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The Brief Sexual Attitude Scale: Psychometric Properties of the Dutch Version

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ABSTRACT

This cross-sectional study examined the psychometric properties of the Brief Sexual Attitudes Scale (BSAS) in Dutch heterosexual ($N=1129$) and non-heterosexual ($N=200$) samples. The study confirmed the previously reported factor structure and assessed the scale's reliability and construct validity. To evaluate construct validity, participants also completed the Sexual Opinion Survey, Sexual Disgust Questionnaire, International Index of Erectile Functioning or Female Sexual Function Index, Sexual Distress Scale, and Hospital Anxiety and Depression Scale. Confirmatory Factor Analyses supported a 17-item model with satisfactory fit indices. The four subscales—birth control, communion, and instrumentality (3 items each), and permissiveness (8 items)—were confirmed. Factorial invariance across gender (male vs. female) and sexual orientation (heterosexual vs. non-heterosexual) was established. The BSAS demonstrated adequate internal consistency and test-retest reliability over a four-week interval. Construct validity was supported by strong evidence for convergent validity with related measures of sexual opinions and sexual disgust, as well as for discriminant validity with respect to conceptually distinct constructs, including sexual functioning, sexual distress, and symptoms of anxiety and depression. While replication is needed, the BSAS appears suitable for use in research. Further investigation is recommended to determine its appropriateness in clinical contexts.

Introduction

According to several theoretical models (Ajzen, 1985; Fishbein & Ajzen, 2010; Fisher et al., 1988), attitudes influence human behavior in different areas, including sexuality. Sexual attitudes, for instance, play a role in determining whether or not to approach another person for sexual purposes. People with a liberal sexual attitude will sexually approach another individual more readily than people with a more conservative sexual attitude (Faith & Schare, 1993). Other aspects of sexuality, including early sexual debut (Gravel et al., 2016), satisfaction with one's sexual functioning (Bossio & Pukall, 2018; Boul, 2007), and condom use during new sexual contacts (Chantal et al., 2000) were also found to be associated with sexual attitudes. Sexual attitudes relate to still other dimensions of sexuality, including—among others – the acceptability of certain sexual behaviors for women vs. men (Emmerink et al., 2017; Sakaluk & Milhausen, 2012; Sanchez et al., 2012), the presence of an intact hymen for unmarried women (Nikirashidi

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et al., 2019), masturbation (Pottinger et al., 2016), sexuality of elderly individuals (Bitzer et al., 2008; Haesler et al., 2016), and the responses toward gay women and men (Adolfson et al., 2010). Thus, valid measurements of sexual attitudes are important for increasing our knowledge of the determinants of sexual behavior (Schiavi et al., 1979; Werner-Wilson, 1998). This is important in both heterosexual and non-heterosexual populations (Leri & DelPriore, 2021; McKenna et al., 2022; Wang et al., 2010), but sexual attitudes in non-heterosexual populations have thus far received far less attention in psychometric research (Armstrong, 2014).

The essentially multifaceted nature of sexual attitudes and their interconnections requires the use of assessment instruments that address these multiple dimensions (Sprecher & McKinney, 1993). The Sexual Attitude Scale (SAS; Hendrick et al., 1985) and the Brief Sexual Attitude Scale (BSAS; Hendrick et al., 2006) are intended to measure multiple dimensions of sexual attitude, and these tools have been widely used in empirical sex research.

In a first psychometric study on the SAS, several factor solutions were empirically tested (Hendrick et al., 1985). The authors finally retained 43 items organized in five subscales, comprising sexual permissiveness, sexual responsibility, sexual communion, sexual conventionality, and sexual instrumentality. The sexual permissiveness subscale addresses a wide range of situations, including casual sexual contacts, premarital sex, and gender-related attitudes on active and passive sexual behavior. The sexual responsibility subscale addresses, among others, responsibility for birth control, sexual communication, and sexual coercion within marriage. The communion subscale addresses ideas of the exceptionality of sexual union, and the intensity of sexual experience. The sexual instrumentality subscale addresses sexual activity for individual pleasure, and the physical nature of sexuality. Finally, the sexual conventionality subscale covers attitudes about—among others - masturbation and oral sex.

The reliability of the SAS was found satisfactory, with standardized Cronbach's alpha coefficients ranging from 0.68 to 0.93 in the first study (Hendrick et al., 1985) and from 0.73 to 0.95 in another study (Hendrick & Hendrick, 1995). Test-retest correlations with a 2-month interval ranged from 0.66 to 0.88 (Hendrick & Hendrick, 1987). The SAS was found to have good construct validity. Significant correlations were found with the Sexual Opinion Survey (Fisher et al., 1988) that measures the erotophobia-erotophilia construct (Hendrick & Hendrick, 1987). Gender differences were found on the SAS dimensions of Permissiveness and Instrumentality, with men scoring higher than women (Hendrick & Hendrick, 1995). The discriminant validity of the SAS was also supported. It was found to predict the level of distress of women and men in response to their partner's emotional and sexual infidelity (Cann et al., 2001). The SAS has been used to investigate such diverse research topics as the responsibility for date rape (Hammond et al., 2011), cultural differences in sexual permissiveness (Cruz et al., 2010), and adolescent sexual behavior (Buzwell & Rosenthal, 1995). The SAS was translated and validated in a Chinese population (He et al., 2010) and used to investigate determinants of safe sexual behavior in adolescents (Lou & Chen, 2009). A French language version of the SAS is also available (Le Gall et al., 2002), as well as a Turkish version (Karaçam et al., 2012).

The authors of the SAS also developed a brief version of this instrument, the Brief Sexual Attitude Scale (BSAS) that was also found reliable and valid in clinical and research settings (Hendrick et al., 2006). The BSAS is comprised of 23 items that are organized in four subscales termed, respectively, permissiveness, birth control, communion, and instrumentality. The birth control subscale contains items from the original responsibility scale, but it has a narrower scope. The BSAS has also been used to investigate a wide range of topics, including religiosity (Marcinechová & Záhorcová, 2020), pornography use (Brown et al., 2017), and self-esteem (Abbott et al., 2016). A Chinese version of the BSAS was validated in college students (Zhang et al., 2012).

The purpose of the current study was to examine several psychometric properties of the BSAS in heterosexual and non-heterosexual Dutch samples. This included confirming the previously reported factor structure and exploring reliability measures and construct validity. Additionally, the study aimed to examine measurement and structural invariance across male versus female participants and heterosexual versus non-heterosexual participants. Specifically,

this involved investigating whether the target subgroups interpret the questions similarly (configural and metric invariance), whether they have comparable initial baseline levels when answering questions (scalar invariance), whether the scores were equally reliable in the target groups (strict residuals invariance), and whether the target groups achieve similar average scores on the test (strict means invariance).

Method

Design

This was a cross-sectional study with instruments that assess sexual functioning, sexual attitudes (several, including the BSAS), erotophobia-erotophilia attitude, disgust experienced by different aspects of sexuality, sexual functioning using specific instruments in male and female participants, and depression and anxiety severity. For assessing test-retest reliability, a second measurement was conducted four weeks after the first measurement.

Participants

Participants were required to have mastery of the Dutch language. For ethical issues only adults (18+) were included. No other inclusion or exclusion criteria were used. Participants were recruited through the website of a Dutch TV program (“Spuiten en slikken”), which was especially popular among adolescents, and through a Facebook page visited by Open University students.

Instruments

Brief Sexual Attitude Scale (Hendrick et al., 2006). For the present study, the BSAS was translated into Dutch, back translated and checked by a native English speaker, following commonly used procedures (Beaton et al., 2000; Tsai et al., 2018). The Dutch translation was kept as close as possible to the original English language BSAS. The instrument consists of 23 items. All items are answered on a 5-point Likert-type scale, running from 1 = “Strongly agree with statement” to 5 = “Strongly disagree with statement”. High item scores represent a more liberal attitude. The original BSAS is organized in four dimensions, measuring attitudes toward different aspects of sexuality termed, respectively, *Permissiveness*, *Birth control*, *Communion*, and *Instrumentality*. The item wordings were kept neutral with regard to sexual orientation. The subscale *Permissiveness* contains 10 items and measures the attitude toward “casual sex”. An example item is: “Sex as a simple exchange of favors is okay if both people agree to it”. The subscale *Birth Control* contains 3 items and aims to measure the attitude toward birth control. For example: “A man should share the responsibility for birth control”. The subscale *Communion* contains 5 items and aims to measure how one thinks about sexuality from an idealistic perspective. An example item is “At its best, sex seems to be the merging of two souls”. Finally, the dimension *Instrumentality* contains 5 items and aims to measure the attitude toward sexuality as a biological function and a functional activity. An example item is “Sex is primarily a bodily function, like eating”. Cronbach’s α ranged from 0.67–0.86 across subscales (Hendrick et al., 2006). The BSAS was found to be reliable and valid in clinical and research settings (Hendrick et al., 2006).

Sexual Opinion Survey (SOS; Fisher et al., 1988). The SOS aims to measure the erotophobia-erotophilia attitude (Fisher et al., 1988). The questionnaire consists of 21 items, which are answered on 7-point Likert-type scales, running from 1 = “strongly agree with the statement” to 7 = “strongly disagree with the statement”. Low total scores represent an

erotophobic, and high scores an erotophilic attitude. Previous psychometric investigation showed Cronbach's α of 0.79 for the full sample, 0.81 for women, and 0.62 for men (Fisher et al., 1988).

Sexual Disgust Questionnaire (SDQ, van Overveld et al., 2013). The SDQ measures disgust experienced in relation to different aspects of sexuality. The Dutch translation contains two subscales measuring, respectively, the willingness to perform specific types of sexual behavior, such as handling sex toys that have been used during sexual activity and touching a towel with semen on it, and the level of disgust with regard to those types of behavior. Both subscales contain questions about strangers and non-strangers. The questionnaire consists of 12 items that are answered on 9-point Likert-scales, running from 1 = "certainly not willing" to 9 = "certainly willing", and 1 = "totally not disgusted" to 9 = "extremely disgusted". Higher scores on the subscales indicate, respectively, higher willingness to perform certain sexual acts and to deal with sexually contaminated objects, and a higher degree of aversion to those behaviors and objects. The SDQ was found to be a valid and reliable instrument to measure disgust in relation to sexual behaviors and sex-related stimuli (van Overveld et al., 2013).

International Index of Erectile Functioning (IIEF, Rosen et al., 1997): The IIEF is a self-report questionnaire for assessing male sexual functioning in five areas: erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall sexual satisfaction. The questionnaire consists of 15 items. Item scores are summated to form a global index of sexual functioning (IIEF Total score). The answers are given on a 6-point Likert scales, with higher scores indicating a higher level of sexual functioning. Although the IIEF has been used in several studies involving gay men (Hart et al., 2015; Moreno-Pérez et al., 2010), either the original version or a modified version, the original scale was developed for use in heterosexual men. In a psychometric study among heterosexual men, Cronbach's α for subscales was found between 0.92 and 0.96 while test-retest reliability was high ($r=0.84$; Rosen et al., 1997). In a large sample of gay men (Kiss et al., 2021), the original IIEF factor structure could not be replicated, although a 12-item version was found to have adequate reliability, validity and fit with the data. In the absence of a widely used measure of the sexual functioning of gay men, we decided using the IIEF.

Female Sexual Function Index (Rosen et al., 2000): The FSFI measures the sexual functioning of women. The questionnaire addresses sexual feelings and sexual responding in the past four weeks. This questionnaire contains 19 items, with answers given on 5- and 6-point Likert scales. The instrument contains six subscales: sexual desire, vaginal lubrication, orgasmic functioning, sexual arousal, sexual satisfaction, and genital pain. The subscale scores are combined into a total score representing global sexual functioning. Although the FSFI was also originally developed for use in heterosexual women, the factor structure was replicated in lesbian women, and measurement invariance (configural, metric, and scalar) was demonstrated across heterosexual and lesbian women (Peixoto, 2021). A previous study among Dutch heterosexual women showed good validity (ter Kuile et al., 2006). Cronbach's α were per subscale: sexual desire = 0.90, sexual arousal = 0.96, lubrication = 0.97, orgasmic functioning = 0.95, sexual satisfaction = 0.87, genital pain = 0.98, and Cronbach's α of the total score was 0.97 (ter Kuile et al. 2006).

Sexual Distress Scale (SDS). This instrument was originally developed to be used in women as the Female Sexual Function Index (FSDS, Derogatis et al., 2002) for measuring the burden of problems regarding one's sexual functioning during the past 30 days. The questionnaire consists of 12 items that are answered on 5-point Likert-type scales, running from "never" to "always". The FSDS was found to have excellent internal consistency, Cronbach's $\alpha=0.93$ (Derogatis et al., 2002). In a Dutch sample, Cronbach's α was very high (0.97), and the validity was satisfactory (ter Kuile et al., 2006). The FSDS was also validated for use in men. Cronbach's α was found high in, respectively, sexually dysfunctional (0.93) and sexually functional men (0.94) (Santos-Iglesias et al., 2018).

Hospital Anxiety and Depression Scale ((HADS), Zigmond & Snaith, 1983). The HADS was used to assess depression and anxiety symptoms. It is a 14-item self-report questionnaire that is organized in two subscales for the domains of, respectively, anxiety and depression. High subscale scores represent higher levels of anxiety and depression. The HADS has been found to possess satisfactory to Cronbach's α ranging from 0.71 to 0.90 in Dutch samples (Spinhoven et al., 1997).

Procedure

Individuals who showed their interest in participating received an invitation message for the study via email. This letter explained the procedure of the study and how to start participation. The survey was accessible online, the participants could complete it at their own convenience. Before accessing the questionnaires participants read, signed, and submitted an online informed consent form. Completing the questionnaires took about 30 minutes. After four weeks, participants received an email inviting them to complete only the BSAS again. Ethical clearance for the study was obtained from the Open University's ethical review board (cETO; U2014/01314/HVM).

Analyses

Descriptive analyses were performed to examine participant characteristics. For interval variables, scores were compared between male and female participants, and between heterosexual and non-heterosexual participants using Student's *t* and ANOVA for comparisons across the four groups (male heterosexual, male non-heterosexual, female heterosexual, and female non-heterosexual).

We conducted Confirmatory Factor Analysis (CFA) for the four-factor model of the BSAS using the Lavaan package in the R statistical environment (Rosseel, 2012). The items were regarded as ordinal, and, therefore, the weighted least squares means and variance adjusted method (WLSMV; Hirschfeld & von Brachel, 2014) was used for estimating parameters. The Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) of 0.95 and higher, the Root Mean Square Error of Approximation (RMSEA) ≤ 0.06 , and Standardized Root Mean Square Residual (SRMR) of $\leq .08$ were used to indicate a good fit (Hu & Bentler, 1999). To improve the models, items were omitted based on modification indices, ensuring that no factor had fewer than three items. Testing for measurement invariance consisted of a series of model comparisons that define more stringent equality constraints (Cheung & Rensvold, 1999; Raju et al., 2002; Vandenberg & Lance, 2000). First, a baseline model was fit in which the loading pattern was similar in all groups but the magnitude of all parameters—loadings, intercepts, variances, etc.—could vary. Configural invariance is established when this baseline model fits well and the same loadings are significant in all groups. Second, a weak-invariance model, in which the factor loadings are constrained to be equal, was fit to the data, and the fit of this model was compared to the baseline model. Weak invariance (or metric invariance) exists if the fit of the metric invariance model is not substantially worse than the fit of the baseline model. As described below, several statistical criteria exist to decide whether the fit is substantially worse. Third, a strong-invariance model, in which factor loadings and item thresholds are constrained to be equal, was fit to the data and compared against the weak-invariance model. For testing scalar invariance, thresholds instead of intercepts were used in this study due to ordinal data. Again, strong invariance exists if the fit of the scalar invariance model is not substantially worse than the fit of the weak invariance model. Fourth, a strict invariance model, in which factor loadings, thresholds, and residual variances are constrained to be equal, was fit to the data and compared to the strong measurement invariance model. To test the changes between the models, the recommendations

were used for Δ CFI of equal or greater than -0.010 , Δ RMSEA at least as small as 0.015 , and a more liberal cutoff of 0.030 for tests of weak invariance (Rutkowski & Svetina, 2017).

To examine reliability measures, Cronbach's α and Omega coefficients were calculated, and coefficients of 0.70 and higher were interpreted as satisfactory (Cortina, 1993; Dunn et al., 2014). For participants who completed the instrument twice, we calculated the correlation (Pearson's r , using the base R stats package) for the total score, and each of the four subscales. The means at the baseline and four weeks after the baseline were compared using a paired t -test. Regarding construct validity exploration, convergent validity was tested against scores of other instruments measuring sexual attitudes, respectively, the SOS (Fisher et al., 1988) and the SDQ (van Overveld et al., 2013). Discriminant validity was tested against scores on the HADS (Spinhoven et al., 1997; Zigmond & Snaith, 1983), measuring depression and anxiety scores, and the IIEF (Rosen et al., 1997), the FSFI (Rosen et al., 2000) and the SDS (Derogatis et al., 2002), measuring male and female sexual functioning and sexual distress, representing concepts that are conceptually distant from sexual attitudes. It was expected that the BSAS would show significant large correlations (Pearson indices) with the SOS and the SDQ (convergent validity), but small correlations with the HADS, IIEF, FSFI and SDS (sub)scales. We followed Cohen's (1988) guidelines of Pearson's $r=0.10$, 0.30 , and 0.50 , to interpret observed effect sizes of correlations as, respectively, small, medium, or large.

The data that support the findings of this study are available from the corresponding author, RL, upon reasonable request. Given that the authors are non-native English speakers, ChatGPT v4.0 was used for language refinement and editing (e.g., shortening the abstract to meet the word limit).

Results

Data were collected of 1329 respondents, of whom 814 (61%) were female (Table 1). There were 1129 (85%) participants who reported being heterosexual. The youngest participant was 18 years of age and the eldest was 69 years. There were 882 (66%) participants with a partner, and 243 (18%) had one or more children.

Table 1 shows the descriptive characteristics of the sample and the total scores of the scales other than BSAS used in this study. It can be noticed that male ($N=515$, 39%) participants were older, scored higher on the SDQ willingness subscale, SOS and anxiety HADS subscale than female participants. Female participants scored lower on SDQ disgust, and SDS sexual distress. When comparing heterosexual participants to non-heterosexual participants (N female/ N male homosexual, 250/54; bisexual, 44/52), non-heterosexual male participants were slightly older ($M=31.3$, $SD = 11.5$) than participants in other groups.

Table 2 shows improved CFI, TLI, RMSEA and SRMR coefficients for the BSAS after omitting six items based on several iterations with calculations of modification indices (omitted items were 3,7, 17, 18, 19, and 20). This resulted in three subscales (birth control, communion, and instrumentality) with three items each, and one subscale with eight items (permissiveness).

Table 3 presents the results of testing factorial invariance. The CFI and TLI indices indicated good fit in all models (>0.95) for both gender (male versus female), and sexual orientation (hetero versus non-hetero). While chi-square tests indicated significant differences between model fits, changes in the practical fit indices (CFI, TLI, RMSEA, and SRMR) suggested otherwise. The model fits did not worsen significantly in most comparisons, except for the strict means model compared to the strict residuals model when male and female participants were considered.

Regarding the sum scores of the total BSAS scale (after omitting the six items), the male participants scored higher than female participants, which can be explained by the differences between the groups for the Permissiveness and Instrumentality subscale (Table 4).

Table 1. Characteristics of the participants per gender and reported sexuality (heterosexual compared to non-heterosexual), $N = 1329$.

Variable	Total sample $N = 1329$	Women $N = 814$	Men $N = 515$	p^*	Heterosexual $N = 1129$	Non-heterosexual $N = 200$	p^{**}	$p^\#$
Age	25.9 (9.8)	24.1 (8.3)	28.8 (11.2)	<.001	25.8 (9.7)	26.5 (10.1)	.413	<.001
Having a partner	882 (66.4%)	528 (64.9%)	354 (68.7%)	.163	751 (66.5%)	131 (65.5%)	.842	.427
Having (a) child(ren)	243 (18.3%)	127 (15.6%)	116 (22.5%)	.002	211 (18.7%)	32 (16%)	.419	.010
Low Education	41 (3.1%)	22 (2.7%)	19 (3.7%)	<.001	34 (3%)	7 (3.5%)	.858	.017
Medium Education	871 (65.5%)	566 (69.5%)	305 (59.2%)		738 (65.4%)	133 (66.5%)		
High Education	417 (31.4%)	226 (27.8%)	191 (37.1%)		357 (31.6%)	60 (30%)		
IEEF	NA	NA	54.4 (16.5)	NA	54.7 (16.5)	52 (16.5)	.269	NA
FSFI	NA	27.2 (7.5)	NA	NA	27.1 (7.5)	27.5 (7.7)	.570	NA
SDQ disgust	24.9 (9.8)	25.9 (9.6)	23.3 (9.9)	<.001	25.2 (9.8)	23.7 (9.5)	.060	<.001
SDQ williness	17.1 (9.3)	16.1 (8.8)	18.7 (9.8)	<.001	16.8 (9.1)	19 (9.7)	.003	<.001
FSDS	.8 (.8)	.9 (.8)	.7 (.7)	<.001	.8 (.8)	1 (.9)	.017	<.001
SOS	5.3 (.9)	5.2 (.9)	5.3 (.8)	.004	5.2 (.8)	5.7 (.8)	<.001	<.001
HADS anxiety	20.4 (6.2)	19.8 (6.2)	21.3 (6.1)	<.001	20.6 (6.3)	19.5 (6)	.018	<.001
HADS depression	22.7 (6.3)	22.7 (6.4)	22.7 (6.3)	.860	22.8 (6.4)	22.1 (6.2)	.130	.509

IEEF: International Index of Erectile Functioning; FSFI: Female Sexual Function Index; SDQ: Sexual Disgust Questionnaire; FSDS: Female Sexual Distress Scale; SOS: Sexual Opinion Survey; HADS, Hospital Anxiety and Depression Scale.

p^* , significance of Chi square tests (for frequencies), and of t-tests (interval data) for difference between female and male participants.

p^{**} , significance for heterosexual participants compared to non-heterosexual participants (N female/N male homosexual, 50/54; bisexual, 44/52).

$p^\#$, significance of Chi square tests (for frequencies), and ANOVA tests (interval data) for the four groups (gender $\times$ sexuality).

Table 2. Confirmative factor analysis indices for the four-factor model with the original BSAS and the reduced scale, in a total sample ($N = 1329$), subsample of male ($N = 515$), female ($N = 814$), heterosexual ($N = 1129$ both male and female), and non-heterosexual ($N = 200$) participants.

(Sub)sample	Chisq	p value	CFI	TLI	RMSEA (95% CI)	SRMR
<i>Original scale, $df = 224$</i>						
Men	1152.967	<.001	0.950	0.944	0.090 (0.085–0.095)	0.090
Women	1831.013	<.001	0.941	0.933	0.094 (0.090–0.098)	0.092
Heterosexual	2399.235	<.001	0.946	0.939	0.093 (0.089–0.096)	0.089
Non-heterosexual	642.605	<.001	0.975	0.972	0.097 (0.088–0.106)	0.106
Total	2830.640	<.001	0.947	0.940	0.094 (0.091–0.097)	0.089
<i>Reduced scale, $df = 113$</i>						
Men	330.847	<.001	0.983	0.980	0.061 (0.054–0.069)	0.065
Women	336.691	<.001	0.989	0.987	0.049 (0.043–0.055)	0.052
Heterosexual	467.009	<.001	0.988	0.985	0.053 (0.048–0.058)	0.052
Non-heterosexual	147.737	.016	0.998	0.997	0.039 (0.018–0.056)	0.071
Total	504.176	<.001	0.989	0.987	0.051 (0.047–0.056)	0.050

Original scale, the BSAS scale with four subscales (permissiveness [items 1–10], birth control [11–13], communion [14–18], and instrumentality [19–23].

Reduced scale, items 3, 7, 17, 18, 19, and 20 were omitted from the original scale.

Thresholds were used for CFI and TLI of ≥ 0.95 ; RMSEA ≤ 0.06 ; SRMR ≤ 0.08 (Hu & Bentley, 1999).

Heterosexual participants showed lower scores compared to non-heterosexual participants, which can be explained by the differences between the groups for the Permissiveness and Instrumentality subscale. For the Communion subscale, non-heterosexual participants showed slightly lower scores compared to heterosexual participants. When the subgroups of female and male heterosexual participants and female and male non-heterosexual participants were compared using ANOVA, their total BSAS scores differed significantly. This was also the case for all the subscales except birth control. Regarding the total BSAS score, heterosexual women showed the lowest mean total score ($M = 57.6$ [$SD = 8.4$]), while non-heterosexual men showed the highest mean total score ($M = 63.5$ [$SD = 9.2$]). The other two groups had scores comparable to

Table 3. Testing measurement invariance.

	Chisq	Df	<i>p</i> value	CFI	TLI	RMSEA (95% CI)	SRMR
Male versus female							
M1 configural	667.537	226.000	<.001	0.987	0.984	0.054 (0.050–0.059)	0.057
M2 metric	683.078	239.000	<.001	0.987	0.985	0.053 (0.048–0.058)	0.058
- M2 compared to M1	11.382	13.000	.579	[0.000]	[0.001]	[–0.001]	[0.001]
M3 scalar	801.550	286.000	<.001	0.984	0.985	0.052 (0.048–0.056)	0.058
- M3 compared to M2	175.406	47.000	<.001	[–0.003]	[0.000]	[–0.001]	[0.000]
M4 strict residuals	801.550	286.000	<.001	0.984	0.985	0.052 (0.048–0.056)	0.058
- M4 compared to M3	0.000	0.000	NA	[0.000]	[0.000]	[0.000]	[0.000]
M5 strict means	1877.587	290.000	<.001	0.952	0.955	0.091 (0.087–0.095)	0.058
- M5 compared to M4	223.697	4.000	<.001	[–0.032]	[–0.030]	[0.039]	[0.000]
Heterosexual versus non-heterosexual							
M1 configural	614.746	226.000	<.001	0.991	0.989	0.051 (0.046–0.056)	0.055
M2 metric	657.044	239.000	<.001	0.990	0.989	0.051 (0.047–0.056)	0.056
- M2 compared to M1	24.847	13.000	.024	[–0.001]	[0.000]	[0.000]	[0.001]
M3 scalar	708.347	286.000	<.001	0.990	0.991	0.047 (0.043–0.052)	0.055
- M3 compared to M2	79.428	47.000	.002	[0.000]	[0.002]	[–0.004]	[–0.001]
M4 strict residuals	708.347	286.000	<.001	0.990	0.991	0.047 (0.043–0.052)	0.055
- M4 compared to M3	0.000	0.000	NA	[0.000]	[0.000]	[0.000]	[0.000]
M5 strict means	915.062	290.000	<.001	0.986	0.986	0.057 (0.053–0.061)	0.055
- M5 compared to M4	42.893	4.000	<.001	[–0.004]	[–0.005]	[0.010]	[0.000]

Changes in indices are presented between [].

M1, baseline model with all parameters allowed to vary.

M2, a weak-invariance model in which the factor loadings are constrained.

M3, a strong-invariance model in which factor loadings and thresholds are constrained.

M4, a strict invariance model in which factor loadings, thresholds, and residual variances are constrained.

M5, a strict invariance model in which factor loadings, thresholds, means, and residual variances are constrained.

non-heterosexual men (non-heterosexual women: $M=61.7$ [$SD = 8.5$]; heterosexual men: $M=63.1$ [$SD = 8.5$]). A similar pattern was observed for instrumentality and permissiveness, with heterosexual women showing the lowest scores, non-heterosexual men showing the highest scores, and the other two groups having nearly the same scores as non-heterosexual men. For communion, non-heterosexual women had the lowest scores, while the other three groups displayed identical mean scores.

The BSAS correlated weakly but significantly with the SDQ subscales disgust and willingness in the total sample, and in subgroups divided by sex and by sexual orientation (Table 5). In the non-heterosexual female subgroup a weak correlation was found with FSFI scores.

Table 6 shows the Cronbach's alpha and McDonald's omega coefficients exceeding (higher than) or approaching the cutoff of 0.70. In total, 277 participants completed the survey again, 4 weeks after the initial measurement. Their mean total BSAS score at the first measurement, $M=59.9$ ($SD = 8.9$), did not differ significantly, $t(276) = 1.63$, $p = .105$, from the mean score at the second measurement, $M=59.3$ ($SD = 8.0$). The two measurements correlated strongly for the BSAS total score ($r=0.77$ [95% CI, 0.72–0.81], $p < .001$), and the BSAS permissiveness (0.83 [0.78, 0.86], $p < .001$), whereas the subscales birth control, communion, and instrumentality showed weaker correlations ($r=0.49$ [0.39, 0.57]; 0.62 [0.54, 0.69]; 0.51 [0.42, 0.59], respectively, all $p < .001$).

Table 4. Scores of the BSAS scale and its subscales, M (SD).

	Total sample N= 1329	Female N= 814	Male N= 515	p*	Heterosexual N= 1129	Non-heterosexual N= 200	p**	p#
BSAS Total	60.2 (8.9)	58.3 (8.6)	63.1 (8.5)	<.001	59.8 (8.9)	62.2 (8.7)	<.001	<.001
Permissiveness	26.6 (7.1)	24.9 (6.9)	29.4 (6.6)	<.001	26.3 (7.2)	28.5 (6.4)	<.001	<.001
Birth Control	12.8 (2.3)	12.9 (2.3)	12.7 (2.3)	.137	12.8 (2.2)	12.8 (2.5)	.804	.485
Communion	12 (2.5)	12 (2.5)	12.1 (2.4)	.803	12.1 (2.4)	11.7 (2.5)	.024	.045
Instrumentality	8.7 (2.6)	8.6 (2.5)	9 (2.7)	.002	8.7 (2.6)	9.2 (2.7)	.006	<.001

p*, significance of a t-test for difference between female and male participants.

p**, significance of a t-test for heterosexual participants compared to non-heterosexual participants (N female/ N male homosexual, 250/54; bisexual, 44/52).

p#, significance of ANOVA tests for the four groups (gender x sexuality).

Table 5. Correlation (Pearson) coefficients for the BSAS total scale with other variables in the total sample and subsamples divided by gender and sexual orientation.

	Total	Male	Female	Heterosexual	Non-heterosexual
Age	0.00	−0.09*	−0.04	−0.02	0.13
IEF	NA	−0.03	NA	−0.05	0.17
FSFI	NA	NA	0.07	0.04	0.18*
SDS	0.01	0.05	0.03	.00	0.02
SOS	0.41**	0.33**	0.45**	0.39**	0.43**
SDQ disgust	−0.19**	−0.12*	−0.18**	−0.16**	−0.30**
SDQ willingness	0.20**	0.14*	0.20**	0.17**	0.33**
HADS anxiety	0.01	−0.02	−0.01	0.03	−0.01
HADS depression	−0.02	−0.05	−0.01	−0.01	−0.07

*Significance, $p < .05$, **significance, $p < .001$.
The correlation for Age is 0.002.

Table 6. Cronbach's alpha and McDonald's omega for BSAS scale and its subscales (α/ω).

Variable	Total	Male	Female	Heterosexual	Non-heterosexual
BSAS Total	0.76/0.78	0.76/0.77	0.76/0.77	0.76/0.78	0.77/0.78
Permissiveness	0.84/0.85	0.83/0.84	0.83/0.83	0.85/0.85	0.8/0.81
Birth Control	0.75/0.8	0.75/0.79	0.76/0.8	0.74/0.78	0.83/0.86
Communion	0.72/0.72	0.71/0.71	0.73/0.73	0.72/0.72	0.73/0.73
Instrumentality	0.67/0.68	0.68/0.7	0.66/0.67	0.66/0.68	0.69/0.69

Discussion

In this study, we investigated psychometric properties of the Dutch translation of the Brief Sexual Attitudes Scale (BSAS; Hendrick et al., 2006): the factor structure, and several aspects of reliability and validity. After an iterative procedure, based on the analyses of data from a sample comprised of 1329 participants (814 female, 515 male, 1129 heterosexual, 200 non-heterosexual), we omitted six of the original 23 items. A 17-item BSAS model with satisfactory fit indices was identified, organized in four subscales (birth control, communion, and instrumentality; each with 3 items, and permissiveness with 8 items) with factorial invariance across gender (male versus female), and sexuality (heterosexual versus non-heterosexual).

Despite significant chi-square tests indicating differences between model fits, the practical fit indices (CFI, TLI, RMSEA, and SRMR) remained stable across most comparisons, except for the strict means model when comparing male and female participants. These latter findings align with those of Hendrick and Hendrick (1995) in a study among undergraduate psychology students in the USA. This result for the strict means model was consistent with significantly higher total BSAS scores in male participants compared to female participants. These higher scores in male participants were reflected in higher scores on the permissiveness and instrumentality subscales. The lower scores in female participants were especially reflected in the lowest scores on the instrumentality and permissiveness subscales in heterosexual women, and in the lowest scores on communion in non-heterosexual women. Similarly, heterosexual participants scored higher on permissiveness and instrumentality, resulting in higher total BSAS scores among heterosexual compared with non-heterosexual participants. Compared to heterosexual participants, non-heterosexual participants scored lower on communion.

The observed measurement invariance across subgroups indicates that the questionnaire structure is similar in these subgroups (configural invariance). It also indicates that men and women interpret the items similarly (metric invariance) and that the instrument's reliability is the same across subgroups (strict residual invariance). Although the scalar invariance was also confirmed regarding the difference in indices, the chi-square test was significant, which may suggest that male and female participants may differ regarding their baseline level when answering the questions. This may explain the differences between the mean levels of the latent constructs measured by the BSAS.

The instrument showed adequate test-retest reliability. The strong correlation between the two measurements indicates sufficient stability of the scores over time. However, the three-items subscales all showed weak test-retest correlations, which is in line with empirical research for short scales (Ziegler et al., 2014). This suggests that, the use of the subscales on their own should not be encouraged, and future versions of the BSAS subscales should include more items to improve their temporal reliability.

With regard to construct validity, it is notable that moderate-size correlations with the SOS, but only weak associations were found with the SDQ subscales, while no associations appeared to exist with IIEF, FSFI, SDS and HADS (sub)scales, except in the non-heterosexual subsample. The strength of the relationship of the BSAS with the FSFI in this subsample was similar to that with the IIEF, but the latter association was not significant. This may be explained by the small sample of non-heterosexual participants when compared to the sample of heterosexual participants. The results of the investigation of the construct validity provided ample support for its convergent validity with closely related measures of sexual opinions and sexual disgust, and its discriminant validity tested against conceptually more distant constructs, including sexual functioning, sexual distress, and depression and anxiety.

Strengths and limitations

We investigated the psychometric qualities of the Dutch translation of the Brief Sexual Attitudes Scale, and found satisfactory reliability and validity. The instrument is equally usable in women and men. This is the first study, to our knowledge, considering sexual attitudes across both gender and sexual orientation subgroups. However, some limitations need to be acknowledged. In particular, the sample of non-heterosexuals was quite small, although it was large enough for correlation analyses (N (lesbian) = 50; N (gay) = 54; N (female bisexual) = 44; N (male bisexual) = 52). The results for the measurement invariance for heterosexuals and non-heterosexuals should be viewed very cautiously. The results for the measurement invariance for men and women are, of course, promising. Another limitation concerns the recruitment strategy. Although this strategy included the use of a university Facebook page targeting primarily older students, a large proportion of participants were adolescents recruited via a Dutch TV program's website popular among younger viewers. Therefore, our findings might have been influenced by the specific emotional and cognitive developmental characteristics of adolescents. Future research should investigate whether developmental differences among adolescent respondents influence the assessment of sexual attitudes.

Conclusion

In this study among mostly young adults, the Dutch translation of the Brief Sexual Attitude Scale was shown to be structurally similar to the original US version. It was found to have satisfactory reliability characteristics and to show measurement and structural invariance across gender and sexual orientation. This implies that, pending replication of the current findings, the BSAS can be used for research purposes with confidence. Further research is recommended to justify its use in clinical settings.

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References

- Abbott, D. M., Harris, J. E., & Mollen, D. (2016). The impact of religious commitment on women's sexual self-esteem. *Sexuality & Culture*, 20(4), 1063–1082. <https://doi.org/10.1007/s12119-016-9374-x>
- Adolfson, A., Iedema, J., & Keuzenkamp, S. (2010). Multiple dimensions of attitudes about homosexuality: Development of a multifaceted scale measuring attitudes toward homosexuality. *Journal of Homosexuality*, 57(10), 1237–1257. <https://doi.org/10.1080/00918369.2010.517069>
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Springer.
- Armstrong, H. L. (2014). *Sexual attitudes and motivations in same-sex and mixed-sex relationships* [Doctoral dissertation]. Université d'Ottawa/University of Ottawa. <https://ruor.uottawa.ca/handle/10393/31198>
- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25(24), 3186–3191. <https://doi.org/10.1097/00007632-200012150-00014>
- Bitzer, J., Platano, G., Tschudin, S., & Alder, J. (2008). Sexual counseling in elderly couples. *The Journal of Sexual Medicine*, 5(9), 2027–2043. <https://doi.org/10.1111/j.1743-6109.2008.00926.x>
- Bossio, J. A., & Pukall, C. F. (2018). Attitude toward one's circumcision status is more important than actual circumcision status for men's body image and sexual functioning. *Archives of Sexual Behavior*, 47(3), 771–781. <https://doi.org/10.1007/s10508-017-1064-8>
- Boul, L. (2007). Sexual function and relationship satisfaction: An investigation into men's attitudes and perceptions. *Sexual and Relationship Therapy*, 22(2), 209–220. <https://doi.org/10.1080/14681990600743743>
- Brown, C. C., Conner, S., & Vennun, A. (2017). Sexual attitudes of classes of college students who use pornography. *Cyberpsychology, Behavior and Social Networking*, 20(8), 463–469. <https://doi.org/10.1089/cyber.2016.0362>
- Buzwell, S., & Rosenthal, D. (1995). Exploring the sexual world of the unemployed adolescent. *Journal of Community & Applied Social Psychology*, 5(3), 161–166. <https://doi.org/10.1002/casp.2450050303>
- Cann, A., Mangum, J. L., & Wells, M. (2001). Distress in response to relationship infidelity: The roles of gender and attitudes about relationships. *Journal of Sex Research*, 38(3), 185–190. <https://doi.org/10.1080/00224490109552087>
- Chantal, Y., Recorbet, R., Ferland, F., & Fontaine, D. (2000). Towards a multidimensional analysis of attitudes about condom use: A trans-cultural validation of the UCLA-MCAS. *European Review of Applied Psychology*, 50(4), 393–403.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98–104. <https://doi.org/10.1037/0021-9010.78.1.98>
- Cruz, G. V., Vinsonneau, G., Le Gall, A., Rivière, S., & Mullet, E. (2010). Sexual permissiveness: A Mozambique–France comparison. *Journal of Applied Social Psychology*, 40(10), 2488–2499. <https://doi.org/10.1111/j.1559-1816.2010.00667.x>
- Derogatis, L. R., Rosen, R., Leiblum, S., Burnett, A., & Heiman, J. (2002). The Female Sexual Distress Scale (FSDS): Initial validation of a standardized scale for assessment of sexually related personal distress in women. *Journal of Sex & Marital Therapy*, 28(4), 317–330. <https://doi.org/10.1080/00926230290001448>
- Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. <https://doi.org/10.1111/bjop.12046>
- Emmerink, P. M., van den Eijnden, R. J. J. M., ter Bogt, T. F. M., & Vanwesenbeeck, I. (2017). A scale for the assessment of sexual standards among youth: Psychometric properties. *Archives of Sexual Behavior*, 46(6), 1699–1709. <https://doi.org/10.1007/s10508-017-1001-x>
- Faith, M. S., & Schare, M. L. (1993). The role of body image in sexually avoidant behavior. *Archives of Sexual Behavior*, 22(4), 345–356. <https://doi.org/10.1007/BF01542123>
- Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. Psychology Press.
- Fisher, W. A., Byrne, D., White, L. A., & Kelley, K. (1988). Erotophobia-erotophilia as a dimension of personality. *Journal of Sex Research*, 25(1), 123–151. <https://doi.org/10.1080/00224498809551448>

- Gravel, E. E., Young, M. Y., Darzi, C. M., Olavarria-Turner, M., & Lee, A. M.-S. (2016). Premarital sexual debut in emerging adults of South Asian descent: The role of parental sexual socialization and sexual attitudes. *Sexuality & Culture*, 20(4), 862–878. <https://doi.org/10.1007/s12119-016-9362-1>
- Haesler, E., Bauer, M., & Fetherstonhaugh, D. (2016). Sexuality, sexual health and older people: A systematic review of research on the knowledge and attitudes of health professionals. *Nurse Education Today*, 40, 57–71. <https://doi.org/10.1016/j.nedt.2016.02.012>
- Hammond, E. M., Berry, M. A., & Rodriguez, D. N. (2011). The influence of rape myth acceptance, sexual attitudes, and belief in a just world on attributions of responsibility in a date rape scenario. *Legal and Criminological Psychology*, 16(2), 242–252. <https://doi.org/10.1348/135532510X499887>
- Hart, T. A., Mustanski, B., Ryan, D. T., Gorbach, P. M., Stall, R. D., Surkan, P. J., & Plankey, M. (2015). Depression and sexual dysfunction among HIV-positive and HIV-negative men who have sex with men: Mediation by use of antidepressants and recreational stimulants. *Archives of Sexual Behavior*, 44(2), 399–409. <https://doi.org/10.1007/s10508-014-0279-1>
- He, S., Tsang, S., Zou, H., & Wu, Y. (2010). Psychometric properties of the Sexual Attitudes Scale in a sample of unmarried Chinese young adults. *Journal of Sex Research*, 47(4), 269–278. <https://doi.org/10.1080/00224490903062241>
- Hendrick, C., Hendrick, S. S., & Reich, D. A. (2006). The brief sexual attitudes scale. *Journal of Sex Research*, 43(1), 76–86. <https://doi.org/10.1080/00224490609552301>
- Hendrick, S. S., & Hendrick, C. (1995). Gender differences and similarities in sex and love. *Personal Relationships*, 2(1), 55–65. <https://doi.org/10.1111/j.1475-6811.1995.tb00077.x>
- Hendrick, S., & Hendrick, C. (1987). Multidimensionality of sexual attitudes. *Journal of Sex Research*, 23(4), 502–526. <https://doi.org/10.1080/00224498709551387>
- Hendrick, S., Hendrick, C., Slapion-Foote, M. J., & Foote, F. H. (1985). Gender differences in sexual attitudes. *Journal of Personality and Social Psychology*, 48(6), 1630–1642. <https://doi.org/10.1037/0022-3514.48.6.1630>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Karaçam, Ö., Totan, T., Korkmaz, Y. B., & Koyuncu, M. (2012). Hendrick cinsel tutum ölçeği kısa formunun Türkçeye uyarlanması, geçerlilik ve güvenilirlik çalışması [Turkish adaptation of the Hendrick brief sexual attitudes scale, validity and reliability study]. *Anadolu Psikiyatri Dergisi*, 13(2), 138–144. <https://login.ezproxy.elib10.ub.unimaas.nl/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2014-08775-008&site=ehost-live&scope=site>
- Kiss, M. J., McDonagh, L. K., Sparks, B., Hamp, T., & Morrison, T. G. (2021). Accurately assessing gay men's erectile functioning: A critique of the International Index of Erectile Function (IIEF) use with gay men. *Journal of Sex Research*, 58(5), 589–598. <https://doi.org/10.1080/00224499.2020.1811195>
- Le Gall, A., Mullet, E., & Shafighi, R. (2002). Age, religious beliefs, and sexual attitudes. *Journal of Sex Research*, 39(3), 207–216. <https://doi.org/10.1080/00224490209552143>
- Leri, G., & DelPriore, D. J. (2021). Understanding variation in women's sexual attitudes and behavior across sexual orientations: Evaluating three hypotheses. *Personality and Individual Differences*, 173, 110629. <https://doi.org/10.1016/j.paid.2021.110629>
- Lou, J.-H., & Chen, S.-H. (2009). Relationships among sexual knowledge, sexual attitudes, and safe sex behaviour among adolescents: A structural equation model. *International Journal of Nursing Studies*, 46(12), 1595–1603. <https://doi.org/10.1016/j.ijnurstu.2009.05.017>
- Marcinechová, D., & Záhorcová, L. (2020). Sexual satisfaction, sexual attitudes, and shame in relation to religiosity. *Sexuality & Culture*, 24(6), 1913–1928. <https://doi.org/10.1007/s12119-020-09727-3>
- McKenna, J. L., Roemer, L., & Orsillo, S. M. (2022). Gender and sexual minority status as predictors of sexual consent attitudes among cisgender young adults. *Psychology & Sexuality*, 13(5), 1288–1302. <https://doi.org/10.1080/19419899.2021.2018354>
- Moreno-Pérez, O., Escóin, C., Serna-Candel, C., Picó, A., Alfayate, R., Merino, E., Reus, S., Boix, V., Sanchez-Paya, J., & Portilla, J. (2010). Risk factors for sexual and erectile dysfunction in HIV-infected men: The role of protease inhibitors. *AIDS*, 24(2), 255–264. <https://doi.org/10.1097/QAD.0b013e328334444b>
- Nikirashidi, F., Ghorashi, Z., Esmaeilzadeh, S., & Asadollahi, Z. (2019). A study on association of premarital attitude toward intact hymen in new grooms: A cross-sectional study. *Journal of Education and Health Promotion*, 8, 52. https://doi.org/10.4103/jehp.jehp_161_18
- Peixoto, M. M. (2021). Measurement invariance of female sexual function index: A study with heterosexual and lesbian Portuguese women. *Women & Health*, 61(8), 811–818. <https://doi.org/10.1080/03630242.2021.1970084>
- Pottinger, A. M., Carroll, K., & Mason, G. (2016). Male attitude towards masturbating: An impediment to infertility evaluation and sperm parameters. *Andrologia*, 48(7), 774–778. <https://doi.org/10.1111/and.12511>
- Raju, N. S., Laffitte, L. J., & Byrne, B. M. (2002). Measurement equivalence: A comparison of methods based on confirmatory factor analysis and item response theory. *The Journal of Applied Psychology*, 87(3), 517–529. <https://doi.org/10.1037/0021-9010.87.3.517>

- Rosen, R., Brown, C., Heiman, J., Leiblum, S., Meston, C., Shabsigh, R., Ferguson, D., & D'Agostino, R. (2000). The female sexual function index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex & Marital Therapy*, 26(2), 191–208. <https://doi.org/10.1080/009262300278597>
- Rosen, R., Riley, A., Wagner, G., Osterloh, I. H., Kirkpatrick, J., & Mishra, A. (1997). The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology*, 49(6), 822–830. [https://doi.org/10.1016/S0090-4295\(97\)00238-0](https://doi.org/10.1016/S0090-4295(97)00238-0)
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>
- Rutkowski, L., & Svetina, D. (2017). Measurement invariance in international surveys: Categorical indicators and fit measure performance. *Applied Measurement in Education*, 30(1), 39–51. <https://doi.org/10.1080/08957347.2016.1243540>
- Sakaluk, J. K., & Milhausen, R. R. (2012). Factors influencing university students' explicit and implicit sexual double standards. *Journal of Sex Research*, 49(5), 464–476. <https://doi.org/10.1080/00224499.2011.569976>
- Sanchez, D. T., Fetterolf, J. C., & Rudman, L. A. (2012). Eroticizing inequality in the United States: The consequences and determinants of traditional gender role adherence in intimate relationships. *Journal of Sex Research*, 49(2-3), 168–183. <https://doi.org/10.1080/00224499.2011.653699>
- Santos-Iglesias, P., Mohamed, B., Danko, A., & Walker, L. M. (2018). Psychometric validation of the female sexual distress scale in male samples. *Archives of Sexual Behavior*, 47(6), 1733–1743. <https://doi.org/10.1007/s10508-018-1146-2>
- Schiavi, R. C., Derogatis, L. R., Kuriansky, J., O'Connor, D., & Sharpe, L. (1979). The assessment of sexual function and marital interaction. *Journal of Sex & Marital Therapy*, 5(3), 169–224. <https://doi.org/10.1080/00926237908403730>
- Spinhoven, P., Ormel, J., Sloekers, P. P., Kempen, G. I., Speckens, A. E., & Van Hemert, A. M. (1997). A validation study of the hospital anxiety and depression scale (HADS) in different groups of Dutch subjects. *Psychological Medicine*, 27(2), 363–370. <https://doi.org/10.1017/S0033291796004382>
- Sprecher, S., & McKinney, K. (1993). *Sexuality*. Sage Publications, Inc.
- ter Kuile, M. M., Brauer, M., & Laan, E. (2006). The Female Sexual Function Index (FSFI) and the Female Sexual Distress Scale (FSDS): Psychometric properties within a Dutch population. *Journal of Sex & Marital Therapy*, 32(4), 289–304. <https://doi.org/10.1080/00926230600666261>
- Tsai, T. I., Luck, L., Jefferies, D., & Wilkes, L. (2018). Challenges in adapting a survey: Ensuring cross-cultural equivalence. *Nurse Researcher*, 26(1), 28–32. <https://doi.org/10.7748/nr.2018.e1581>
- van Overveld, M., de Jong, P. J., Peters, M. L., van Lankveld, J., Melles, R., & ter Kuile, M. M. (2013). The Sexual Disgust Questionnaire: A psychometric study and a first exploration in patients with sexual dysfunctions. *The Journal of Sexual Medicine*, 10(2), 396–407. <https://doi.org/10.1111/j.1743-6109.2012.02979.x>
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3(1), 4–70. <https://doi.org/10.1177/109442810031002>
- Wang, C.-C. D. C., Schale, C. L., & Broz, K. K. (2010). Adult attachment; lesbian, gay, and bisexual identity; and sexual attitudes of nonheterosexual individuals. *Journal of College Counseling*, 13(1), 31–49. <https://doi.org/10.1002/j.2161-1882.2010.tb00046.x>
- Werner-Wilson, R. J. (1998). Gender differences in adolescent sexual attitudes: The influence of individual and family factors. *Adolescence*, 33(131), 519–531. <https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1998-11525-002&site=ehost-live>
- Zhang, P.-C., Chi, X.-L., & Wu, M.-X. (2012). A study of characteristics and relationship among sexual health knowledge, sexual attitude and sex-related behavior in Chinese college students. *Chinese Journal of Clinical Psychology*, 20(6), 849–853. <https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2013-04736-029&site=ehost-live>
- Ziegler, M., Kemper, C. J., & Kruijen, P. (2014). Short scales – Five misunderstandings and ways to overcome them. *Journal of Individual Differences*, 35(4), 185–189. <https://doi.org/10.1027/1614-0001/a000148>
- Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361–370. <https://doi.org/10.1111/j.1600-0447.1983.tb09716.x>