURE

A Brief History of the Dual Control Model

The Dual Control Model of sexual response was originally developed to synthesize previous research on male sexual dysfunction and to stimulate research on the importance of individual differences in sexual response (Janssen & Bancroft, 2007). Similar to the conceptual nervous system proposed by Gray (1982), the Dual Control Model posits that two neurophysiological systems govern sexual response: one activates sexual response and the other suppresses it (Janssen & Bancroft, 2007). The relative balance of excitatory and inhibitory processes determines whether a sexual response occurs within a particular person within a particular context. According to the Dual Control Model, individual differences in sexual excitation and sexual inhibition might be important predictors of sexual functioning as well as various aspects of sexual behavior (e.g., sexual aggression, HIV risk behavior).

There are five key assumptions of the Dual Control Model. First, sexual excitation and sexual inhibition systems reflect specific sexual mechanisms of activation and inhibition rather than general biological processes (Gray, 1982). Second, sexual excitation and sexual inhibition are orthogonal at the trait level (Janssen & Bancroft, 2007). Thus, sexual excitation and sexual inhibition systems are separate, and people's propensities for each are relatively independent. Third, typical sexual excitation and sexual inhibition functioning are both evolutionarily adaptive. Sexual excitation perpetuates reproduction; sexual inhibition facilitates threat detection (Bancroft, 1999). Fourth, between-person variation is expected to be a stable trait that is at least partially genetically determined. Finally, extreme levels of sexual excitation and sexual

inhibition are assumed to be associated with risky sexual behavior and clinically relevant sexual difficulties (see Bancroft & Janssen, 2000, 2001; Bancroft et al., 2004).

The Dual Control Model was originally developed to describe male sexual functioning because the available research at the time was largely restricted to the neurophysiology and psychophysiology of male sexual response (Janssen & Bancroft, 2007). However, the Dual Control Model is also theoretically applicable to women (Bjorklund & Kipp, 1996). There is evidence that propensities for sexual excitation and sexual inhibition might differ by sex. For example, inhibitory mechanisms may be better developed for women than for men, which would reduce women's variability in their propensity for sexual inhibition (Bloemendaal & Laan, 2015). Potential differences between women and men are discussed in further detail below.

Having posited the Dual Control Model, researchers sought to develop instruments to measure people's propensities for sexual excitation and sexual inhibition. This process was carried out in at least two distinct trajectories. A questionnaire was first developed for men (i.e., the Sexual Excitation Scales/Sexual Inhibition Scales [SIS/SES; Janssen et al., 2002]) and then one for women (i.e., the Sexual Excitation/Sexual Inhibition Inventory for Women [SESII-W; Graham et al., 2006]). Since the original studies documenting their development and validity, each of these measures has undergone adjustments to make them appropriate for both women and men.

Measuring Sexual Excitation and Sexual Inhibition

Sexual Inhibition/Sexual Excitation Scales (SIS/SES). Developing the SIS/SES involved writing items to represent several sexual stimuli and contexts—some potentially exciting circumstances without any obvious threat involved and others with potential threat (e.g., risk, danger, or likelihood of some negative consequence; Janssen et al., 2002). These items were

written in an “if-then” format. For sexual excitation items, the “if” statement described a potential sexual stimulus or context (e.g., visual, tactile, or imaginary); the “then” statement described a sexual response. Examples of sexual excitation items include “If I am on my own watching a sexual scene in a film, I quickly become sexually aroused” and “When an attractive person flirts with me, I easily become sexually aroused.” Sexual inhibition items were written to depict the loss of sexual arousal due to some intrapersonal or interpersonal threat (e.g., negative consequences, performance-related concerns, or harm). Examples of sexual inhibition items include “When I have a distracting thought, I easily lose my erection” and “If I can be seen by others while having sex, I am unlikely to stay sexually aroused.” The content of the 73 items from the first version of the SIS/SES was reviewed by sex researchers (Bancroft et al., 2009). For all items, participants were asked to report on a 4-point Likert-type scale (i.e., *Strongly Agree to Strongly Disagree*) how they would most likely respond in a particular situation.

Conducting a factor analysis on the data from a sample of 408 men identified 10 factors across 45 items (Janssen et al., 2002). Men in this sample were undergraduate students ($M_{\text{age}} = 22.8$ years) who were sexually functional and heterosexual. Further factor analysis of the 10 unnamed subscale scores identified three higher-level factors: one sexual excitation factor (SES) and two sexual inhibition factors (SIS–1 and SIS–2). These researchers did not expect there to be two inhibition scales (Janssen & Bancroft, 2007); however, they determined that the items in the two sexual inhibition factors were conceptually distinct. Specifically, SIS–1 involved inhibition due to threat of performance failure (e.g., difficulty getting aroused, losing arousal easily, or concern about pleasing a partner), and SIS–2 involved inhibition due to threat of potential consequences (e.g., risk of being caught, sexually transmitted infections, or unwanted pregnancy).

The original psychometric validation of SIS/SES demonstrated reasonable, although not strong, test-retest reliability (SES: $r = .76$, SIS-1: $r = .67$, SIS-2: $r = .74$; Janssen et al., 2002). Data from this initial sample supported the Dual Control Model's expectation that sexual excitation and sexual inhibition are independent processes; the correlations between the excitation and inhibition factors were low. Specifically, the SES was not significantly associated with either SIS-1 ($r = -.07$) or SIS-2 ($r = -.11$). In addition, SIS-1 and SIS-2 were related but not highly correlated ($r = .28$), which indicates that they do not measure substantially overlapping constructs. Further supporting the Dual Control Model, the SES and SIS factors were only weakly to moderately correlated with general excitation and inhibition propensities ($r_s = .11-.31$)—as measured by the Behavioral Inhibition/Behavioral Activation Scales (BIS/BAS; Carver & White, 1994). The SIS/SES also showed weak to moderate correlations with other sexuality-related scales (SES: $r = .45$, SIS-1: $r = -.11$, SIS-2: $r = -.29$)—especially the Sexual Opinion Survey (Fisher, Byrne, White, & Kelley, 1988), which includes a few sexual excitation items but not inhibition.

Data from two other samples—one comprising undergraduate psychology students ($N = 459$; $M_{\text{age}} = 20.9$ years) and one comprising university employees and men from the local community ($N = 313$; $M_{\text{age}} = 46.2$ years)—replicated the 10-factor model (Janssen & Bancroft, 2007). Because the nested 10-in-3 model was only a slightly worse fit, most of the extant research has relied on the three higher-order factors for interpretation: SES (20 items), SIS-1 (14 items), and SIS-2 (11 items). Regarding the clinical relevance of these factors (and consistent with the predictions of the Dual Control Model), low SES scores and high SIS-1 scores have been associated with erectile problems in samples of heterosexual men (Bancroft et al., 2005).

The SIS/SES was adapted for women and used in a study of 2,045 undergraduate students (1,067 women and 978 men) to examine the factor structure, reliability, and validity of SIS/SES scores in women (Carpenter et al., 2008). Confirmatory factor analyses of women's SIS/SES scores provided moderate support for the higher-order model found in men. Although women scored higher on sexual inhibition and lower on sexual excitation compared with men, as expected, both women and men showed substantial variability in sexual inhibition and excitation scores. As researchers had previously found in men, correlations in women between the sexual excitation (SES) factor and the two sexual inhibition factors (SIS-1 and SIS-2) were low, while the SIS-1 and SIS-2 factors exhibited a moderate positive correlation (Janssen & Bancroft, 2007).

Test-retest reliability, convergent validity, and discriminant validity were acceptable for women and similar to the psychometric properties of the SIS/SES among men (Carpenter et al., 2008). Further, tests of factorial invariance showed that the structure of SIS/SES scores was the same for men and women; however, the tested models fit men's data slightly better than women's (Carpenter et al., 2008). Despite the model fitting adequately, there were several item-level differences between the solutions for men and women—indicating the need for a revised measure that better demonstrated measurement invariance across gender.

Sexual Inhibition/Sexual Excitation Scales-Short Form (SIS/SES-SF). Because not all 45 SIS/SES items functioned similarly for women and men, Carpenter et al. (2011) designed a short form by selecting the items that represented the three-factor structure equally well for women and men. Specifically, these researchers identified items that showed no gender differences in item intercepts or residual variances. Only 14 items under the three-factor model demonstrated measurement invariance across women and men. The SIS/SES-SF demonstrated

comparable test-retest reliability and convergent/discriminant validity to the SIS/SES (Janssen & Bancroft, 2007). Correlations between the 45-item SIS/SES and the 14-item SIS/SES-SF were identical for women and men: SES ($r = .90$), SIS-1 ($r = .80$), and SIS-2 ($r = .80$).

The three-factor solution for these 14 items reflected themes that were shared by women and men in their relevance to sexual excitation or sexual inhibition (Carpenter et al., 2011). First, SES themes for both women and men included sexual arousal from relational interactions, rather than solo activities like fantasy or erotica. Second, SIS-1 themes shared by women and men involved distraction, focus on sexual performance, and past problems with arousal; concerns about pleasing partners were more relevant for men. Third, shared SIS-2 themes included risk of getting caught or contracting a sexually transmitted infection; concerns about pregnancy or pain were more relevant for women. Based on these findings from the SIS/SES and SIS/SES-SF in samples of women and men, it is clear that some themes related to sexual excitation and sexual inhibition are relevant to both men and women; however, there are also some arousal themes that seem to be less shared across gender (Bancroft et al., 2009). Because the SIS/SES was originally developed for men and based on literature related to male sexual response, the SIS/SES-SF likely does not capture all of the sexual arousal themes that are relevant to both women and men.

Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W). Despite the acceptable psychometric properties of the SIS/SES in women (Carpenter et al., 2008), Graham et al. (2006) questioned whether this questionnaire truly represents women's dispositions for sexual excitation and sexual inhibition. As a result, these researchers developed the SESII-W.

Graham et al. (2006) cited four reasons for developing an original measure of sexual excitation and sexual inhibition for women. First, research showed that inhibitory mechanisms may be better developed in women (Bjorklund & Kipp, 1996), which can restrict women's

variability in their propensity for sexual inhibition (Bancroft, 1999). Second, it is possible that inhibition occurs earlier in an interaction for women than it does for men (Tolman, 2002). Third, there are potential threats to women's sexual response that may not be reflected in the SIS/SES: concerns about reputation (Tiefer, 2001), anxieties about body image (Taylor, Rosen, & Leiblum, 1994), and fears about unwanted pregnancy (Sprecher & Regan, 1996). In addition, relationship context might be particularly relevant for women regarding both sexual excitation and sexual inhibition (Graham et al., 2006). Fourth, researchers had previously experienced difficulties with adapting measures designed for men to assess women's sexual functioning. For example, the Brief Index of Sexual Functioning for Women (BISF-W) demonstrated worse internal consistency and test-retest reliability than its predecessor that was designed for men (i.e., Brief Sexual Function Questionnaire [BSFQ]; Taylor et al., 1994). Taylor et al. (1994) posited that "female sexuality may be affected by a broader range of psychological and interpersonal variables than is male sexuality" (p. 637). For these reasons, Graham et al. (2006) questioned whether the SIS/SES items were suited to capture the diversity of factors that could affect women's sexual arousal.

To inform the development of a new measure of sexual excitation and sexual inhibition in women, Graham et al. (2004) explored factors that could affect sexual arousal in relation to the concepts of sexual excitation and sexual inhibition in focus groups comprising women at different ages, ethnicities, and sexual orientations. The myriad excitatory or inhibitory mechanisms of sexual arousal that women cited were classified into eight categories: (1) self-focused; (2) partner-focused; (3) relationship dynamics/interaction; (4) elements of the sexual interaction; (5) setting; (6) sexual or erotic stimuli; (7) hormones, fertility, contraception, and STDs; and (8) alcohol or drug use. According to Graham et al. (2006), many of these reflected

aspects of sexual excitation or sexual inhibition that are not well represented by the SIS/SES items and that may be particularly relevant to women (e.g., comfort with one's body; feeling used by one's partner).

Items were written based on these categories from the focus group data. Graham et al. (2006) paid special attention to the wording of items and attempted to include language and phrases used by their participants. Initially, 115 items were developed to reflect situations that might influence sexual excitation and sexual inhibition or general statements regarding arousability and inhibition. Similar to the SIS/SES, items on the SESII-W are rated on a 4-point Likert-type scale (i.e., *Strongly Agree* to *Strongly Disagree*).

The original sample used to validate the SESII-W included 655 women ($M_{\text{age}} = 33.9$ years). Factor analysis indicated that 36 items loaded onto eight first-order factors and two second-order factors—one for sexual excitation and one for sexual inhibition (Graham et al., 2006). The sexual excitation factor comprised five of the eight first-order factors: Arousability (9 items), Sexual Power Dynamics (4 items), Smell (2 items), Partner Characteristics (4 items), and Setting (4 items). The sexual inhibition factor comprised the other three first-order factors: Relationship Importance (6 items), Arousal Contingency (3 items), and Concerns about Sexual Function (4 items). Similar to the psychometric properties of the SIS/SES, this 36-item measure of sexual excitation and sexual inhibition in women demonstrated acceptable test-retest reliability (SE: $r = .81$, SI: $r = .82$), and there was satisfactory evidence of convergent and discriminant validity. Regarding the BIS/BAS (Carver & White, 1994), scores on the sexual excitation factor of the SESII-W were associated with BAS ($r = .41$); the sexual inhibition factor was associated with BIS ($r = .30$). Further, sexual excitation was positively correlated ($r = .53$)—and sexual inhibition negatively correlated ($r = -.41$)—with the Sexual Opinion Survey (SOS;

Fisher et al., 1988). Overall, the SESII-W demonstrated psychometric properties that were considered adequate.

Sexual Excitation/Sexual Inhibition Scale for Women and Men (SESII-W/M). The researchers who developed the SESII-W also sought to modify this measure to function similarly in both women and men. Thus, the SESII-W/M was created (Milhausen et al., 2010). In addition to the original 115 items of the SESII-W, Milhausen et al. (2010) added two parallel items for men's experiences. Specifically, they added "Women's bodies can really excite me sexually" to complement "Men's bodies can really excite me sexually." They also added "I can become more easily aroused early in the morning" to coincide with "I can become more easily aroused during certain times of my menstrual cycle." The resulting 117 items were then completed by a college student sample of 440 women ($M_{age} = 21.4$ years) and 328 men ($M_{age} = 22.4$ years).

Exploratory factor analysis found an eight-factor solution based on 34 items. However, two factors comprised only two items each, which may cause a potential problem with regard to adequately identifying a factor due to insufficient number of items. As such, these 4 items were removed, and a confirmatory factor analysis tested the six-factor structure of the remaining 30 items (Milhausen et al., 2010). The six-factor model fit the data well. The 30 items included in the SESII-W/M varied to some degree from the 36 included in the SESII-W, but there was substantial overlap between the factors identified. Specifically, five factors of the SESII-W/M had direct parallels to those of the SESII-W (i.e., Arousability, Partner Characteristics, Setting, Relationship Importance, and Concerns About Sexual Function). The sixth factor of the SESII-W/M—labeled Dyadic Elements of the Sexual Interaction—is not reflected by the SESII-W.

Milhausen et al. (2010) then tested for measurement invariance by gender. They found support for configural and metric invariance, but they seem to have been unable to successfully

constrain the error residuals (i.e., strict invariance) to be equivalent for both women and men. In sum, they determined that the SESII-W/M provided strong evidence for the reliability and validity of a factor structure comprising six factors that represent either the enhancement or inhibition of sexual arousal across genders. Even though the SESII-W/M was found to function similarly in women and men, there were significant gender differences in mean comparisons of the composite scores for all six subscales (Milhausen et al., 2010).

Revisiting Male's Sexual Response. Because the development of the SIS/SES questionnaire did not include a qualitative phase like that of the SESII-W, it was decided that focus groups with men could provide important information about the comprehensiveness of the types of items included in the scale (Janssen et al., 2008). Therefore, these researchers conducted focus groups ($N = 50$; $M_{\text{age}} = 35.2$) using procedures and questions similar to Graham et al.'s (2004) study with women.

For the most part, Janssen et al. (2008) found that men discussed themes regarding sexual excitation and sexual inhibition that were consistent with those discussed by women in the previous focus groups. Contradicting much of the extant research on men's sexuality at that point, the findings from Janssen et al.'s (2008) focus groups suggested that men's sexual arousal is complex and multifaceted. Some men discussed the importance of contextual variables (e.g., setting, timing, intoxication) in facilitating or reducing their sexual arousal. Others discussed how negative mood could reduce or even facilitate their sexual response. Still others discussed how partner characteristics (e.g., attractiveness, intelligence) and the connection with their partner could influence their sexual arousal. Thus, while there is evidence that sexual excitation and sexual inhibition vary between women and men; these constructs of the Dual Control Model also vary substantially among women and men.

Measurement of Sexual Excitation and Sexual Inhibition in Other Languages

The original validation studies for the SIS/SES, SIS/SES-SF, SESII-W, and SESII-W/M were all conducted in the United States with English-speaking participants, but each of these measures has been translated and validated in several languages. While the SESII-W has been translated to Dutch (Bloemendaal & Laan, 2015), to our knowledge, no published study to date has translated the SIS/SES, SIS/SES-SF, and SESII-W/M to Dutch and consequently validated their psychometric properties.

Because one in five Dutch people disclose a problem concerning sexual response at some point in their life (Ter Kuile, Brauer, & Laan, 2006), Bloemendaal and Laan (2015) sought to validate the SESII-W for use in Dutch-speaking populations. After translating the SESII-W for use in clinical settings, these researchers assessed its factor structure, test-retest reliability, construct validity, and discriminative validity. A valid and reliable translation of the SESII-W could be used as an indicator of potential sexual difficulties—one that might be able to guide treatment in clinical settings; translated versions of the SIS/SES, SIS/SES-SF, and SESII-W/M may be similarly beneficial.

Bloemendaal and Laan (2015) conducted confirmatory factor analysis (CFA) and expected the factor structure of the Dutch SESII-W to resemble to structure found in the original validation study: eight first-order and two second-order factors (Graham et al., 2006). Using a sample of women able to read Dutch ($N = 445$; $M_{\text{age}} = 28.1$ years), these researchers found that this factor structure fit the data adequately; however, modification indices identified one item as problematic. Specifically, “It is easier for me to become aroused with someone who has ‘relationship potential’” highly loaded onto seven of the eight first-order factors. After consulting the creators of the SESII-W, Bloemendaal and Laan (2015) decided to remove this item from

further analyses. In addition, three of the remaining 35 items were found to have poor psychometric properties, but because the original validation study did not find these three items to function problematically (Graham et al., 2006), Bloemendaal and Laan (2015) did not recommend simply removing them unless additional reports replicate their findings.

Similar to Graham et al. (2006), Bloemendaal and Laan (2015) found that fit was worse when including the two higher-order factors. However, their findings suggested that the sexual excitation and sexual inhibition factors had clinical utility in that they were able to discriminate between participants with and without sexual problems. Compared with asymptomatic women, symptomatic women had higher propensities for sexual inhibition and lower propensities for sexual excitation. In sum, the satisfactory psychometric properties of a 35-item SESII-W were supported within a Dutch-speaking sample (Bloemendaal & Laan, 2015).

Even though the SIS/SES, SIS/SES-SF, and SESII-W/M have not been validated in Dutch, there might be insight gained from the validation of these measures in German. Velten et al. (2018) assessed the psychometric properties of the German versions of the SIS/SES-SF and the SESII-W/M using a large population-based sample of 2708 participants ($M_{age} = 51.2$).

First, the three-factor structure of the original 14-item SIS/SEF-SF did not adequately fit their data for the German version. To improve data-model fit, Velten et al. (2018) eliminated one item (i.e., “Once I have an erection/am sexually aroused, I want to start intercourse right away before I lose my erection/arousal.”) and added a second sexual excitation factor. This fourth total factor comprised two items: “When I start fantasizing about sex, I quickly become sexually aroused” and “When I see others engaged in sexual activities, I feel like having sex myself.”). However, as noted previously, factors with only two items can be unstable.

Second, the six-factor structure of the original 30-item SESII-W/M did not adequately fit their data for the German version. To improve data-model fit, Velten et al. (2018) removed six items that all significantly loaded onto multiple factors other than the intended one. These items included (1) “If I am very sexually attracted to someone, I don’t need to be in a relationship with that person to become sexually aroused,” (2) “Seeing a partner doing something that shows his/her talent can make me very sexually aroused,” (3) “Unless things are ‘just right’ it is difficult for me to become sexual aroused,” (4) “I get really turned on if I think I may get caught while having sex.,” (5) “If I am worried about taking too long to become aroused, this can interfere with my arousal,” and (6) “Having sex in a different setting than usual is a real turn on for me.” Velten et al. (2018) concluded that these ill-fitting items of the German SESII-W/M did not sufficiently differentiate between sexual excitation and sexual inhibition.

Because Velten et al. (2018) collected data from women and men for these measures, they were able to test whether they functioned similarly in women and men. The resulting 13-item German version of the SIS/SES-SF exhibited strong measurement invariance by gender, and the 24-item German version of the SESII-W/M demonstrated partial measurement invariance by gender.

Present Study

Previous research has demonstrated good test-retest reliability, convergent validity, discriminant validity, and construct validity of the SESII-W in Dutch and the SIS/SES-SF and SESII-W/M in German (Bloemendaal & Laan, 2015; Velten et al., 2018). Even though the English version of the SIS/SES was not found to be measurement invariant by gender (Carpenter et al., 2008), Velten et al. (2018) noted that future studies should include the complete 45-item measure to identify which items constitute the best short forms for non-English languages. As

such, there remained a need to translate the SIS/SES, SIS/SES-SF, and SESII-W/M into Dutch and evaluate their psychometric properties.

In the only published study to validate the psychometric properties of a measure of sexual excitation and sexual inhibition in Dutch (Bloemendaal & Laan, 2015), the authors suggested that future researchers compare these measures (i.e., SIS/SES, SIS/SES-SF, and SESII-W/M) to determine which questionnaire may best be able to assess sexual excitation and sexual inhibition in samples of both women and men. But, to our knowledge, no study has collected data from both women and men using the SIS/SES, SIS/SES-SF, and SESII-W/M. Therefore, one goal of the present study was to evaluate the psychometric properties of Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M in a sample comprising both women and men. We also tested for measurement invariance across gender.

CHAPTER 3

RESEARCH METHODOLOGY

Samples and Procedures

The present study used data from two previous data collections. These secondary data were collected from May 2017 to April 2019. Their procedures were approved by the university's research ethics committee.

The first study recruited Dutch-speaking participants via social media and online forums. In total, 1508 people participated in this online study, which included the SIS/SES and SESII-W/M in a counterbalanced order. Participants were removed for being younger than 18 ($n = 53$), not providing their age ($n = 10$), indicating "other" for gender ($n = 6$), skipping the SIS/SES or the SESII-W/M ($n = 383$), or having missing values ($n = 153$). Therefore, 903 participants (59.9%) in the first study completed both questionnaires and were included in the analytic sample. About three-quarters (76.2%) of participants in this first study identified as women ($n = 688$). On average, participants in this first study were 25.8 years old ($SD = 7.6$), ranging from 18 to 67.

The second study recruited Dutch-speaking couples from the Flemish region of Belgium via newspaper and online ads, as well as posters placed in local businesses (e.g. bars, restaurants, theaters), at universities, and in offices of physicians and mental health professionals. To be eligible for the study, couples had to be in a heterosexual relationship for at most three years and partners had to be between 18 and 30 years of age. Couples needed to be spending at least four nights a week together or cohabitating (but not cohabitating for more than two years). They were excluded if they had a history of living together with or being married to a previous partner. Participants could not have children with their current or a previous partner, nor could the female

participants be pregnant at the time of inclusion. Individuals were excluded if they were in treatment for sexual dysfunctions. In total, 126 couples took the baseline survey that included the SIS/SES and SESII-W/M, which were presented in a counterbalanced order. We only included men from this study for two reasons: (1) to avoid complications regarding the dependency of the data for couples and (2) to reduce bias by increasing the proportion of male participants. Only one participant was removed for not completing the surveys. Therefore, 125 male participants (99.2%) in the second study completed both questionnaires. On average, participants in this second study were 23.9 years old ($SD = 2.4$), ranging from 18 to 30.

Overall, our analytic sample across the two studies comprised 1028 people. About two-thirds (66.9%) of participants in the present study identified as women ($n = 688$). Women in the analytic sample ($M_{age} = 25.1$, $SD = 6.7$) were younger than the men, ($M_{age} = 26.6$, $SD = 8.0$), $t(579.5) = -3.20$, $p = .003$, Hedges' $g = .21$.

Measures

Translation process. Several researchers fluent in both English and Dutch translated the English items of the SIS/SES, SIS/SES-SF, and SESII-W/M to Dutch. The lead translator—a native Dutch speaker and developer of the SIS/SES—verified that each of the final Dutch items adequately communicated the intent of the original English items. The Dutch items for the SIS/SES and SIS/SES-SF that were used in the present study are listed in the Appendix A, and those for the SESII-W/M are provided in Appendix B.

Sexual Inhibition Scales/Sexual Excitation Scales (SIS/SES). The original SIS/SES (Janssen et al., 2002) is a self-report questionnaire that assesses sexual excitation and sexual inhibition with 45 items across three factors: Sexual Excitation Scale (20 items), Sexual Inhibition Scale–1 (14 items), and Sexual Inhibition Scale–2 (11 items). Response options were

provided on a four-point Likert-type scale: 1 (“Strongly Disagree”) to 4 (“Strongly Agree”). For ease of comparison, we reversed the response option anchors for the SIS/SES to match that of the SESII-W/M. Thus, higher scores on the SIS/SES in this study indicate greater agreement with a given item—and therefore higher sexual excitation or higher sexual inhibition. Two items from the SIS/SES are reverse-scored: item 30 (“During sex, pleasing my partner sexually makes me more aroused”) and item 31 (“When I notice that my partner is sexually aroused, my own arousal becomes stronger”). Further, 12 items used different wording for women and men (e.g., “vaginal lubrication” vs. “erection”); refer to the Appendix A for specific item wording differences. Psychometric properties of the English version of the SIS/SES have been considered satisfactory (Janssen et al., 2002).

Sexual Inhibition Scales/Sexual Excitation Scales-Short Form (SIS/SES-SF).

Because not all 45 SIS/SES items functioned similarly for women and men, a 14-item short form was created by selecting the items that represented the three-factor structure similarly well for women and men (Carpenter et al., 2011). Specifically, these items assess sexual excitation and sexual inhibition across the same three factors as the original 45-item SIS/SES: Sexual Excitation Scale (6 items), Sexual Inhibition Scale–1 (4 items), and Sexual Inhibition Scale–2 (4 items). Two items used different wording for women and men (e.g., “arousal” vs. “erection”); refer to the Appendix A for specific item wording differences. Psychometric properties of the English version of the SIS/SES-SF have been considered satisfactory, and this measure has demonstrated measurement invariance across gender (Carpenter et al., 2011).

Sexual Excitation/Sexual Inhibition Inventory for Women and Men (SESII-W/M).

The original SESII-W/M (Milhausen et al., 2010) is a self-report questionnaire that assesses sexual excitation and sexual inhibition with 30 items across six factors: Inhibitory Cognitions (8

items), Relationship Importance (5 items), Arousability (5 items), Partner Characteristics and Behaviors (5 items), Setting (4 items), and Dyadic Elements of the Sexual Interaction (3 items). Response options were provided on a four-point Likert-type scale: 1 (“Strongly Disagree”) to 4 (“Strongly Agree”). Higher scores for the SESII-W/M indicate greater agreement with a given item—and therefore higher levels of sexual excitation or higher levels of sexual inhibition. Two items are reverse-scored: item 24 (“If it is possible someone might see or hear us having sex, it is more difficult for me to get aroused”) and item 25 (“I find it harder to get sexually aroused if other people are nearby”). Psychometric properties of the English version of the SESII-W/M have been considered satisfactory, and this measure has demonstrated partial measurement invariance across gender (Milhausen et al., 2010).

Analysis

Descriptive statistics, bivariate correlations by gender, and mean differences by gender were conducted for the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M. We ran these analyses with SPSS 26.

We then analyzed our data with structural equation models using the *lavaan* and *semTools* packages in *R* (Rosseel, 2012; Joergensen, Pornprasertmanit, Schoemann, & Rosseel, 2020, respectively). Before conducting tests of measurement invariance, we first assessed whether the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M represented the proposed 3- and 6-factor structures, respectively (Janssen et al., 2002; Milhausen et al., 2010). To achieve this, we conducted confirmatory factor analysis (CFA) for these scales. Similar to other validation studies for these measures (e.g., Bloemendaal & Laan, 2015), we used the variance adjusted weighted least-squared method (WLSMV) estimator. The WLSMV estimation technique is recommended for data that are nonnormally distributed or categorical in nature

(Muthén & Muthén, 2009). Because all items across the measures used four-point Likert-type scales, they should be considered categorical.

We examined fit statistics and factor loadings to determine if the proposed factor structures fit our data well. Regarding an absolute index of data-model fit, the χ^2 value and associated degrees of freedom for each model were reported; non-significant χ^2 values indicated the model fit the data well. Because χ^2 values for models estimated with WLSMV do not follow a χ^2 distribution, the *lavaan* program in *R* uses a scaled χ^2 value according to formulas provided by Satorra (2000) (Rosseel, 2012). Given the present study's large sample and evidence that the χ^2 statistic is sensitive to sample size (MacCallum, Browne, & Sugawara, 1996; Millsap, 2007), we complemented the χ^2 statistic with alternative fit indices. Hu and Bentler (1999) recommended that the comparative fit index (CFI) should be greater than .95, the root mean square error of approximation (RMSEA) less than .06, and the standardized root mean square residual (SRMR) less than .08. On the basis of χ^2 values, alternative fit indices, and substantive theoretical consideration, we assessed model fit (Byrne, Shavelson, & Muthén, 1989).

For the Dutch versions of measures that adequately resembled the factor structures of the original English versions, we conducted tests of measurement invariance to determine whether the measures functioned similarly across gender. As recommended by Green and Thompson (2012), we started by examining whether the underlying factor structures were similar between groups (i.e., configural invariance; Vandenberg & Lance, 2000). Next, the factor loadings were constrained across groups (i.e., metric invariance; Horn & McArdle, 1992), and we tested whether the data-model fit significantly worsened. Finally, we constrained the intercepts and then the error variances across groups (i.e., scalar [Steenkamp & Baumgartner, 1998] and

residual invariance [Meredith, 1993], respectively) and again tested for worse fit with each progressive model.

In general, if the data-model fit did not decline with the addition of constraints, the next step of set of constraints were applied. However, if the fit substantially worsened, then we implemented partial measurement invariance procedures as recommended by Byrne et al. (1989). Specifically, we identified individual noninvariant measurement parameters by examining modification indices, which estimate the expected decrease in the absolute fit index if each constrained parameter were individually relaxed. We then sequentially released constraints on parameters that had the largest effects on the χ^2 value and assessed changes in parameter estimates under alternative specifications. We continued this process of partial measurement invariance until the scaled χ^2 difference became non-significant.

Scaled χ^2 difference tests were used to compare nested models for each type of measurement invariance—again using formulas provided by Satorra (2000). A non-significant scaled χ^2 difference test would demonstrate that the nested models fit the data similarly (i.e., the pattern of invariance in question is tenable). We also calculated change scores for each of the alternative fit indices. A better data-model fit was reflected by increases in CFI and decreases in RMSEA and SRMR. Regarding changes in the alternative fit indices when comparing models for tests of measurement invariance, Chen (2007) recommended that the change in CFI should not decrease more than .010, the change in RMSEA should not increase more than .015, and the SRMR should not increase more than .030 for metric invariance or .015 for scalar or residual invariance.

CHAPTER 4

RESULTS

Descriptive Statistics

Descriptive statistics for the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M are presented in Table 1. The average composite scores for the subscales from each of these three scales were approximately normally distributed or did not have substantially non-normal distributions (Ryu, 2011). The subscales for the SIS/SES and SIS/SES-SF demonstrated less variability regarding internal consistency than those for SESII-W/M.

Correlations by Gender

Bivariate correlations between the factors of the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M are presented by gender in Table 2. The Sexual Excitation subscale (SES) of the SIS/SES and SIS/SES-SF was positively associated with the Arousability and Partner Characteristics factors on the SESII-W/M for both women and men. The Sexual Inhibition–1 subscale (SIS–1) of the SIS/SES-SF was positively associated with the other four subscales of the SESII-W/M (i.e., Inhibitory Cognitions, Relationship Importance, Setting, and Dyadic Elements) for both women and men. However, the SIS–1 subscale of the SIS/SES was not significantly correlated with Dyadic Elements for women or with Relationship Importance for men. Finally, the Sexual Inhibition–2 subscale of the SIS/SES and SIS/SES-SF was positively associated with three subscales of the SESII-W/M (i.e., Inhibitory Cognitions, Relationship Importance, and Dyadic Elements) for both women and men; further, this subscale was negatively associated with Arousability for both women and men.

Mean Differences by Gender

Mean differences by gender for the subscales of the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M are presented in Table 3. Regarding the SIS/SES and SIS/SES-SF, women scored significantly higher than men on SIS–1 and SIS–2 and significantly lower than men on SES. Regarding the SESII-W/M, women scored significantly higher than men on Inhibitory Cognitions, Relationship Importance, and Dyadic Elements and significantly lower than men on Arousability. There were no significant gender differences regarding Partner Characteristics or Setting.

Confirmatory Factor Analyses

The proposed three-factor structure for the Dutch version of the SIS/SES did not fit the data well in our sample of women and men, $\chi^2(942) = 4424.09$, $p < .001$, CFI = .865, RMSEA = .060, SRMR = .070. Neither the χ^2 test statistic nor the alternative fit indices supported the data-model fit for the Dutch version of the SIS/SES. Because the SIS/SES fit the data poorly, we did not proceed to evaluate measurement invariance for this scale.

However, this three-factor structure fit the data well regarding the Dutch version of the SIS/SES-SF in our sample of women and men, $\chi^2(74) = 195.44$, $p < .001$, CFI = .962, RMSEA = .040, SRMR = .047. Even though the χ^2 test statistic was significant, the alternative fit indices met recommended cut-offs and, thus, suggested that the model fit the data well for the Dutch version of the SIS/SES-SF.

The proposed six-factor structure fit the data well regarding the Dutch version of the SESII-W/M in our sample of women and men, $\chi^2(390) = 1409.29$, $p < .001$, CFI = .945, RMSEA = .050, SRMR = .060. Even though the χ^2 test statistic was significant, the alternative fit indices suggested that the model fit the data well for the Dutch version of the SESII-W/M.

Measurement Invariance by Gender

Tests of measurement invariance across gender for the Dutch versions of the SIS/SES-SF and SESII-W/M are presented in Table 4.

SIS/SES-SF. The model imposing configural invariance across gender for the Dutch version of the SIS/SES-SF demonstrated good data-model fit according to the alternative fit indices, $\chi^2(148) = 268.16$, $p < .001$, CFI = .958, RMSEA = .040, SRMR = .051. We then tested a model that constrained the factor loadings across groups, which did not significantly worsen data-model fit, $\Delta\chi^2 = 14.50$, $\Delta df = 11$, $p = .206$, $\Delta CFI = -.004$, $\Delta RMSEA < .001$, $\Delta SRMR = .002$. Thus, metric invariance for the Dutch version of the SIS/SES-SF was tenable.

Next, we tested a model that constrained the intercepts across groups; this model fit the data significantly worse than the one testing metric invariance, $\Delta\chi^2 = 54.88$, $\Delta df = 11$, $p < .001$, $\Delta CFI = -.003$, $\Delta RMSEA = .004$, $\Delta SRMR = .003$. Because the absolute fit index for this model was poor, we rejected the initial model testing scalar invariance; however, we pursued partial scalar invariance given the slight changes in the alternative fit indices, which were below recommended cut-off values. Therefore, we released the constraints for intercepts starting with the largest modification index and continued until the absolute fit index was no longer significant. In sum, we allowed the model to freely estimate the intercepts across groups for 4 of the 14 items.¹ The resulting model fit the data similarly to the model testing metric invariance, $\Delta\chi^2 = 12.41$, $\Delta df = 7$, $p = .087$, $\Delta CFI = -.001$, $\Delta RMSEA < .001$, $\Delta SRMR < .001$. Thus, partial scalar invariance for the Dutch version of the SIS/SES-SF was tenable.

¹ Three SES items: (16) When I talk to someone on the telephone who has a sexy voice, I become sexually aroused, (6) When an attractive person flirts with me, I easily become sexually aroused, and (44) When a sexually attractive stranger accidentally touches me, I easily become aroused. One SIS-2 item: (22) If I am masturbating on my own and I realize that someone is likely to come into the room at any moment, I will lose my erection.

Finally, we tested a model that constrained the error variances across groups (except for the four items whose intercepts were not invariant); this model fit the data similarly to the one testing partial scalar invariance, $\Delta\chi^2 = 14.07$, $\Delta df = 10$, $p = .170$, $\Delta CFI < .001$, $\Delta RMSEA = -.001$, $\Delta SRMR = .002$. Thus, partial residual invariance for the Dutch version of the SIS/SES-SF was tenable.

SESII-W/M. The model imposing configural invariance across gender for the Dutch version of the SESII-W/M demonstrated borderline data-model fit according to the alternative fit indices, $\chi^2(780) = 1731.87$, $p < .001$, $CFI = .938$, $RMSEA = .049$, $SRMR = .064$. Given that two of the three alternative fit indices suggested adequate data-model fit, we then tested a model that constrained the factor loadings across groups, which did not significantly worsen data-model fit, $\Delta\chi^2 = 30.60$, $\Delta df = 24$, $p = .166$, $\Delta CFI = -.003$, $\Delta RMSEA < .001$, $\Delta SRMR = .002$. Thus, metric invariance for the Dutch version of the SESII-W/M was tenable.

Next, we tested a model that constrained the intercepts across groups; this model fit the data significantly worse than the one testing metric invariance, $\Delta\chi^2 = 82.91$, $\Delta df = 24$, $p < .001$, $\Delta CFI = -.003$, $\Delta RMSEA = .001$, $\Delta SRMR = .002$. Because the absolute fit index for this model was poor, we rejected the initial model testing scalar invariance; however, we pursued partial scalar invariance given the slight changes in the alternative fit indices. Therefore, we released the constraints for intercepts starting with the largest modification index and continued until the absolute fit index was no longer significant. In sum, we allowed the model to freely estimate the intercept across groups for 7 of the 30 items.² The resulting model fit the data similarly to the

² Two Inhibitory Cognitions items: (5) Sometimes I feel so “shy” or self-conscious during sex that I cannot become fully aroused and (8) If I am worried about taking too long to become aroused, this can interfere with my arousal. Two Relationship Importance items: (23) If I think that I am being used sexually it completely turns me off and (17) If I am very sexually attracted to someone, I don’t need to be in a relationship with that person to become sexually aroused [Reversed]. One Arousability item: (10) I think about sex a lot when I am bored. Two Partner Characteristics items: (20) If a partner surprises me by doing chores, it sparks my sexual interest and (15) If I see a partner interacting well with others, I am more easily sexually aroused.

model testing metric invariance, $\Delta\chi^2 = 21.37$, $\Delta df = 17$, $p = .210$, $\Delta CFI < .001$, $\Delta RMSEA < .001$, $\Delta SRMR < .001$. Thus, partial scalar invariance for the Dutch version of the SESII-W/M was tenable.

Finally, we tested a model that constrained the error variances across groups (except for the seven items whose intercepts were not invariant); this model fit the data significantly worse than the one testing partial scalar invariance, $\Delta\chi^2 = 45.58$, $\Delta df = 23$, $p = .003$, $\Delta CFI = .002$, $\Delta RMSEA = .001$, $\Delta SRMR < .001$. Because the absolute fit index for this model was poor, we rejected the initial model testing residual invariance; however, we pursued partial residual invariance given the slight changes in the alternative fit indices. Therefore, we released the constraints for error variances starting with the largest modification index and continued until the absolute fit index was no longer significant. In sum, we allowed the model to freely estimate the error variance for eight items.³ The resulting model fit the data similarly to the model testing partial scalar invariance, $\Delta\chi^2 = 27.99$, $\Delta df = 22$, $p = .176$, $\Delta CFI < .001$, $\Delta RMSEA = .001$, $\Delta SRMR < .001$. Thus, partial residual invariance for the Dutch version of the SESII-W/M was tenable.

³ The seven items whose intercepts were not invariant and one Inhibitory Cognitions item: (28) Unless things are “just right” it is difficult for me to become sexually aroused.

CHAPTER 5

DISCUSSION

This study investigated the psychometric properties of Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M. The 3-factor structure of the 45-item SIS/SES did not fit the data well in a Dutch-speaking sample of women and men. However, results from the present study supported the original factor structures for the 3-factor 14-item SIS/SES-SF and 6-factor 30-item SESII-W/M. That the SIS/SES did not function well in our sample of women and men may be due to it having been developed to measure sexual excitation and sexual inhibition specifically in men (Janssen et al., 2002). However, both the SIS/SES-SF and SESII-W/M were created with the intention of being used in samples comprising both women and men (Carpenter et al., 2008; Milhausen et al., 2011, respectively). Even though previous research has called for direct comparisons of these measures (Graham et al., 2006), no previous study of which we are aware has included the SIS/SES, SIS/SES-SF, and SESII-W/M in a sample of women and men.

The second aim of the present study was to examine and compare how similarly the Dutch versions of these measures functioned across women and men. Corroborating previous research on the English versions of these measures (e.g., Carpenter et al., 2011; Milhausen et al., 2010), the Dutch version of the SIS/SES did not demonstrate measurement invariance across gender, but the Dutch versions of the SIS/SES-SF and SESII-W/M did. Specifically, both the SIS/SES-SF and SESII-W/M exhibited configural invariance, metric invariance, partial scalar invariance, and partial residual invariance across genders. Proportionally, these two measures were comparably invariant; 10 out of 14 (71.4%) SIS/SES-SF items and 22 out of 30 (73.3%) SESII-W/M items functioned similarly for women and men.

To achieve partial measurement invariance across gender for the SIS/SES-SF, we allowed the intercepts and residuals of four items to be freely estimated for women and men. Three of these items asked participants about their sexual excitation in response to somebody that they did not necessarily have an interpersonal connection with (i.e., someone on the telephone, an attractive person, a stranger). Potentially explaining this trend, women might experience sexual response to people with which they lack a meaningful connection differently than men or might interpret these items differently than men. Indeed, previous research has shown that women may be more likely to “need for sex to occur within a specific relationship context to facilitate sexual arousal” (Graham et al., 2006, p. 401). The fourth item that failed to demonstrate invariance across gender involved masturbation. Research has consistently shown that women and men experience and conceptualize masturbation differently (Fahs & Frank, 2014; Leitenberg, Detzer & Srebnik, 1993), which may be the underlying cause for this item not functioning similarly across these genders.

To achieve partial measurement invariance across gender for the SESII-W/M, we allowed the intercepts of seven items and residuals of eight items to be freely estimated for women and men. Similar to the SIS/SES-SF, two of the troublesome items regarded the association between relationship status and sexual excitation. Specifically, these items assessed “being used sexually” by a partner and needing “to be in a relationship with the other person” to become sexually aroused. Other items that did not function similarly across gender reflected inhibitory cognitions, arousability, and partner characteristics. Why the items assessing the effects of feeling “shy or self-conscious” and worrying “about taking too long” did not function similarly for women and men is less clear because previous work has suggested that these two genders can both be subjected to negative feedback loops that perpetuate the effects of such negative inhibitory

cognitions (de Jong, 2009; McCall & Meston, 2007). Traditionally gendered social roles might account for the lack of invariance in the item regarding a partner “doing chores” as an antecedent to sexual excitation. Both women and men expect women to complete most household and childcare chores (Askari, Liss, Erchull, Staebell, & Axelson, 2010).

That both the SIS/SES-SF and SESII-W/M contained several dysfunctional items regarding measurement invariance across gender likely is due to the fact that the items comprising the former were initially written specifically for men while those comprising the latter were created for women. The best path toward achieving full measurement invariance in a scale that assesses sexual excitation and sexual inhibition will likely entail the development of original items with the express purpose of measuring these constructs without emphasizing a particular gender.

Recommendations

Based on our findings, we do not recommend that the 45-item SIS/SES be used to make comparisons across gender; the proposed factor structure did not fit the data well in our sample of women and men and consequently underestimated gender differences in sexual excitation as well as overestimated gender differences in sexual inhibition. Thus, when choosing from existing measures of sexual excitation and sexual inhibition, we recommend that researchers interested in comparing women and men consider particular aspects of the SIS-SES-SF and SESII-W/M. Even though a similar proportion of modifications were needed to achieve partial measurement invariance for these two measures, each may have unique qualities that better align with specific study goals.

The SIS/SES-SF demonstrated the best data-model fit in our sample. Even the partially invariant solution met the conservative thresholds we set for all three alternative fit indices. As such, this measure may best capture underlying propensities for sexual excitation and sexual inhibition in samples that include both women and men. That the Dutch version of the SIS/SES-SF exhibited better data-model fit than the Dutch version of the SESII-W/M when subjected to stringent tests of measurement invariance seems to corroborate previous evidence regarding the English and German versions of these measures (Carpenter et al., 2011; Milhausen et al., 2010; Velten et al., 2018). Further, this 14-item short form has a relatively strong relationship with the 45-item SIS/SES. Each SIS/SES-SF subscale was highly correlated with their corresponding SIS/SES subscale, even though they only represented about 30% of the items. These relationships were present for both women ($r_s = .83-.89$) and men ($r_s = .81-.92$). In sum, the 14-item SIS/SES-SF seems to be the most efficient approach to measuring sexual excitation and sexual inhibition and can even be used to make valid comparisons across gender. Thus, researchers concerned with participant attention or fatigue and interested in limiting the number of items they administer may prefer using the SIS/SES-SF.

The SESII-W/M also displayed positive characteristics. The proposed model for this measure did not fit the data as well as the SIS/SES-SF (indeed, one of the alternative fit indices fell short of the cutoff in each model tested). However, that the 30-item SESII-W/M demonstrated borderline to adequate data-model fit despite having twice the amount of items compared with the SIS/SES-SF suggested its potential utility for measuring more diverse aspects of sexual excitation and sexual inhibition. Thus, researchers seeking to compare women and men across a more diverse array of factors might prefer the SESII-W/M. Another positive aspect of this measure is that the wording for all 30 items are the same for both women and men; whereas,

the SIS/SES-SF varies the wording of two items, which could affect the interpretation of these items by these two groups.

Despite providing further evidence regarding the potential utility of the SIS/SES-SF and the SESII-W/M in measuring sexual excitation and sexual inhibition, the items comprising each of these scales were written independently for men and women, respectively. To achieve full measurement invariance and to increase the validity of comparisons across gender regarding levels of sexual excitation and sexual inhibition, researchers should consider developing a measure with the express intent of making such comparisons. In this way, researchers will be able to assess how well items function across gender in the formative stages—rather than in a *post hoc* manner as was done in the present study and previous studies (e.g., Velten et al., 2018).

Another option for creating a measure of sexual excitation and sexual inhibition that functions similarly in both women and men would be to create a composite scale comprising items from both the SIS/SES and SESII-W/M—a pursuit that has previously been encouraged (e.g., Graham et al., 2006). Thus, researchers could explore the possibility of creating a new measure of sexual excitation and sexual inhibition based on a combination of items from these measures that functions better in samples of women and men than any of these scales individually. Developing such measures would be helpful for researchers who are trying to compare sexual excitation and sexual inhibition across gender.

It is important to note that we are not recommending researchers attempt to create a single end-all-be-all measure of sexual excitation and sexual inhibition. Existing measures will continue to be appropriate for particular research questions; there remains merit in assessing sexual response separately by gender. However, we do recommend that researchers interested in

comparing women and men use measures that are able to validly make such comparisons—as supported by tests of measurement invariance, such as those presented in the present study.

Limitations

Several limitations of the present study warrant mention. These limitations provide clear avenues for future research on the measurement of sexual excitation and sexual inhibition in women and men.

First, the sampling strategies used in the present study may have been subjected to a self-selection bias in which people who chose to participate in this study potentially endorsed higher levels of comfort with topics regarding sexuality than the general population. Another limitation with a potential source of bias in the present study is that we combined samples from two studies with distinct protocols and sampling strategies. Also, our tests of measurement invariance may have been confounded by the fact that the men in our sample were significantly older than the women. Further, given the over-representation of women and highly educated people in our sample, our findings may not be generalizable to the larger Flemish adult population. Future endeavors to assess the psychometric properties of the SIS/SES, SIS/SES-SF, and SESII-W/M should consider collecting samples that better represent their population of interest.

Second, while our sample size was adequate to conduct the proposed analyses, we were unable to perform both exploratory and confirmatory factor analyses in separate subsamples. While an exploratory approach could be useful, we used CFA alone to test the factor structures of the SIS/SES, SIS/SES-SF, and SESII-W/M—each of which is a multidimensional psychometric instrument. However, researchers have criticized this analytic approach for being overly restrictive in its assumption that each item loads onto a single factor (Marsh, Morin, Parker, & Kaur, 2014). Thus, cases in which we reported less than adequate data-model fit might

be associated with our dependence on CFA. Other alternative techniques (e.g., exploratory structural equation modeling) might be useful to fully evaluate the factor structure of the SIS/SES, SIS/SES-SF, and SESII-W/M in future studies (Velten et al., 2018).

Third, under our structural equation model framework, we were not able to determine whether the noninvariant items favored women or men. However, future research might consider evaluating differential item functioning (DIF; Thissen, Steinberg, & Wainer, 1988) under the unidimensional item response theory (IRT) to assess whether noninvariant items were balanced in their disruption across gender or consistently favored one gender over the other. Evaluating the directions in which the items are biased can help determine if the noninvariant items have a cumulative effect in one direction or potentially cancel each other out. In addition, our analysis was limited in that the recommended thresholds we used to assess changes in the alternative fit indices when comparing models for tests of measurement invariance were proposed based on simulation studies that used maximum likelihood as the estimator (Chen, 2007); however, evidence is needed to determine whether these cutoff values are also appropriate when using WLSMV (i.e., the estimator used in the present study).

Fourth, we conducted our tests of measurement invariance using translated versions of the SIS/SES, SIS/SES-SF, and SESII-W/M, which may have induced improper functioning at the item level compared with the versions of these measures that are in their original language (i.e., English). In addition, there may be relevant cultural considerations beyond language that influenced how people interpreted and responded to these items on sexual excitation and sexual inhibition. For example, Dutch-speaking societies may experience or conceptualize sexual response slightly differently than English-speaking societies. Future examinations of measurement invariance using these measures should examine whether people in different

cultures similarly interpret and respond to the items assessing sexual excitation or sexual inhibition.

Finally, we did not assess the construct validity or test-retest reliability for the Dutch versions of the SIS/SES, SIS/SES-SF, and SESII-W/M. Future research that uses the Dutch versions of these measures or aims to translate these scales into new languages should consider assessing their discriminant and convergent validity, as well as test-retest reliability. For example, comparing how well these measures predict constructs like sexual risk-taking and sexual dysfunction in women and men would further provide evidence for circumstances under which each scale should be used (Graham et al., 2006).

Conclusion

Measures of a person's propensity for sexual excitation and inhibition have been developed separately for men (SIS/SES) and women (SESII-W), but each has been adapted for use by both genders using tests of measurement invariance (SIS/SES-SF and SESII-W/M, respectively). While the SESII-W has been successfully translated to Dutch, there have not been any published validation studies for Dutch versions of the SIS/SES, SIS/SES-SF, or SESII-W/M. In a Flemish sample of women and men, we assessed the factor structure for these scales and assessed the extent that they demonstrated measurement invariance across gender. These analyses suggested that the SIS/SES-SF may be the most efficient available tool for directly comparing sexual excitation and sexual inhibition across women and men; however, the SESII-W/M also demonstrated positive qualities. In any case, researchers interested in making comparisons across gender might consider developing a new scale that combines items from these measures or one that comprises an entirely new set of items created with the intention of functioning similarly for women and men.

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TABLES

Table 1

Descriptive Statistics for Factors of the SIS/SES, SIS/SES-SF, and SESII-W/M

Measure	<i>M</i>	<i>SD</i>	Range	Skew.	Kurt.	α
SIS/SES						
Excitation	2.64	.43	1.2 – 4.0	.01	.34	.87
Inhibition – 1	2.43	.38	1.3 – 3.6	.02	-.07	.71
Inhibition – 2	2.75	.47	1.3 – 4.0	-.13	.12	.74
SIS/SES-SF						
Excitation	2.55	.52	1.0 – 4.0	-.11	.22	.75
Inhibition – 1	2.20	.56	1.0 – 4.0	.11	-.12	.64
Inhibition – 2	2.79	.62	1.0 – 4.0	-.21	-.22	.64
SESII-W/M						
Inhibitory cognitions	2.44	.58	1.0 – 4.0	.07	-.22	.82
Relationship importance	2.82	.50	1.4 – 4.0	-.11	-.46	.37
Arousability	2.70	.59	1.0 – 4.0	-.17	-.10	.75
Partner characteristics	2.56	.61	1.0 – 4.0	-.23	-.08	.78
Setting	2.51	.35	1.0 – 4.0	-.06	1.19	.55
Dyadic elements	2.88	.54	1.0 – 4.0	-.27	.30	.49

Table 2

Bivariate Correlations between Factors of the SIS/SES, SIS/SES-SF, and SESII-W/M

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
SIS/SES												
1. Excitation	—	-.01	-.22*	.92*	-.15*	-.26*	-.18*	-.12	.76*	.49*	.08	-.02
2. Inhibition – 1	.04	—	.31*	-.01	.81*	.20*	.68*	.23*	-.13*	.05	.24*	.38*
3. Inhibition – 2	-.24*	.27*	—	-.22*	.28*	.83*	.43*	.48*	-.28*	-.02	.15*	.41*
SIS/SES-SF												
4. Excitation	.89*	.08	-.21*	—	-.11	-.25*	-.16*	-.11	.71*	.46*	.10	-.02
5. Inhibition – 1	-.04	.83*	.31*	.03	—	.21*	.61*	.19*	-.25*	-.06	.23*	.32*
6. Inhibition – 2	-.25*	.21*	.84*	-.20*	.25*	—	.30*	.34*	-.26*	-.08	.06	.29*
SESII-W/M												
7. Inhibitory cognitions	-.07	.61*	.33*	-.04	.51*	.29*	—	.39*	-.34*	-.01	.20*	.46*
8. Relationship importance	-.13	.11	.45*	-.15	.19*	.43*	.32*	—	-.15*	.09	.20*	.47*
9. Arousability	.67*	-.07	-.24*	.62*	-.11	-.19*	-.08	-.07	—	.45*	.03	-.06
10. Partner characteristics	.33*	-.04	-.06	.28*	-.05	-.03	.01	.15	.31*	—	.07	.14*
11. Setting	.07	.19*	.21*	.05	.24*	.19*	.22*	.18*	.10	.13	—	.18*
12. Dyadic elements	.00	.26*	.26*	.01	.24*	.21*	.42*	.40*	.05	.18	.19*	—

Note. Correlations for women are presented above the diagonal; correlations for men are below.

* $p < .001$.

Table 3

Gender Differences in Factors of the SIS/SES, SIS/SES-SF, and SESII-W/M

	Women (<i>n</i> = 694)		Men (<i>n</i> = 342)		<i>t</i>	<i>df</i>	<i>p</i>	Hedges' <i>g</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
SIS/SES								
Excitation	2.60	.44	2.73	.41	-4.54*	1026	<.001	.30
Inhibition – 1	2.50	.36	2.30	.39	8.27*	1026	<.001	.54
Inhibition – 2	2.86	.44	2.52	.43	11.47*	1026	<.001	.78
SIS/SES-SF								
Excitation	2.49	.53	2.67	.49	-5.33*	1026	<.001	.35
Inhibition – 1	2.28	.55	2.03	.53	7.09*	1026	<.001	.46
Inhibition – 2	2.90	.61	2.58	.60	7.80*	1026	<.001	.53
SESII-W/M								
Inhibitory Cognitions	2.59	.55	2.15	.53	12.08*	1026	<.001	.81
Relationship Importance	2.94	.47	2.58	.48	11.28*	1026	<.001	.76
Arousability	2.59	.60	2.90	.50	-8.65*	793.2 ¹	<.001	.54
Partner Characteristics	2.58	.63	2.52	.55	1.43	760.2 ¹	.153	.10
Setting	2.51	.34	2.50	.37	0.39	1026	.698	.03
Dyadic Elements	2.92	.53	2.79	.54	3.86*	1026	<.001	.24

Note. ¹The groups represented different distributions according to significant Levene's tests; their corresponding *t*-values and degrees of freedom were adjusted accordingly.

**p* < .001.

Table 4

Tests of Measurement Invariance for the SIS/SES, SIS/SES-SF, and SESII-W/M by Gender

Model	χ^2	<i>df</i>	CFI	RMSEA	SRMR	Comp.	$\Delta\chi^2$	Δdf	ΔCFI	$\Delta RMSEA$	$\Delta SRMR$	Decision
SIS/SES-SF												
1. Configural	268.16	148	.958	.040	.051	—	—	—	—	—	—	—
2. Metric	291.03	159	.954	.040	.053	1.	14.50	11	-.004	<.001	.002	Accept
3. Scalar	339.69	170	.941	.044	.056	2.	54.88*	11	-.003	.004	.003	Reject
3a. Scalar ¹	300.90	166	.953	.040	.053	2.	12.41	7	-.001	<.001	<.001	Accept
4. Residual	312.99	176	.953	.039	.055	3a.	14.07	10	<.001	-.001	.002	Accept
SESII-W/M												
1. Configural	1731.87	780	.938	.049	.064	—	—	—	—	—	—	—
2. Metric	1810.69	804	.935	.049	.066	1.	30.60	24	-.003	<.001	.002	Accept
3. Scalar	1885.37	828	.932	.050	.067	2.	82.91*	24	-.003	.001	.002	Reject
3a. Scalar ²	1827.88	821	.935	.049	.066	2.	21.37	17	<.001	<.001	<.001	Accept
4. Residual	1869.86	844	.934	.049	.067	3a.	45.58*	23	.002	-.001	<.001	Reject
4a. Residual ³	1851.62	843	.935	.048	.066	3a.	27.99	22	<.001	-.001	<.001	Accept

Note. Comp. = the comparison model. ¹The factor loading constraints for four items were released. ²The factor loading constraints for seven items were released. ³The error variance constraints for one additional item was released.

An asterisk (*) indicates that the chi-squared difference test between nested models ($\alpha = .05$).

APPENDICES

Appendix A

Dutch Translation of the Sexual Inhibition & Sexual Excitation Scales (SIS/SES; Janssen et al., 2002)

Factor	Original item	Dutch translation
SES 1.1	When I think of a very attractive person, I easily become sexually aroused.*	35. Wanneer ik aan een zeer aantrekkelijke persoon denk, word ik gemakkelijk seksueel opgewonden.
	When a sexually attractive stranger looks me straight in the eye, I become aroused.	30. Als een seksueel aantrekkelijke onbekende me recht in de ogen kijkt, word ik opgewonden.
	When I see an attractive person, I start fantasizing about having sex with him/her.	39. Als ik een aantrekkelijke persoon zie, begin ik te fantaseren over seks met hem/haar.
	When I talk to someone on the telephone who has a sexy voice, I become sexually aroused.*	16. Wanneer ik telefoneer met iemand die een sexy stem heeft, dan word ik seksueel opgewonden.
	When I have a quiet candlelight dinner with someone I find sexually attractive, I get aroused.	7. Als ik een ontspannen diner bij kaarslicht heb met iemand die ik seksueel aantrekkelijk vind, word ik opgewonden.
	When an attractive person flirts with me, I easily become sexually aroused.*	44. Wanneer een aantrekkelijk persoon met mij flirt, word ik gemakkelijk seksueel opgewonden.
	When I see someone I find attractive dressed in a sexy way, I easily become sexually	13. Als ik een aantrekkelijk persoon zie die sexy gekleed is, word ik makkelijk seksueel opgewonden.
	When I think someone sexually attractive wants to have sex with me, I quickly become sexually aroused.	14. Als ik denk dat een seksueel aantrekkelijk persoon seks met me wilt, word ik snel seksueel opgewonden.
When a sexually attractive stranger accidentally touches me, I easily become aroused.*	6. Als een seksueel aantrekkelijke vreemde me per ongeluk aanraakt, word ik gemakkelijk opgewonden.	
SES 1.2	When I see others engaged in sexual activities, I feel like having sex myself.*	38. Wanneer ik anderen seks zie hebben, heb ik ook zin in seks.
	If I am with a group of people watching an X-rated film, I quickly become sexually aroused.	29. Als ik samen met anderen naar een erotische of pornografische film kijk, word ik snel seksueel opgewonden.
	If I am on my own watching a sexual scene in a film, I quickly become sexually aroused.	3. Als ik in mijn eentje naar een seksscène in een film kijk, word ik snel seksueel opgewonden.
	When I look at erotic pictures, I easily become sexually aroused.	1. Als ik naar erotische plaatjes kijk, word ik gemakkelijk seksueel opgewonden.

Appendix A (Cont.)

	†When I feel sexually aroused, I usually have an erection (a genital reaction [e.g., vaginal lubrication, being wet]).	11. Als ik me seksueel opgewonden voel, heb ik meestal een erectie (een genitale reactie [bijvoorbeeld vaginale lubricatie, nat worden]).
SES 1.3	When I start fantasizing about sex, I quickly become sexually aroused.*	37. Wanneer ik begin te fantaseren over seks, dan word ik snel seksueel opgewonden.
	Just thinking about a sexual encounter I have had is enough to turn me on sexually.	25. Alleen al terugdenken aan een seksuele ervaring is voor mij genoeg om opgewonden te worden.
	†When I feel interested in sex, I usually get an erection (a genital reaction [e.g., vaginal lubrication, being wet]).	43. Als ik zin heb in seks, krijg ik meestal een erectie (een genitale reactie [bijvoorbeeld vaginale lubricatie, nat worden]).
SES 1.4	When I am taking a shower or a bath, I easily become sexually aroused.	26. Als ik een douche of bad neem, word ik gemakkelijk seksueel opgewonden.
	When I wear something I feel attractive in, I am likely to become sexually aroused.	32. Als ik iets draag waarin ik me aantrekkelijk voel, is het waarschijnlijk dat ik seksueel opgewonden word.
	Sometimes I become sexually aroused just by lying in the sun.	4. Soms word ik seksueel opgewonden gewoon door in de zon te liggen.
SIS 1.1	†I need my penis to be touched (clitoris to be stimulated) to maintain an erection (continue feeling aroused).	9. Mijn penis moet aangeraakt (clitoris moet gestimuleerd worden) worden om een erectie te behouden (opgewonden te blijven).
	†When I am having sex, I have to focus on my own sexual feelings in order to keep my erection (stay aroused).	10. Als ik seks heb, moet ik me concentreren op mijn eigen seksuele gevoelens om mijn erectie te behouden (opgewonden te blijven).
	†Putting on a condom (Using condoms or other safe-sex products) can cause me to lose my erection (arousal).	5. Een condoom omdoen (Het gebruik van een condoom, of een ander middel om veilig te vrijen) kan tot gevolg hebben dat ik mijn erectie (opwinding) verlies.
	It is difficult to become sexually aroused unless I fantasize about a very arousing situation.	23. Het is moeilijk om seksueel opgewonden te worden, tenzij ik fantaseer over een heel opwindende situatie.
	†Once I have an erection (am sexually aroused), I want to start intercourse right away before I lose my arousal.*	36. Eens ik seksueel opgewonden ben [stijve penis heb (vochtig/nat ben)], wil ik onmiddellijk aan seks beginnen voordat ik mijn opwinding verlies.

Appendix A (Cont.)

SIS 1.1 (cont.)	†When I have a distracting thought, I easily lose my erection (arousal).*	40. Wanneer ik een afleidende gedachte heb, verlies ik gemakkelijk mijn erectie (opwinding).
	†I often rely on fantasies to help me maintain an erection (my sexual arousal).	41. Ik vertrouw vaak op fantasieën om me te helpen mijn erectie (seksuele opwinding) te behouden.
	I cannot get aroused unless I focus exclusively on sexual stimulation.*	19. Ik kan niet opgewonden worden tenzij ik enkel focus op seksuele stimulatie.
SIS 1.2	†If I am concerned about pleasing my partner sexually, I easily lose my erection (it interferes with my arousal).	21. Als ik bezorgd ben over het seksueel plezier van mijn partner, verlies ik gemakkelijk mijn erectie (dan verstoort dat mijn seksuele opwinding).
	During sex, pleasing my partner sexually makes me more aroused. [Reversed]	45. Tijdens het vrijen maakt het seksueel plezier van mijn partner me meer opgewonden.
	When I notice that my partner is sexually aroused, my own arousal becomes stronger. [Reversed]	17. Als ik merk dat mijn partner seksueel opgewonden is, wordt mijn eigen opwinding sterker.
SIS 1.3	†If I think that I might not get an erection, then I am less likely to get one (If I am worried about being too dry, I am less likely to get lubricated.).	33. Als ik denk dat ik wellicht geen erectie zal krijgen, is het minder waarschijnlijk dat ik er een krijg (Als ik bezorgd ben dat mijn vagina te droog zal zijn, is het minder waarschijnlijk dat ik vochtig wordt).
	If I am distracted by hearing music, television, or a conversation, I am unlikely to stay aroused.*	42. Als ik afgeleid word door het horen van muziek, televisie of een gesprek, dan is het onwaarschijnlijk dat ik opgewonden blijf.
	If I feel that I'm expected to respond sexually, I have difficulty getting aroused.	20. Als ik het gevoel heb dat er van mij verwacht wordt dat ik seksueel reageer, heb ik moeite om opgewonden te geraken.

Appendix A (Cont.)

	If I am masturbating on my own and I realize that someone is likely to come into the room at any moment, I will lose my erection.*	22. Als ik aan het masturberen ben en ik heb het gevoel dat iemand kan binnenvallen, dan zal ik mijn erectie verliezen.
SIS 2.1	If I can be heard by others while having sex, I am unlikely to stay sexually aroused.	24. Als anderen mij kunnen horen tijdens de seks, is het onwaarschijnlijk dat ik seksueel opgewonden blijf.
	If I am having sex in a secluded, outdoor place and I think that someone is nearby, I am not likely to get very aroused.*	12. Als ik seks heb op een afgelegen plaats in openlucht en ik denk dat iemand in de buurt is, dan is het onwaarschijnlijk dat ik erg opgewonden zal geraken.
	If I can be seen by others while having sex, I am unlikely to stay sexually aroused.*	28. Als ik door anderen gezien kan worden terwijl ik seks heb, is het onwaarschijnlijk dat ik seksueel opgewonden zal blijven.
SIS 2.2	If I realize there is a risk of catching a sexually transmitted disease, I am unlikely to stay sexually aroused.*	27. Als ik me realiseer dat ik kans loop om een seksueel overdraagbare aandoening op te lopen, dan is het onwaarschijnlijk dat ik seksueel opgewonden zal blijven.
	If there is a risk of unwanted pregnancy, I am unlikely to get sexually aroused.	8. Als er risico is op een ongewenste zwangerschap, is het onwaarschijnlijk dat ik seksueel opgewonden word.
	†If my new sexual partner does not want to use a condom (condom/safe-sex product), I am unlikely to stay aroused.	18. Als mijn nieuwe seksuele partner geen condom (geen condom of ander middel om veilig te vrijen) wil gebruiken, is het onwaarschijnlijk dat ik seksueel opgewonden blijf.
SIS 2.3	If having sex will cause my partner pain, I am unlikely to stay sexually aroused.	34. Als seks pijn zou veroorzaken bij mijn partner, is het onwaarschijnlijk dat ik seksueel opgewonden blijf.
	If I discovered that someone I find sexually attractive is too young, I would have difficulty getting sexually aroused with him/her.	15. Als ik zou ontdekken dat iemand die ik seksueel aantrekkelijk vind te jong is, zou ik moeite hebben om met hem of haar seksueel opgewonden te raken.
	If I feel that I am being rushed, I am unlikely to get very aroused.	2. Als ik me opgejaagd voel, is het onwaarschijnlijk dat ik erg opgewonden wordt.
	†If I think that having sex will cause me pain, I will lose my erection (arousal)	31. Als ik denk dat seks mij pijn zal doen, zal ik mijn erectie (opwinding) verliezen.

Note. *Items included in the SIS/SES-SF. †Items were worded differently by gender; wording for women appear in parentheses.

Appendix B

Dutch Translation of the Sexual Excitation Sexual Inhibition Scale for Women and Men (SESII-W/M; Milhausen et al., 2010)

Factor	Original item	Dutch translation
Inhibitory cognitions	Sometimes I have so many worries that I am unable to get aroused.	1. Soms heb ik zoveel zorgen dat ik niet opgewonden kan raken.
	If I feel that I am expected to respond sexually, I have difficulty getting aroused.	9. Als ik het gevoel heb dat er van mij verwacht wordt dat ik seksueel reageer, heb ik moeite om opgewonden te raken.
	Sometimes I feel so “shy” or self-conscious during sex that I cannot become fully aroused.	5. Soms voel ik mij zo “verlegen” of bewust van mezelf tijdens seks, dat ik niet volledig opgewonden kan raken.
	If I think about whether I will have an orgasm, it is much harder for me to become aroused.	29. Als ik eraan denk of ik al dan niet een orgasme zal hebben, dan is het veel moeilijker voor mij om opgewonden te raken.
	Unless things are “just right” it is difficult for me to become sexually aroused.	28. Tenzij de omstandigheden “precies goed” zijn, is het moeilijk voor mij om seksueel opgewonden te raken.
	If I am worried about taking too long to become aroused, this can interfere with my arousal.	8. Als ik bezorgd ben dat het te lang duurt voor ik opgewonden raak, kan dit mijn opwinding belemmeren.
	When I am having sex, I have to focus on my own sexual feelings in order to stay aroused.	21. Wanneer ik seks heb, moet ik gefocust blijven op mijn eigen seksuele gevoelens om opgewonden te blijven.
	If I am concerned about being a good lover, I am less likely to become aroused.	24. Als ik me zorgen maak of ik wel een goede seksuele partner ben, dan is de kans kleiner dat ik opgewonden raak.
Relationship importance	If I think that I am being used sexually it completely turns me off.	23. Als ik denk dat ik op een seksuele manier gebruikt word, raak ik volledig mijn opwinding kwijt.
	It would be hard for me to become sexually aroused with someone who is involved with another person.	2. Het is moeilijk voor mij om seksueel opgewonden te raken met iemand die een relatie met een ander heeft.
	If I am very sexually attracted to someone, I don’t need to be in a relationship with that person to become sexually aroused. [Reversed]	17. Als ik me sterk seksueel aangetrokken voel tot een persoon, hoef ik geen relatie te hebben met deze persoon om seksueel opgewonden te worden.
	I really need to trust a partner to become fully aroused.	30. Ik moet een partner echt vertrouwen om volledig opgewonden te kunnen raken.
	If I think that a partner might hurt me emotionally, I put the brakes on sexually.	27. Als ik denk dat een partner me emotioneel pijn kan doen, dan zet ik er seksueel de rem op.

Appendix B (Cont.)

Arousability	When I think about someone I find sexually attractive, I easily become sexually aroused.	3. Als ik aan iemand denk die ik seksueel aantrekkelijk vind, raak ik makkelijk seksueel opgewonden.
	I think about sex a lot when I am bored.	10. Ik denk veel aan seks wanneer ik me verveel.
	Just talking about sex is enough to put me in a sexual mood.	18. Alleen al over seks praten is voldoende om mij in een seksuele stemming te brengen.
	Sometimes I am so attracted to someone, I cannot stop myself from becoming sexually aroused.	14. Soms voel ik me zo aangetrokken tot iemand, dat ik het niet tegen kan houden om seksueel opgewonden te raken.
	Just being physically close with a partner is enough to turn me on.	25. Alleen al lichamelijk dicht bij een partner zijn is genoeg om mij op te winden.
Partner Characteristics and Behaviors	Seeing a partner doing something that shows his/her talent can make me very sexually aroused.	11. Een partner iets zien doen dat zijn/haar talent toont, kan me seksueel zeer opwinden.
	Someone doing something that shows he/she is intelligent turns me on.	4. Iemand die iets doet dat laat zien dat hij/zij intelligent is, windt me op.
	I find it arousing when a partner does something nice for me.	26. Ik vind het opwindend als een partner iets aardigs voor me doet.
	If I see a partner interacting well with others, I am more easily sexually aroused.	15. Als ik zie dat een partner goed met anderen omgaat, raak ik makkelijker seksueel opgewonden.
	If a partner surprises me by doing chores, it sparks my sexual interest.	20. Wanneer een partner mij verrast door klusjes te doen, prikkelt dat mijn seksuele interesse.
Setting (unusual or unconcealed)	If it is possible someone might see or hear us having sex, it is more difficult for me to get aroused. [Reversed]	6. Als iemand zou kunnen zien of horen dat we seks hebben, is het moeilijker voor mij om opgewonden te raken.
	I find it harder to get sexually aroused if other people are nearby. [Reversed]	16. Ik vind het moeilijker om seksueel opgewonden te raken als er anderen in de buurt zijn.
	I get really turned on if I think I may get caught while having sex.	12. Ik raak echt opgewonden als ik denk dat ik betrapt kan worden tijdens seks.
	Having sex in a different setting than usual is a real turn on for me.	19. Seks hebben in een andere omgeving dan gewoonlijk, windt me echt op.

Appendix B (Cont.)

Dyadic Elements of the Sexual Interaction	If I am uncertain how my partner feels about me, it is harder for me to get aroused	22. Als ik niet zeker weet wat mijn partner voor mij voelt, is het moeilijker voor mij om opgewonden te raken.
	While having sex, it really decreases my arousal if my partner is not sensitive to the signals I am giving.	7. Tijdens seks wordt mijn opwinding erg verminderd als mijn partner niet op mijn signalen reageert.
	It interferes with my arousal if there is not a balance of giving and receiving pleasure during sex.	13. Het bemoeilijkt mijn opwinding als er tijdens seks geen balans is tussen het geven en ontvangen van seksueel plezier.