

Aleksandar Štulhofer^a

Vesna Buško^b

Pamela Brouillard^c

^aDepartment of Sociology, Faculty of Humanities and Social Sciences, University of
Zagreb

^bDepartment of Psychology, Faculty of Humanities and Social Sciences, University of
Zagreb

^cDepartment of Psychology, Texas A&M University - Corpus Christi

**DEVELOPMENT AND BI-CULTURAL VALIDATION OF THE NEW SEXUAL
SATISFACTION SCALE**

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ADDRESS FOR CORRESPONDENCE:

Dr Aleksandar Štulhofer
Sexology Unit, Dept. of Sociology
Faculty of Humanities and Social Sciences
University of Zagreb
I. Lučića 3, 10000 Zagreb, Croatia
Phone: +385 1 6120 007; 6120 170
Fax: +385 1 5136 879; 6120 007
E-mail: astulhof@ffzg.hr

DEVELOPMENT AND BI-CULTURAL VALIDATION OF THE NEW SEXUAL SATISFACTION SCALE

Abstract: We present the development and bi-cultural validation of a new composite measure of sexual satisfaction based on a 5-dimensional concept emphasizing the importance of sexual activity, sexual exchange, sexual sensations, sexual awareness/focus, and emotional closeness. Scale construction and validation were carried out using seven independent samples with over 2000 participants aged 18-55 in Croatia and the US. Reliability of the New Sexual Satisfaction Scale (the NSSS; k=20) was satisfactory in all samples and construct validity was confirmed in both cultures. The NSSS was also found to have acceptable one-month stability. A short version of the scale (k=12) demonstrated reliability and validity comparable to the full scale. It is suggested that the NSSS is a useful tool for assessing sexual satisfaction regardless of persons's gender, sexual orientation, and relationship status.

Key words: sexual satisfaction, psychometric analysis, validity, reliability, gender

Introduction

In the era of *pure relationships* and morally permissive individualism (Giddens, 1993; Halman, 1996), sexual satisfaction has become an essential element of individual well-being¹. Empirical evidence abounds, especially within the sex therapy literature (Heiman, & LoPiccolo, 1988; Zilbergeld, 1992) and research into relationship/marital quality and stability (Byers, 2005; Byers, Demmons, & Lawrance, 1998; Christopher, & Sprecher, 2000; Young et al., 2000). A number of studies have reported associations between sexual satisfaction and gender (Carpenter, Nathanson, & Kim, 2007; Štulhofer et al., 2004), age (Carpenter, Nathanson, & Kim, 2007; Young et al., 2000), and income (Christopher, & Sprecher, 2000), religiosity (Young et al., 2000), as well as with various sexual and non-sexual aspects of relationships (Bancroft, Loftus, & Long, 2003; Byers, 2005; Henderson-King, & Veroff, 1994; Pedersen, & Blekesaune, 2003; Young et al., 2000). Sexual satisfaction has been found to be positively correlated with frequency of sexual activity (Hurlbert, & Apt, 1994; Štulhofer, Gregurović, & Štulhofer, 2003; Young, & Luquis, 1998), frequency and consistency of orgasm (Darling, Davidson, & Jennings, 1991; Darling, Davidson, & Cox, 1991; Hurlbert, & Apt, 1994; Pinney, Gerrard, & Denney, 1987), as well as level of intimacy (Byers, & Demmons, 1999; Moret et al., 1998) and partner communication (Gossman et al., 2003; Štulhofer et al., 2004). Sexual satisfaction is also affected by both micro-level and macro-level phenomena - from anxiety and avoidance (Butzer, & Campbell, 2008), to female assertiveness (Whitley, &

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Poulsen, 1975), and broader cultural factors (Ah Song, Bergen, & Schumm, 1995; Carpenter, Nathanson, & Kim, 2007).

In the fields of sexual medicine and sexual psychotherapy, assessment of sexual satisfaction is one of the standard indicators of sexual health disturbances. Items measuring overall sexual satisfaction and contentment are, thus, often included in composite measures of sexual dysfunction (cf. Taylor, Rosen, & Leiblum, 1994; Rosen et al., 1997; 1999). Rejecting the notion that sexual satisfaction is a simple, one-dimensional phenomenon (one is either satisfied or dissatisfied with their sex life), Carpenter and associates suggest three distinct levels of influences on sexual satisfaction (Carpenter et al., 2007). The first or individual level contains physiological and psychological sensations and reactions, but also personal attitudes about sex. The second, relationship-related level reflects interpersonal dynamics within close relationships. The third level consists of socio-cultural influences, such as the double moral standard and gender-specific sexual socialization. This broad range of factors that can affect sexual satisfaction points to the need for more complex conceptualization and operationalization of the concept of sexual satisfaction (see Meston, & Trapnell, 2005). According to Lawrence and Byers (1995), the dominant measurement approach to sexual satisfaction is plagued by limited theoretical insight. Sexual satisfaction is often assessed with either one-item (“How satisfied you are with your sex life?”) or two-items indicators (physical and emotional satisfaction with primary sexual relationship) (Barrientos, & Paez, 2006; Carpenter, Nathanson, & Kim, 2007; Laumann et al., 1994; Lewin et al., 2000; Liu, 2003; Štulhofer et al., 2003; 2004). These approaches are characteristically used for large national studies of sexual behavior.

Early examples of a more complex measurement approach are represented by the Whitley Inventory of Sexual Satisfaction (Whitley, & Poulsen, 1975), and the Pinney Sexual Satisfaction Inventory (Pinney, Gerrard, & Denney, 1987) specifically designed to measure female sexual satisfaction. The first of the two composite instruments consists of 23 items focused solely on erotic and sexual experiences (e.g. kissing, manual stimulation of genitalia, orgasm etc.). The scale was developed using a small sample of female participants (n=45). Starting from the assumption that sexual satisfaction is gender-specific, the second instrument was developed through factor analysis of an initial pool of items generated by a review of clinical and non-clinical sexological literature. The Pinney Inventory has two dimensions (factors): general sexual satisfaction and satisfaction with one's partner factor.

In the last two decades, an increase in attention paid to sexual health issues – spearheaded by pharmacological innovations – has intensified the demand for more valid and reliable measures of sexual satisfaction. One often used instrument is the Index of Sexual Satisfaction developed by Hudson and associates (Hudson, Harrison, & Croscup, 1981; Hurlbert, & Apt, 1994; Moret et al., 1998). This scale consists of 25 items that assess one's feelings about a number of behaviors, attitudes, and preferences in sexual relationships. Another validated measure is Young's Sexual Satisfaction Scale (Young, & Luquis, 1998; Young et al., 2000) composed of 11 items adapted from the Derogatis Sexual Functioning Inventory (Davis et al., 1998: 269-271). The items indicate the level of satisfaction with frequency, variety and intensity of sexual experiences, communication with partner about sex, one's feelings after sexual activity, but also assess

the perception of one's spouse's satisfaction and whether he/she makes participant feel sexual desirable.

Two shorter, 5-item measures represent were introduced as a part of the Multidimensional Sexuality Questionnaire (Snell, 1993) and in the form of Global Measure of Sexual Satisfaction (Byers, & MacNeil, 2006). While Snell's scale consists of highly homogenous statements regarding general sexual satisfaction, the Global Measure offers an interesting approach based on multi-dimensional answer to a single question assessing sexual satisfaction with one's partner. The question is followed by five 7-point bipolar scales (good/bad, pleasant/unpleasant, positive/negative, satisfying/unsatisfying, valuable/worthless) used for recording answers.

Another measure that focuses on sexual satisfaction in committed relationships is the Interpersonal Exchange Model of Sexual Satisfaction (Byers, 2005; Byers, & Demmons, 1999; Byers, & MacNeil, 2006; Demmons, & Lawrance, 1998). The instrument is strongly and explicitly based on the exchange theory (Sprecher, 1998). Sexual satisfaction is conceptualized to have a dyadic background operationalized through the following four dimensions (Lawrance, & Byers, 2005): (a) the balance between sexual costs and benefits (rewards), (b) the balance between expected and experienced sexual costs and benefits, (c) perceived equality of partners in sharing sexual costs and benefits, and (d) relationship satisfaction. Focused on the dyadic character of sexual satisfaction, the measure is used for individuals in close relationships.

Some instruments, such as Golombok-Rust Inventory of Sexual Satisfaction (GRISS), do not measure sexual satisfaction, but rather the lack of it (Rust, & Golombok, 1986). The recently developed the Sexual Satisfaction Scale for Women (SSS-W), is an

attempt to assess both sexual satisfaction and distress (Meston, & Trapnell, 2005).

Although the authors started from a two-dimensional theoretical model (based on relevant research literature), which distinguishes between personal sexual satisfaction and the assessment of one's partner's and relationship-related satisfaction, the final scale has five subscales (satisfaction, communication, compatibility, personal distress, and relationship related distress) with 30 items altogether.

In the following sections we present theoretical underpinnings, development, and empirical validation of a new composite measure intended for assessing personal sexual satisfaction regardless of participant's gender, relationship status, and sexual orientation. The need for such an instrument, in our opinion, stems from the fact that currently available measures, particularly those with explicit theoretical background, are limited to particular class of individuals (women, heterosexual individuals or people in committed relationships, etc.).

Theoretical Background

A new scale for measuring sexual satisfaction described in this paper was developed within a research project more broadly focused on the impact of pornography on young people's sexual socialization (Stulhofer et al., 2008). Our conceptualization of the New Sexual Satisfaction Scale is based primarily on the counseling and therapeutic literature in the field of sexual health (Bancroft 1983; Ellison, 2001; Hawton, 1986; Heiman, & LoPiccolo, 1988; Klein, 2002; Schnarch, 1991; Zilbergeld, 1992). In the first step in our instrument development, a review of psychotherapeutic guidelines and rationales for specific interventions in working with sexually complaining, dysfunctional, distressed,

and dissatisfied individuals – including advices and suggestions on how to preserve/maintain one’s sexual health – resulted in three conceptual visors (inspired by John Bancroft’s “three windows” approach to assessing sexual difficulties). These visors were used to approach sexual satisfaction in a systematic fashion. The first, personal visor, refers to individual characteristics and habits including perception of sexual stimuli, the ability to focus on sexual stimuli and feelings, and other relevant physiological and psychological reactions. The second visor is interpersonal, and it takes into consideration emotional exchange between sexual partners, especially (but not exclusively) if they are in a long-term relationship. The third visor, the repertorial one, focuses on the characteristics of sexual activities, their frequency, variety, and intensity.

In the second step, the three visors were used to derive the main dimensions of sexual satisfaction from clinical or clinically informed sexual health literature. Focusing on the factors that influence (positively or negatively) sexual health and, consequently, sexual satisfaction, we defined five dimensions on which our conceptual model of sexual satisfaction rests: (1) sexual sensations (first visor), (2) sexual presence/awareness (first visor), (3) sexual exchange (second visor), (4) emotional connection/closeness (second visor), and (5) sexual activity (third visor). Figure 1 provides a brief overview of the derived dimensions and the related core categories.

The first of the dimensions, sexual sensations, denotes the realm of sexual pleasure (or its absence). Pleasurable sexual sensations are the foundation of sexual “trance” and, as such, the prime motivation behind the repetition of sexual contacts. It is a simple virtuous circle (Hurlbert, & Apt, 1994): pleasure brings more sex and more sex brings more pleasure. Sexual satisfaction is thus closely related to varied and pleasurable

sexual sensations (Carpenter, Nathanson, & Kim, 2007; Štulhofer et al., 2003). The importance of sexual presence/awareness is evident in clinical literature (Bancroft, 1983; Hawton, 1986; Heiman, & LoPiccolo, 1988), which points out that the ability to focus on erotic and sexual sensations is essential for sexual sensations to be (felt as intensely) pleasurable. A deficit of sexual awareness could be a consequence of excessive self-monitoring during sex (Zilbergeld, 1992) or high distractibility observed in some anorgasmic women (Heiman, & LoPiccolo, 1988).

The sexual exchange dimension emphasizes the importance of reciprocity in sexual contacts. Radical discrepancy between giving and receiving of sexual attention and pleasuring can impact one's sexual contentment negatively, particularly if such inequality is perceived as chronic (Byers, Demmons, & Lawrance, 1998; Lawrance, & Byers, 1995; Sprecher, 1998). Emotional connection/closeness has also been associated with sexual satisfaction and contentment, both clinically and anecdotally. It can be argued that a strong emotional bond and intimacy can generate long-term sexual interest (Ellison, 2001; Schnarch, 1991). Among women, one of the mechanisms behind sexual satisfaction could be the association between emotional closeness and trust on the one hand and sexual letting go, important for orgasmic efficacy, on the other hand (Heiman, & LoPiccolo, 1988). As suggested by several recent studies, emotional contact and intimacy may also be important for male sexual satisfaction (Byers, 2005; Carpenter, Nathanson, & Kim, 2007; Štulhofer et al., 2004).

The final dimension underscores the importance frequency, duration, variety, and intensity of sexual activities for sexual satisfaction among both women and men. Although quality of sexual contacts can be evaluated as more important than quantity,

particularly at certain age (Štulhofer et al., 2004), the association between frequency of sexual activities and sexual satisfaction was reported in a number of recent studies (see Štulhofer et al., 2003; Young et al., 1998). While the lack of sexual diversity is often coupled with sexual boredom, the duration of sexual contact proved significant for female orgasmic experience (Heiman, & LoPiccolo, 1988).

FIGURE 1 ABOUT HERE!

In the third step, following the 5-dimensional conceptual framework, an initial pool of items (35) was generated by the first author. Whenever possible, each dimension was operationalized with approximately the same number of items. Once completed, the list was discussed and revised by a couple of international sex researchers and a group of graduate students. The items were originally formulated in Croatian and then jointly translated by the first and the third author. Back-translation was not attempted since the two authors worked jointly on translation. The final editing of item formulations was carried out by a Canadian sex researcher unacquainted with the study.

Methods

Participants

Analyses presented here are based on seven independent samples, five of which were surveyed in Croatia and two in the U.S. Of the seven, three were student samples (two collected in Croatia and one in the U.S), two were community samples (a Croatian and

the U.S. one), one sample was clinical (sexual psychotherapy clients), and the final one consisted of non-heterosexual Croatian men and women.

In Croatia, we surveyed 544 sexual active students attending various universities (age range 18-25; $M=21.3$, $SD=1.66$) and 729 adults (age range 30-55, $M=34.1$, $SD=6.64$) using online questionnaires. Women constituted a majority in both samples: 66% of the student sample and 64% in the community sample. Another student sample, consisting of 219 students of the University of Zagreb ($M=20.7$, $SD=2.14$), of which 53% were women, was surveyed twice, one month apart, using the standard pencil and pen format.

Two other samples were surveyed in Croatia. The first consisted of 360 non-heterosexual individuals, of which less than one third (28.3%) were women, who were contacted and surveyed online. The average age in the sample was 26.1 ($SD=6.67$). The other sample included 54 individuals (22 women and 32 men) with either individual or couple sexual difficulties, diagnosed according to DSM IV criteria by a number of Croatian sex counselors and therapists. The average age in this sample was 34.6 years ($SD = 7.96$).

Two samples were surveyed in the U.S., both using online questionnaires. The first was a sample of sexually active students, aged 18-26 ($n=356$; $M=20.4$, $SD=1.93$), from a medium sized Southern university. Women constituted over two thirds (70.6%) of the sample. Women were also predominant (65.1%) in the community sample, which included 212 participants with the average age of 40.7 years ($SD=8.72$).

In all three student samples used, participants who reported that they never had sexual intercourse were excluded from analyses.

Procedures

Five of the seven samples were obtained and surveyed via Internet, using electronic invitations and online surveys. The standard pen and paper format was used in only two Croatian samples, the second student sample (the test-retest one) and the clinical sample.

In Croatia and the U.S., a student and a community sample were obtained using online surveying. Both questionnaires used in the study – student samples were surveyed with a long (30-40 minutes) and community samples with a brief (5-minute) form – were constructed and administered using a commercial site (dedicated to online survey research) tools. To protect privacy, permanent recording of participant's IP number was disabled during data collection. In Croatia, participation in the study was sought primarily through social networks (student networks were used for the student sample). A generic message describing the study and containing two links to the online questionnaire was sent to consenting students enrolled in a large human sexuality class (taught by the first author). In the text, the recipient was asked to follow the link and fill in the questionnaire, as well as to forward the message to their partners, friends, and acquaintances aged 18-25 years. In this manner, the study invitation rapidly proliferated within and along peer networks. A similar chain referral procedure was used in the case of the community samples; here the target age range was set between 30 and 55.

Participants in the U.S. student sample were solicited from undergraduate courses across disciplines at the beginning of the spring semester 2008. After obtaining permission from the lecturer, a graduate assistant visited the class, briefly introduced the survey, and distributed a handout that directed potential participants to a survey website.

Students were also advised that they could forward information about the survey to other students at the university providing they were age 18 or older.

To obtain a sample of non-heterosexual individuals, banners containing basic information about the study were posted on several Croatian gay and lesbian Web sites. A generic message, similar to the one used for the student and community samples, was posted on forums frequently used by gay and lesbian populations and sent through a network of gay and lesbian activists. Slight alterations were made to some items in the brief questionnaire form to make them appropriate for non-heterosexual participants. A question asking for sexual partners' sex was added to verify membership in the target population. Online surveying procedure was identical to the one previously described.

The second Croatian student sample was tested twice with a one month interval between testings. At both times, a brief questionnaire was administered in the classroom to groups of students of varying size (20-50). Where classes were large, students were divided into smaller groups and surveyed sequentially to maintain confidentiality. Test and re-test questionnaires were matched using individual codes devised by participants.

The clinical sample of individuals with personal and/or couple-related sexual difficulties was tested in the offices of a dozen of sex counselors and therapists who are members of the Croatian Association for Sexual Therapy (Arbanas et al., 2007). The inclusion criterion was the persistent or recurrent distressful presence of one or more sexual disorders related to sexual desire, sexual arousal, orgasm, or sexual pain (American Psychiatric Association, 2000).

All procedures were approved by the Department of Sociology, Faculty of Humanities and Social Sciences of the University of Zagreb and the Texas A&M

University at Corpus Christi ethical review boards. Data collection was completed between November 2007 and March 2008.

Measures

Except for a new sexual satisfaction scale, instruments presented in this section were pre-tested in 2006 and 2007 as a part of the first author's study on pornography and sexual socialization (Štulhofer et al., 2007). In this study, they were included in the longer questionnaire (217 variables) used for surveying the Croatian and the US student sample. In all other samples, including the second Croatian student sample, a brief version (37-44 variables) of the questionnaire was used, consisting of 35 sexual satisfaction items and a few sociodemographic questions (including the one on sexual activity in the preceding month). The longer version was composed of several modules. In addition to the sociodemographic module, the questionnaire included attitudes toward sexuality and pornography, personal experience with pornography module, sexual experiences module, the ideal sex script module, and a set of items assessing sexual satisfaction.

English version questionnaires were translated (from Croatian) by the first author and then edited by the third author, keeping as close as possible to the Croatian original.

A single item indicator was used as a global measure of *sexual satisfaction* ("All in all, how satisfied are you with your sex life at the moment?"). Responses were indicated on a 7-point scale, ranging from 1=extremely satisfied to 7=extremely dissatisfied, was used for answers. Responses were reverse scored during data analysis, so that higher scores reflected higher satisfaction with one's sex life.

To assess *general life satisfaction* the following standard question was used: “All things considered, how satisfied are you with your life as a whole these days?”. Answers were recorded on a 7-point scale (1=extremely satisfied, 7=extremely dissatisfied). The scores were recoded, so that higher scores indicate higher satisfaction with one’s life.

The degree of intimacy in current relationship – or, if currently not in a relationship, in the most recent one – was assessed by five items based on the Miller Social Intimacy Scale (Miller & Lefcourt, 1982). The items measured the degree to which one feels close to a partner, readiness to help the partner when he/she has problems or feels low, the need to open up emotionally to one’s partner, etc. All items were anchored on a 5-point scale ranging from “almost never” to “almost always”, with higher composite scores denoting higher levels of intimacy. The scale proved to have acceptable internal consistency (Cronbach’s $\alpha = .77$).

Partner communication about sex was assessed with seven questions regarding communication with one’s partner about personal and partner’s sexual history, personal and partner’s sexual preferences, pornography, etc. The scale ($\alpha = .79$) was a simple linear combination of the seven items and had 0-7 theoretical range of scores, where a larger score indicated more partner communication.

Sexual boredom was assessed using a 5-item scale obtained by shortening the Sexual Boredom Scale (Watt & Ewing, 1996) after it was pre-tested in another study involving Croatian students in 2006. Responses were recorded on a 5-point scale (from 1=completely disagree to 5=completely agree). Larger scores reflected being more easily and rapidly bored with repetitive sexual experiences. Internal consistency of this shortened scale was satisfactory (Cronbach $\alpha = .85$).

Self-reported sexual difficulties were assessed with six (yes/no) questions inquiring about difficulties with sexual desire, sexual arousal, orgasm and sexual pain domains during the preceding two or more months (Laumann et al., 2005). Any reported difficulty was coded 1 and its absence 0.

Results

Factor Structure and Descriptives

Using data from two Croatian samples, principal component analysis was carried out on an initial pool of 35 Likert-type items generated following the five-dimension conceptual framework described earlier. The analysis extracted six components with eigenvalues >1 , which were then rotated to oblique position using oblimin method ($\delta=0$). Two of the components were found only marginally related to the rest of the structure. While the first was composed of two items focusing on situational aspects (time and space needed for sexual activities), the second one consisted of two items tapping into the importance of protection from unwanted pregnancy and sexually transmitted infections. These four items, plus an additional one that was judged ambivalent in content, were omitted from subsequent analyses.

Factor analysis was repeated on the remaining 30 items. This time four datasets were used (two Croatian and two U.S. samples). Depending on the sample, 4-6 components with eigenvalues >1 were extracted, accounting for 66-73% of the total item variance. In each of the samples, the first two components had eigenvalues above 13 and 2, respectively, while the others were slightly above 1. These eigenvalues strongly suggested the presence of one general component. However, observed structures differed

across samples and were hard to interpret. Based on the observed eigenvalues and the scree test results, 2-factor solution was forced and then rotated using direct oblimin method with Kaiser normalization. Although the procedure resulted in somewhat reduced proportion (54-58%) of the explained total item variance, obtained solution enabled clear and consistent interpretation across samples. Table 1 shows the pattern matrices, item factor loadings ($>.30$) and component intercorrelations in two student and two community samples from Croatia and the U.S. Larger in size, the Croatian samples permitted carrying out the described procedure separately by gender. The analysis (not show here) produced highly similar pattern matrices to those reported in Table 1 (Štulhofer & Buško, 2008).

TABLE 1 ABOUT HERE!

In the obtained factor structure we identified a component composed of items denoting personal erotic/sexual experience and sensations, and a component consisted of items focusing on partner's erotic/sexual reactions, together with frequency and variety of sexual activities. As presented in Table 1, factor correlations ranged from .52 to .61, suggesting a broader common foundation.

The selection of items per component was performed according to standard criteria of simple structure, factor loadings, and content overlap (redundancy). Respecting both statistical and content related characteristics, 20 items (ten per component) were retained from the initial set of 30. Based on our interpretation of the two components, the following subscales were created: *the Ego-centered subscale*, which measures sexual

satisfaction generated by personal experiences/sensations, and *the Partner/sexual activity centered subscale*, which measures sexual satisfaction derived from partner's sexual behavior/reactions and the diversity and/or frequency of sexual activities (cf. Appendix). The two subscales formed *the New Sexual Satisfaction Scale* (NSSS).

The Short Version of the NSSS (NSSS-S) was created following somewhat different procedure, the one in which the 20 NSSS items were first divided into five clusters representing the initial conceptual dimensions. In the next step, 2-3 items per cluster were selected (depending on cluster size) based on their item-total correlation (in the NSSS subscales). Initially, the number of items for the short version was *a priori* set to 10, but it was expanded to 12 to include items from all five dimensions (see Appendix). Additional principal component analysis of the 12 NSSS-S items showed that all items loaded highly ($>.59$ in student, and $>.58$ in community samples) on a single factor with eigenvalue >1 .

Table 2 summarizes basic descriptive data on sexual satisfaction scale scores in five independent samples. In both Croatian and the US samples, the NSSS scores ranged between 20 and 100, and the NSSS-S scores between 12 and 50, covering the full range. The NSSS, its subscales, and the NSSS-S scores displayed a characteristic asymmetric distribution with the mean scores leaning toward more satisfaction (the right-hand part of distribution), as confirmed by obtained asymmetry values, ranging from $-.52$ to -1.2 in Croatian samples and from $-.39$ to $-.59$ in the US samples. A comparison of scale and subscale means across the samples pointed to interesting and systematic differences in levels of sexual satisfaction. Contrary to our expectations, there were no differences in sexual satisfaction scores between participants in student and community samples, neither

in Croatia, nor in the US. However, individuals surveyed in Croatia consistently displayed higher sexual satisfaction than the U.S. participants. Significant differences were found on all four scales ($F=13.09, p<.001$; $F=22.02, p<.001$; $F=21.39, p<.001$; $F=18.33, p<.001$, respectively) and Bonferroni multiple comparison tests confirmed country-specific levels of sexual satisfaction. In regard to gender differences, Croatian men outscored women on the ego-centered subscale ($t=-4.74, df=972.46, p<.001$). No such difference was observed among the U.S. participants. However, on the other/sexual activity centered subscale, gender differences were found in both countries, with women scoring significantly higher than men ($t_{Croatia}=5.63, df=1220, p<.001$ and $t_{US}=4.83, df=255.50, p<.001$).

Significant gender differences in the NSSS and NSSS-S ($t=2.81, df=467, p<.01$ and $t=2.64, df=483, p<.01$, respectively) scores were observed only among the U.S. participants, as well as in non-heterosexual Croatian sample ($t_{NSSS}=-2.77, df=324, p<.01$ and $t_{NSSS-S}=-2.74, df=333, p<.01$). Finally, although non-heterosexual Croatian men reported substantially lower NSSS scores than heterosexual men ($t=-3.37, df=431.34, p<.01$), their sexual satisfaction was found higher than among the surveyed U.S. men's (the difference did not reach statistical significance, possibly due to small size of the U.S. male subsample).

TABLE 2 ABOUT HERE!

Reliability: Internal Consistency and Stability

Table 2 also contains Cronbach alpha coefficients for the NSSS and NSSS-S in five independent samples. Taking into account the potential effects of gender specific sexual socialization, this analysis was carried out separately for women and men. Internal consistency in two student, two community samples, and a sample of Croatian non-heterosexual adults was satisfactory for the full scale ($\alpha=.94-.96$), both subscales ($\alpha=.91-.93$ and $.90-.94$, respectively), and the short version ($\alpha=.90-.93$). No substantial differences related to either gender or sexual orientation were observed. Additional analysis performed on the Croatian student sample dataset showed that the NSSS and SNSS internal consistency coefficients were similar in the group of participants currently in a relationship and those who were single ($\alpha=.87-.96$). This remained the case even after separate analyses were done for men and women.

Test-retest reliability of the NSSS and NSSS-S was shown to be satisfactory in a sample of Croatian students over a 4-week period (Table 3). Stability coefficients ranged from 0.72 to 0.84, with somewhat stronger associations reported among women.

TABLE 3 ABOUT HERE!

Construct Validity

Zero-order correlations between the NSSS/NSSS-S scores and the measures of constructs associated in literature with sexual satisfaction were analyzed (Table 4). The NSSS/NSSS-S were shown to be significantly, and in the expected direction, associated with a global measure of life satisfaction. Negative correlations with sexual boredom scores and positive correlations with relationship intimacy, partner communication about

sex, and relationship status were also found to be significant among men and women in both the Croatian and the U.S. student samples.

In support of convergent validity, associations between a global measure of sexual satisfaction and the NSSS/NSSS-S scores were significant and strong in both samples ($r=.44-.67$). Correlation coefficients were systematically lower in the U.S. sample.

TABLE 4 ABOUT HERE!

Further, the differences in the average NSSS and NSSS-S scores were tested between samples of Croatian students with and without self-reported sexual difficulties (Table 5). The same procedure was then applied to the average scores of participants in the clinical (sex therapy clients) and non-clinical sample. As expected, both comparisons found that participants without sexual difficulties (self-reported or diagnosed) reported higher sexual satisfaction. (All the differences were statistically significant.) In the case of more objectively assessed sexual difficulties, the values of Cohen's d suggested that the observed differences are large in size (Cohen, 1988). For example, the overlap between the full NSSS scores in the clinical and non-clinical sample was 32 percent.

In addition, discriminant analysis was carried out to predict membership in the clinical vs. non-clinical group. With the probability of group membership set to equal, the analysis that used the NSSS as predictor produced 80.3% of correctly classified cases. In the clinical group, the procedure correctly classified 64.8% of cases. Using the NSSS-S as independent variable resulted in only slightly lower percentages of correct classifications (79.6% and 63%, respectively).

TABLE 5 ABOUT HERE!

Discussion

In this paper we presented the development and validation of a new instrument for measuring sexual satisfaction. The validation procedure, carried out on an initial set of items describing various facets of sexual satisfaction, tested the proposed 5-dimensional concept. Exploratory factor analyses did not support our assumption. The analyses, which were performed on a number of independent samples with participants of different characteristics (gender, age, sexual orientation, sexual health issues), produced consistent findings. Beneath the observed variation, linked to different latent aspects of sexual satisfaction, two interrelated dimensions were observed. The first was primarily focused on personal experiences and sensations, while the second reflected partner's reactions and sexual activity in general. Taking into account strong association between the two domains, our findings pointed to relatively high homogeneity of sexual satisfaction concept.

The obtained two-factor solution was not entirely surprising. A recent empirical study emphasized similar dimensions in a theoretical framework related to female sexual satisfaction and distress. More specifically, Meston and Trapnell (2005) argued that personal and relational dimension should be distinguished when analyzing female sexual satisfaction and distress. Although their relational dimension differs somewhat from our partner and sexual activity focused domain, the theoretical concept that Meston and Trapnell started from displays similarities with our findings.

Descriptive analysis of sexual satisfaction scores in different samples pointed to interesting and systematic differences in sexual satisfaction between the U.S. and Croatian participants. On the NSSS, both of its subscales, and the NSSS-S, Croatian men and women scored higher than their American counterparts. This points to an interesting cultural effect. Although our datasets do not allow an analysis into possible mechanisms, a plausible interpretation points to different sets of social expectations regarding sexual satisfaction, as presented in the dominant popular culture discourse (cf. *Playboy*, *Cosmopolitan*, etc.). As the European approach to sex and sexuality is usually interpreted as more casual (matter-of-factly) and less titillating in comparison to the US one, the role of popular media should be taken into account here.

Noteworthy is also the finding that heterosexual women, overall, reported more sexual satisfaction than men, but only in the U.S. samples. This could mean that women are under less pressure from socio-cultural expectations related to sexual satisfaction or that they have profited from decreasing gender inequality more than men. The finding that non-heterosexual women were also more sexually satisfied than their male counterparts probably involves some other factors that are beyond the scope of this study.

Stability coefficients and differences in sexual satisfaction between two measurements found in a sample of Croatian students should be viewed in the context of participants' relative sexual inexperience. The largest, and the sole statistically significant difference was found, among women only, on the partner and activity focused subscale. Since women reported less sexual experience than men – as reflected in fewer sexual partners (lifetime) and sexual acts tried – the finding seems to support the assumption of

potentially high marginal value of any new sexual episode among sexually less experienced individuals.

Several cultural differences were observed when inspecting associations between sexual satisfaction scores and a number of theoretically related constructs. Croatian students systematically reported stronger association between being in a relationship and sexual satisfaction, particularly on the partner and activity focused subscale. Another difference was observed in the case of sexual boredom, which was strongly (and negatively) correlated with sexual satisfaction among Croatian participants and only moderately among the US participants. On the basis of the strength of relationship between sexual satisfaction and the one-item indicator of satisfaction with one's sex life, the use of the later seems more justified in researching Croatian than the US students.

As expected, participants with self-reported and diagnosed sexual difficulties reported significantly lower levels of sexual satisfaction than controls. The distinction between the subjective and a more objective assessment of sexual difficulties was reflected in effect size of differences in sexual satisfaction between participants with and without difficulties in sexual functioning. The comparison using a clinical and control sample of Croatian adults resulted in substantially higher effect sizes than the comparison involving students. This finding corresponds not only with the level of objectiveness in assessing sexual difficulties, but also with a clinical observation that young, and relatively sexually inexperienced individuals may perceive as sexually dysfunctional experiences, usually transient, that are merely the products of one's (or one's partner's) lack of experience.

It should be noted that in the student comparison (individuals with and without self-reported sexual difficulty) a larger difference was found in the ego focused subscale. This was expected, since participants were asked about their own sexual problem. In the case of clinical sample of Croatian adults, comprised mostly of couples, sexual problem(s) were, regardless of their personal origin, a property of the couple. This was reflected in almost identical size effects of differences between the clinical and control sample on both subscales.

In regard to study limitations, several problems associated with online surveying, such as the possibility of personal misrepresentation or lack of control over conditions during participation, could not be ruled out in five of seven independent samples used. Since all were non-probability samples, the degree to which they represent respective populations could not be assessed. Finally, since sex-related surveys are prone to self-selection bias – the more sexually experienced and permissive individuals are usually overrepresented in sex research studies (Wiederman, 1999) – it could be that the average levels of sexual satisfaction were actually overestimated in this study.

Conclusions

In this paper, we presented the development and bi-cultural validation of a new composite measure of sexual satisfaction. Having in mind the psychometric properties presented, we believe that the instrument, and especially its short version, could be useful in sex research, clinical studies, and research on quality of life. In the context of sex therapy, for instance, the NSSS may show to be applicable in the assessment of client's perception of the discrepancy between personal and partner's sexual reactions and their

contribution to overall sexual satisfaction. Considering the fact that the New Sexual Satisfaction Scale was developed using a number of independent samples, which included women and men of different age, relationship status, and sexual orientation, it is our belief that the proposed instrument left out some of the limitations of the previous measures.

References

- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR /Fourth Edition/*. Washington, DC: American Psychiatric Association.
- Ah Song, J., Bergen, M. B., & Schumm, W. R. (1995). Sexual satisfaction among Korean American couples in the Midwestern United States. *Journal of Sex & Marital Therapy, 21*, 147-158.
- Arbanas, G., Knez, R., Barolin, N., & Štulhofer, A. (2007). Hrvatsko društvo za seksualnu terapiju i uvjeti za stjecanje diplome seksualnog terapeuta /Croatian Association for Sex Therapy and conditions for achieving certificate for sexual therapist/. *Medicina, 43*, 311-312.
- Bancroft, J. (1983). *Human sexuality and its problems*. New York: Churchill Livingstone.
- Bancroft, J., Loftus, J., & Long, J. S. (2003). Distress about sex: A national survey of women in heterosexual relationships. *Archives of Sexual Behavior, 32*, 193–208.
- Barrientos, J. E., Paez, D. (2006). Psychosocial variables of sexual satisfaction in Chile. *Journal of Sex & Marital Therapy, 32*, 351-368.
- Butzer, B., Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships, 15*, 141–154.
- Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research, 42*, 113-118.

- Byers, E. S., Demmons, S. (1999). Sexual satisfaction and sexual self-disclosure within dating relationships. *Journal of Sex Research*, 36, 180-189.
- Byers, E. S., Demmons, S., & Lawrance, K., (1998). Sexual satisfaction within dating relationships: A test of the interpersonal exchange model of sexual satisfaction. *Journal of Social and Personal Relationships*, 15, 257-267.
- Byers, E. S., MacNeil, S. (2006). Further validation of the interpersonal exchange model of sexual satisfaction. *Journal of Sex & Marital Therapy*, 32, 53–69.
- Carpenter, L. M., Nathanson, C. A., & Kim, Y. J. (2007). Physical women, emotional men: gender and sexual satisfaction in midlife. *Archives of Sexual Behavior*, DOI: 10.1007/s10508-007-9215-y.
- Christopher, F. S., Sprecher, S. (2000). Sexuality in marriage, dating, and other relationships: A decade review. *Journal of Marriage and the Family*, 62, 999-1017.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Earlbaum Associates.
- Darling, C. A., Davidson, J. K., & Cox, R. P. (1991). Female sexual response and the timing of partner orgasm. *Journal of Sex & Marital Therapy*, 17, 3-21.
- Darling, C. A., Davidson, J. K., & Jennings, D. A. (1991). The female sexual response revisited: Understanding the multi-orgasmic experience in women. *Archives of Sexual Behavior*, 20, 527-540.
- Ellison, C. R. (2001). Intimacy-based sex therapy: Sexual choreography. In P. J. Kleinplatz (Ed.) *New directions in sex therapy: Innovations and alternatives* (pp. 163-184). Philadelphia: Brenner-Routledge.

- Giddens, A. (1993). *Transformation of intimacy*. Stanford: Stanford University Press.
- Halman, L. C. J. M. (1996). Is there a moral decline? A cross national inquiry into morality in contemporary society. *International Social Science Journal*, 67, 57-79.
- Hawton, K. (1986). *Sex therapy: A practical guide*. Oxford: Oxford University Press.
- Henderson-King, D. H., Veroff, J. (1994). Sexual satisfaction and marital well-being in the first years of marriage. *Journal of Social and Personal Relationships*, 11, 509-534.
- Hudson, W. W., Harrison, D. F., & Croscup, P. C. (1981). A short-form scale to measure sexual discord in dyadic relationships. *Journal of Sex Research*, 17, 157-174.
- Hurbert, D. F., Apt, C. (1994). Female sexual desire, response and behavior. *Behavior Modification*, 18, 488-504.
- Kalichman, S. C., Rompa, D. (1995). Sexual sensation seeking and sexual compulsivity scales: Reliability, validity, and predicting HIV risk behaviors. *Journal of Personality Assessment*, 65, 586-602.
- Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (1994). *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.
- Laumann, E. O., Nicolosi, A., Glasser, D. B., Paik, A., Gingell, C., Moreira, E., & Wang, T. (2005). Sexual problems among women and men aged 40–80 y: Prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *International Journal of Impotence Research*, 17, 39–57.

- Lawrance, K., Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction. *Personal Relationships, 2*, 267-285.
- Lewin, B., Fugl-Meyer, K., Helmius, G., Lalos, A., & Mansson, S. A. (2000). *Sex in Sweden: On the Swedish sexual life*. Stockholm: National Institute of Public Health.
- Liu, C. (2003). Does quality of marital sex decline with duration? *Archives of Sexual Behavior, 32*, 55-60.
- Gossmann, I., Juliene, D., Mathieu, M., & Chartrand, E. (2003). Determinants of sex initiation frequencies and sexual satisfaction in long-term couples' relationships. *Canadian Journal of Human Sexuality, 12*, 169-181.
- Heiman, J., LoPiccolo, J. (1988). *Becoming orgasmic: A sexual and personal growth program for women*. New York: Prentice Hall.
- Klein, M. (2002): *Beyond orgasm*. Berkeley: Celestial Arts.
- MacNeil, S., Byers, E. S. (1997). The relationship between sexual problems, communication, and sexual satisfaction. *Canadian Journal of Human Sexuality, 6*, 277-283.
- Meston, C., Trapnell, P. (2005). Development and validation of a five-factor sexual satisfaction and distress scale for women: The Sexual Satisfaction Scale for Women (SSS-W). *Journal of Sexual Medicine, 2*, 66-81.
- Miller, R. S., Lefcourt, H. M. (1982). The assessment of social intimacy. *Journal of Personality Assessment, 46*, 514-518.

- Moret, L. B., Glaser, B. A., Page, R. C., & Bergeron, E. F. (1998). Intimacy and sexual satisfaction in unmarried couple relationships: A pilot study. *Family Journal, 6*, 33-39.
- Pedersen, W., Blekesaune, M. (2003). Sexual satisfaction in young adulthood: Cohabitation, committed dating or unattached Life? *Acta Sociologica, 46*, 179–193.
- Pinney, A. M., Gerrard, M., & Denney, N. W. (1987). The Pinney sexual satisfaction inventory. *Journal of Sex Research, 23*, 233-2512.
- Rosen, R., Riley, A., Wagner, G., Osterloh, I., Kirkpatrick, J., & Mishra, A. (1997). The International Index of Erectile Function: A multidimensional scale for assessment of erectile dysfunction. *Urology, 49*, 822-830.
- Rosen, R., Cappelleri, J., Smith, M., Lipsky, J., & Pena, B. (1999). Development and evaluation of an abridged, 5-Item version of the International Index of Erectile Function as a diagnostic tool for erectile dysfunction. *International Journal of Impotence Research, 11*, 319-326.
- Rust, J., Golombok, S. (1986). The GRISS: A psychometric instrument for the assessment of sexual dysfunction. *Archives of Sexual Behavior, 15*, 157-165.
- Schnarch, D. (1991). *Constructing the sexual crucible: An integration of sexual and marital therapy*. New York: W.W. Norton.
- Snell, W. E., Fisher, T. D., & Walters, A. S. (1993). The multidimensional sexuality questionnaire: An objective self-reported measure of psychological tendencies associated with human sexuality. *Annals of Sex Research, 6*, 27-55.

- Sprecher, S. (1998). Social exchange theories and sexuality. *Journal of Sex Research*, 35, 32-43.
- Sprecher, S., Cate, R. M. (2004). Sexual satisfaction and sexual expression as predictors of relationship satisfaction and stability. In J. H. Harvey, A. Wenzel, and S. Sprecher (Eds.), *The handbook of sexuality in close relationships* (pp. 235-256). Mahwah, NJ: Lawrence Erlbaum.
- Štulhofer, A. (2000). The rise of essentialism and the medicalization of sexuality. *Acta medica Croatica*, 53, 141-149.
- Štulhofer, A., Gregurović, M., & Štulhofer, D. (2003). Seksualno zdravlje, zadovoljstvo i seksualna orijentacija žena /Female sexual health, satisfaction, and sexual orientation/. *Društvena istraživanja*, 12, 635-659.
- Štulhofer, A., Zelenbrz, J., Landripet, I., Kuti, S., Gregurović, M., & Tiljak, H. (2004). Spol, starenje i seksualnost: struktura i dinamika seksualnoga zadovoljstva u heteroseksualnom uzorku urbanih žena i muškaraca /Gender, aging, and sexuality: The structure and dynamics of sexual satisfaction in a heterosexual sample of urban women and men/. *Društvena istraživanja*, 13, 1011-1029.
- Štulhofer, A., Landripet, I., Momčilović, A., Matko, V., Kladarić, P. G., & Buško, V. (2007). Pornography and sexual satisfaction in young women and men. In S. V. Knudsen, L. Lofgren-Martenson, S. A. Mansson (Eds.), *Youth, gender and pornography* (pp. 66-84). Copenhagen: Danish University Press.
- Štulhofer, A., & Buško, V. (2008). Empirijska evaluacija novog instrumenta za procjenu seksualnog zadovoljstva /Empirical evaluation of a new sexual satisfaction measure/. *Manuscript under review in the journal Suvremena psihologija*.

- Taylor, J. F., Rosen, R. C., & Leiblum, S. R. (1994). Self-report assessment of female sexual function. *Archives of Sexual Behavior, 23*, 627-643.
- Watt, J. D., Ewing, J. E. (1996). Toward the development and validation of a measure of sexual boredom. *Journal of Sex Research, 33*, 57-66.
- Whitley, M. P., Poulsen, S. (1975). Assertiveness and sexual satisfaction in employed professional women. *Journal of Marriage and the Family, 37*, 573-581.
- Wiederman, M. W. (1999): Volunteer bias in sexuality research using college student participants. *Journal of Sex Research, 36*, 59-66.
- Young, M., Luquis, R. (1998). Correlates of sexual satisfaction in marriage. *Canadian Journal of Human Sexuality, 7*, 115-127.
- Young, M., Denny, G., Young, T., & Luquis, R. (2000). Sexual satisfaction among married women. *American Journal of Health Studies, 16*, 73-84.
- Zilbergeld, B. (1992). *The new male sexuality* /Revised edition/. New York: Bantam Books.

Figure 1 – Conceptual framework of sexual satisfaction: Basic dimensions and related categories

<i>SEXUAL SATISFACTION</i>	
Individual Visor	<ol style="list-style-type: none"> 1. <i>Sexual sensation</i> <ul style="list-style-type: none"> - quality of touch/feel - quality of sexual arousal - frequency of arousal - quality of orgasm - frequency of orgasm 2. <i>Sexual presence/awareness</i> <ul style="list-style-type: none"> - feeling of letting oneself go - being focused - sexual reaction toward partner
Interpersonal Visor	<ol style="list-style-type: none"> 3. <i>Sexual exchange</i> <ul style="list-style-type: none"> - receiving pleasure - giving pleasure - partner's sexual availability - partner's sexual initiative - partner's sexual creativity - balance between giving and receiving 4. <i>Emotional connection/closeness</i> <ul style="list-style-type: none"> - trust - emotional opening up - partner's emotional surrender - emotional closeness in sex - sex is contributing to the emotional bond
Repertorial Visor	<ol style="list-style-type: none"> 5. <i>Sexual activity</i> <ul style="list-style-type: none"> - variety - frequency - intensity (passion) - duration - sexual experimentation

Table 1 – Factor pattern matrices of sexual satisfaction items in Croatian (CRO) and US samples

Items	Student samples				Community samples			
	CRO (n=544)		US (n=356)		CRO (n=729)		US (n=212)	
	A ^a	B ^a	A	B	A	B	A	B
I1	.44			-.42	.48			.57
I2	.82		.73		.81			.86
I3	.88		.82		.76			.76
I4	.86		.83		.86			.82
I5	.81		.84		.83			.90
I9	.49		.66		.62			.65
I10		.47	.42	-.41		-.54		.44
I11		.48		-.54		-.65		.60
I12		.91		-.88		-.96		.94
I13		.72		-.64		-.62		.55
I14		.84		-.89		-.84		.68
I15		.74		-.65		-.82		.66
I16		.94		-.96		-.96		.95
I17		.72		-.80		-.72		.85
I18		.96		-.82		-.95		.88
I19		.53		-.50	.45	-.45		.49
I20		.56				-.40		
I22		.51		-.45		-.52		.74
I23		.47				-.50		.67
I24	.72		.83		.77		.77	
I25	.43		.55		.46		.43	
I26		.45	.49		.56		.46	.42
I27	.61		.57		.78		.74	
I28	.59		.64		.70		.71	
I29	.46		.53			-.42	.43	
I30		.59		-.67		-.69		.72
I31		.60		-.58		-.50		.62
I32	.80		.72		.66		.62	
I33	.41	.40	.45		.58		.46	
I34	.60		.62		.70		.59	
<i>r</i>		.57		-.61		-.56		.52

^aValues < .40 were suppressed; A= Ego-centered factor; B = Partner & activity-centered factor; r = correlation between the components

Table 2 – Mean values and reliability of the New Sexual Satisfaction Scale in Croatian (CRO) and the US samples

	Subscale A (k = 10)			Subscale B (k = 10)			Full scale (k = 20)			Short version (k = 12)		
	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>
CRO student sample												
all (n = 544)	39.97	7.61	.91	40.17	7.67	.92	80.21	13.97	.94	47.99	8.45	.91
women (n = 359)	39.28	7.87	.91	41.16	7.28	.91	80.57	13.88	.94	48.17	8.41	.90
men (n = 185)	41.32	6.90	.92	38.17	8.05	.93	79.48	14.16	.95	47.64	8.54	.93
CRO community sample												
all (n = 729)	39.97	7.61	.92	40.17	7.67	.94	78.90	14.40	.95	46.98	8.53	.91
women (n = 471)	39.28	7.87	.92	41.16	7.28	.94	79.14	14.98	.95	46.91	8.89	.92
men (n = 258)	41.32	6.90	.91	38.17	8.05	.93	78.45	13.28	.94	47.09	7.84	.91
CRO non-heterosexual sample												
all (n = 360)	38.57	8.64	.92	36.85	9.41	.94	75.34	16.93	.95	45.09	10.09	.92
women (n = 102)	39.75	8.63	.92	39.47	8.93	.94	79.29	16.20	.95	47.43	9.76	.92
men (n = 258)	38.08	8.61	.92	35.77	9.41	.93	73.67	16.99	.95	44.13	10.09	.92
US student sample												
all (n = 356)	37.38	8.14	.91	36.59	8.44	.92	74.07	15.36	.95	44.52	9.17	.91
women (n = 246)	37.46	8.03	.91	37.67	7.87	.91	75.30	14.65	.94	45.20	8.80	.90
men (n = 110)	37.15	8.49	.93	33.78	9.23	.94	70.25	16.79	.96	42.70	9.93	.92
US community sample												
all (n = 212)	37.41	7.85	.93	35.79	9.05	.92	72.96	15.22	.94	43.91	9.14	.90
women (n = 138)	37.25	8.23	.93	37.67	7.95	.90	74.52	14.73	.94	44.76	8.92	.90
men (n = 74)	37.69	7.19	.92	32.32	9.93	.94	70.15	15.78	.95	42.38	9.40	.91

Table 3 – One-month stability of the New Sexual Satisfaction Scale in a sample of Croatian students

	Women (<i>n</i> =116)			Men (<i>n</i> =103)			All (<i>n</i> =219)		
	<i>M</i> ₁ ^a (<i>SD</i>)	<i>M</i> ₂ ^b (<i>SD</i>)	<i>r</i>	<i>M</i> ₁ ^a (<i>SD</i>)	<i>M</i> ₂ ^b (<i>SD</i>)	<i>r</i>	<i>M</i> ₁ ^a (<i>SD</i>)	<i>M</i> ₂ ^b (<i>SD</i>)	<i>r</i>
Subscale A	38.99 (6.60)	39.87 (7.03)	.84*	40.26 (8.23)	41.40 (7.33)	.72*	39.59 (7.43)	40.59 (7.20)	.78*
Subscale B	41.72 (6.15)	41.71 (7.18)	.73*	38.10 (9.38)	37.98 (8.23)	.73*	40.02 (8.02)	39.95 (8.20)	.74*
Full scale	80.66 (11.84)	81.71 (13.43)	.81*	78.34 (16.70)	79.33 (15.22)	.74*	79.57 (14.35)	80.60 (14.31)	.76*
Short version	48.42 (7.22)	48.78 (8.23)	.77*	47.23 (10.20)	47.73 (9.12)	.72*	47.86 (8.76)	48.29 (8.65)	.73*

^a*M*₁ = 1st measurement mean value, ^b*M*₂ = 2nd measurement mean value; **p* <.001

Table 4 – Correlations between the New Sexual Satisfaction Scale and related measures in Croatian (CRO) and the US student samples

	Subscale A (k = 10)		Subscale B (k = 10)		Full scale (k = 20)		Short version (k = 12)	
	CRO	US	CRO	US	CRO	US	CRO	US
	<i>r</i> (<i>n</i>)							
Life satisfaction	.28*** (531)	.21*** (290)	.24*** (527)	.25*** (290)	.28*** (523)	.25*** (284)	.29*** (529)	.24*** (291)
Sexual boredom	-.49*** (522)	-.37*** (285)	-.44*** (519)	-.35*** (285)	-.51*** (515)	-.39*** (279)	-.52*** (520)	-.39*** (286)
Intimacy	.41*** (525)	.43*** (288)	.41*** (521)	.43*** (288)	.44*** (517)	.47*** (282)	.44*** (523)	.46*** (289)
Partner communication about sex	.19*** (531)	.16** (290)	.18*** (537)	.15* (290)	.20*** (523)	.18** (284)	.20*** (529)	.18** (291)
Currently in a relationship	.25*** (531)	.21*** (290)	.32*** (527)	.16** (290)	.30*** (523)	.20** (284)	.29*** (529)	.18** (291)
Satisfaction with one's sex life	.63*** (531)	.44*** (271)	.61*** (527)	.54*** (271)	.67*** (523)	.53*** (265)	.67*** (529)	.52*** (272)

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

Table 5 – Differences in sexual satisfaction between Croatian students with and without self-reported sexual difficulties, and between adults in a clinical and non-clinical sample

	Subscale A	Subscale B	Full scale	Short version
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Students with self-reported sexual difficulties (<i>n</i> =265)	37,28 (7.90)	38,72 (8,07)	76,18 (14,52)	45,5 (8,81)
Students with no self-reported sexual difficulties (<i>n</i> =279)	42,48 (6,39)	41,56 (7,00)	84,01 (12,30)	50,30 (7,39)
<i>t</i>	-8,30*	-4,32*	-6,64*	-6,70*
<i>df</i>	492,56	506,67	(496,77)	(500,51)
Cohen's <i>d</i>	-0,72	-0,38	-0,58	-0,59
Clinical sample (<i>n</i> =54)	30.39 (8.87)	29.96 (8.24)	59.84 (12.95)	35.65 (8.12)
Community sample (<i>n</i> =729)	39.71 (7.34)	38.97 (8.62)	78.90 (14.40)	46.98 (8.53)
<i>t</i>	-7.33*	-7.74*	-8.64*	-8.74*
<i>df</i>	55.17	740	709	735
Cohen's <i>d</i>	-1.14	-1.07	-1.39	-1.36

**p* < .001

Appendix – The New Sexual Satisfaction Scale items

	Subscale A (Ego- focused)	Subscale B (Partner and activity- focused)	Short version
<i>Thinking about your sex life during the last six months. please rate your satisfaction with the following aspects:^a</i>			
I2 The intensity of my sexual arousal	X		
I3 The quality of my orgasms	X		X
I4 My “letting go” and surrender to sexual pleasure during sex	X		X
I5 My focus/concentration during sexual activity	X		
I9 The way I sexually react to my partner	X		X
I24 My body’s sexual functioning	X		X
I27 My emotional opening up in sex	X		
I28 My mood after sexual activity	X		X
I32 The frequency of my orgasms	X		
I33 The pleasure I provide to my partner	X		X
I10 The balance between what I give and receive in sex		X	X
I11 My partner’s emotional opening up during sex		X	X
I12 My partner’s initiation of sexual activity		X	
I13 My partner’s ability to orgasm		X	X
I14 My partner's surrender to sexual pleasure (“letting go”)		X	
I15 The way my partner takes care of my sexual needs		X	
I17 My partner’s sexual creativity		X	X
I18 My partner’s sexual availability		X	
I22 The variety of my sexual activities		X	X
I30 The frequency of my sexual activity		X	X

^a Responses are anchored on the following scale: 1 = not at all satisfied. 2 = a little satisfied. 3 = moderately satisfied. 4 = very satisfied. 5 = extremely satisfied