EXPLORING SEXUALLY EXPLICIT VIDEOS SOUGHT AMONG WOMEN IN THE CZECH REPUBLIC AND THE SLOVAK REPUBLIC: FINDINGS FROM AN ONLINE SURVEY USING A STRATIFIED RANDOM SAMPLE

LUCIE KREJČOVÁ[1,2], TIMOTHY J. WELLS[2], MICHAL CHOVANEC[3,4], PETR WEISS[2,4], KATEŘINA KLAPILOVÁ[1,2]

[1]Department of Psychology and Life Sciences, Faculty of Humanities, Charles University, Prague, Czech Republic
[2]Centre for Sexual Health and Inverventions, National Institute of Mental Health, Klecany, Czech Republic
[3]Department of Criminalistics and Forensic Science, Academy of Police Forces, Bratislava, Slovakia
[4]Department of Psychology, Faculty of Arts, Charles University, Prague, Czech Republic

ABSTRACT

So far, only a limited number of representative studies have been conducted on exposure to sexually explicit media in women. Existing research tends to focus on men, who form the majority of users of sexually explicit materials. This research aimed at identification of categories of sexually explicit videos sought by adult women in the Czech and Slovak Republics and examination of variables associated with overall frequency of use of sexually explicit media. A stratified sample of Czech (N=400) and Slovak (N=413) women who confirmed the use of sexually explicit materials and were aged between 18–76 completed an online questionnaire through online panels of respondents. Participants reported the overall frequency of sexually explicit materials sought and its related measures. Using linear regression, authors tested associations between the frequency of sexually explicit videos sought and sociodemographic data, variables related to sexual behaviour, and lifetime experience with sexually explicit videos. Results showed a high prevalence of seeking sexually explicit videos that depict normative heterosexual and female homosexual activities. No significant differences were found between the Czech and Slovak samples in searching for particular sexually explicit content. Authors found that younger age, higher frequency of masturbation, and higher sociosexual attitude score (measured by SOI-R) predict a higher frequency of searches for sexually explicit videos in both samples. This is the first empirical investigation of sexually explicit video content sought by women in the Czech and Slovak Republics. The findings suggest that there is a high prevalence of sexually explicit materials use in women in both countries (Czech Republic = 60.4% vs. Slovak Republic = 62%), but further investigation is necessary to assess the impact of sexually explicit materials exposure on women.

key words:
sexually explicit media,
female sexuality,
national survey,
Czech Republic,
Slovak Republic

INTRODUCTION

The use of sexually explicit materials (SEM; stating for media portraying images of exposed genitals and/or depictions of sexual behaviors that are intended to increase sexual arousal) is today a common feature of the sexual lives of people in the West-

ern world. Global evidence indicates that SEM use varies greatly across regions and cultures (e.g. Hald, 2006; Hald & Mulya, 2013; Janghorban et al., 2003; Lewin, 1997; Traeen et al., 2004; Wright et al., 2013). Few studies so far investigated the consumption of SEM specifically in post-communist countries.

The Czech Republic and the Slovak Republic have an interesting history with respect to SEM: under the Communist regime, such materials were prohibited and following the collapse of the regime, SEM consumption increased significantly (Diamond et al., 2011). Moreover, attitudes towards sexual behaviour and SEM in Czechia are nowadays considered liberal in comparison with the rest of the western world (Weiss & Zvěřina, 2012). Nonetheless, detailed information on the prevalence of SEM consumption in Czech and Slovak populations is lacking. To date, the majority of research focused on adolescents (e.g. Ševčíková & Daneback, 2014; Ševčíková et al., 2013). A detailed study of SEM consumption amongst adults in the Czechia and Slovakia has not been carried out yet.

Pornography use in women and its associations

Numerous studies found that males tend to consume more SEM than women do (Frish et al., 2019; Hald, 2006; Hald & Mulya, 2013; Koletić et al., 2021; Malki et al., 2021; Štulhofer et al., 2021), while studies focused on women reveal more differences across cultures. In Hong Kong, for instance, it was found that lifetime prevalence of pornography use by women is 73.8% (Janghorbani et al., 2003). In Europe, the percentage of lifetime viewing of SEM among women was relatively low (47.4% Norway, Koletić et al., 2021; 27 % Sweden, Malki et al., 2021; 67% Denmark, Frish et al., 2019; 44.2% Germany, Štulfoher et al., 2021) compared to the United States, where 87% of women reported lifetime pornography use (Herbenicks et al., 2020). However, such comparisons are problematic owing to methodological differences among studies (e.g. types of content, time intervals, and response options).

A number of studies tried to differentiate between various SEM categories consumed. Knowledge on this subject is usually derived from reports curated by independent websites and includes, for example, the frequency of key search terms. Women most commonly view nonviolent, mainstream content including vaginal intercourse and oral sex (Hald, 2006; Paul, 2009; Sabina et al., 2008). Interestingly, SEM that includes group sex, lesbian sex, and various paraphilic content (e.g. incest theme; bondage/discipline, dominance/submission, and sadism/masochism activities - BDSM) is also popular in women (e.g. Hald, 2006; Lawrence & Harrold, 1988; Nelson et al., 2010).

In existing research, descriptive analyses of sexually explicit content have been complemented by exploration of the sociodemographic and personality variables that predict the consumption of such materials (e.g. Hald, 2006; Lawrence & Harrold, 1988; Nelson et al., 2010). Although studies focused solely on women are scarce, gender differences in the frequency of SEM consumption have been linked to levels of social acceptability and negative attitudes (Häggström-Nordin et al., 2009) and moreover, there are certain age-related differences amongst women that consume SEM (McKee, 2007; Træen et al., 2006; Weiss & Zvěřina, 2014). For example, a Czech national survey of a representative sample (Weiss & Zvěřina, 2014) found the highest rate of SEM use amongst adolescent girls aged 15–17 (13%) and perimenopausal women aged 45–59 (11.7%). Furthermore, there is reason to believe that SEM consumption amongst women may be related to a higher level of education (Træen et al., 2006; Wright et al., 2013; but see Hald, 2006) and a low degree of religiousness (Martyniuk et al., 2015; Short et al., 2014).

Research shows positive associations between SEM use and sexual risk behaviours in both males and females (for review, see Harkness et al., 2015). However, only a limited number of studies deal with SEM consumption and the link to their sexual behaviour in adult women. Of those, the frequency of SEM use was associated with the frequency of masturbation (e.g. Hald, 2006) and vaginal sex (e.g. Weinberg et al., 2010). Moreover, there was also a positive association between SEM use and a greater number of sexual partners (e.g. Maas & Dewey, 2018; Træen et al., 2006).

Previous research aimed at identifying factors related to SEM consumption had several limitations. First, it lacks a generally accepted operational definition of pornography. Definitions usually contain some reference to the medium, e.g. visual material, images or audio-visual material, and the intention of use, usually sexual arousal (for further details, see review by Kohut et al., 2020). Second, the frequency of SEM use is measured by using a variety of time intervals so that response options provided to participants range from lifetime use of SEM to various specific periods of time (e.g. past year, past month). Response categories within a particular interval of time vary as well: from being based on simple yes/no options, through frequency scales (e.g. indicating monthly, weekly, or daily use), to assessing the frequency of use on a Likert scale (e.g. ranging from never to very frequently). Third, researchers assess a variety of samples (e.g. children, adolescents, university students, adults) with various sampling methods (e.g. convenience sampling, nationally representative probability sampling, or stratified random sampling). This is a critical limitation for this field of research: results across studies are not properly comparable, which hampers their practical implementation and generalisability.

THE AIMS OF THE PRESENT STUDY

The Czech and Slovak Republics are two neighbouring and seemingly similar countries. Although these countries have similar cultures and histories that have shaped their attitudes toward sexuality and pornography, Slovak culture is strongly influenced by traditional Catholic values (Podolinská et al., 2020). Consequently, Czech women may be more likely to have a liberal attitude toward pornography than Slovak women, and thus SEM use may differ between these two nations. The main aims of the present study thus were: Firstly, considering the lack of representative data on adults´ SEM use in the Czech and Slovak Republics, we wanted to describe the prevalence rates of SEM sought in a stratified random sample of Czech and Slovak women. Secondly, we wanted to explore associations between the frequency of SEM use and sociodemographic variables and various dimensions of sexual experience. In women who confirmed SEM online use, we tested predictors of the frequency of SEM searches such as age, education, religiosity, and various dimensions of sexual experience. Based on previous studies, we predict that lower age, higher monthly frequency of sexual activity, and earlier lifetime experience with sexually explicit videos would predict a higher frequency of SEM searching in women.

MATERIALS AND METHODS

Sample and Procedure

We worked with two independent samples, a sample of women from the Czech Republic and a sample from the Slovak Republic. The target group was women aged 18 years and older who have ever sought sexually explicit materials.

Slovak respondents were recruited by a sociodemographic research agency 2muse (Bratislava, Slovakia) through their online pool of respondents in February 2016, and

the same research agency recruited Czech respondents from a national online research pool of Czech respondents in October 2017. Both panels are run in compliance with the ethical codex of ICCP/ESOMAR (https://www.esomar.org/). A stratified random-based sampling technique was applied (the quotes were Czech/Slovak nationality, region in the given country, age category, and education). Quotas were established on the basis of the population census of the Slovak Statistical Office in 2011 (SSO, 2011) and the Czech Statistical Office in 2011 (CZSO, 2013). Responses were collected by means of a standardized online interview in the form of an online survey. This method was preferred with respect to the confidential nature of the survey to help preserve the respondents' privacy.

The invitation to the survey (without a description of the topic) was randomly e-mailed to 3,574 registered women from the Slovak Republic and 1,391 women from the Czech Republic from the above-mentioned survey panels. Women interested in participation (CZE = 1,287, response rate 92%; SVK = 1,215, response rate 34%) were presented with a question: *'Have you ever seen sexually explicit materials (erotic or pornographic)?'* Data were collected for SEM users only; if women declined SEM use, the questionnaire ended with thanks to the participants. SEM users were asked to log in to the agency's system (through which data was anonymised) to complete the online questionnaire. The landing page contained study information, including age restrictions (18+) and the aims of the study, which required an acknowledgment of consent to continue. The survey took approximately 40 minutes to complete. Individuals received points added to their pool account with the agency for participating, which could be accumulated and exchanged for future rewards.

Of the participants who responded to the survey, 60.4% (n =777) Czech women and 62% (n = 754) Slovak women indicated using SEM in their life. Data from 377 Czech women and 341 Slovak women were excluded because they did not complete the questionnaire or due to saturation of particular quotas (age category, level of education, and region) based on the last census in the respective countries. The final Czech sample was comprised of 400 women (*M* age = 45.8, SD = 15.95) with the highest level of education attained being elementary (20.6%), further (67.6%), and higher (11.8%) education. It included women living in cities (23% in municipalities with over 100,000 inhabitants), urban areas (40.2% in municipalities with 5,000––100,000 inhabitants), and rural areas (36.8% of women lived in places with less than 5,000 inhabitants). The final Slovak sample comprised 413 women (*M* age = 40 years, SD = 14.62), with the highest level of education attained being elementary (8%), further (71.2%), and higher (20.8%) education. It included women living in cities (12.1%), urban areas (48.7%), and rural areas (39.2%). For an overview of sociodemographic information, see Table 1. The project was approved by the Ethics Committee of National Institute of Mental Health, Czech Republic (n. 41/15).

Measures

The questionnaire included questions about sociodemographic information, sexual behaviour, and searches for SEM specifically in a video format.

Sociodemographic characteristics

Sociodemographic indicators included information about age (in years), the size of place of current residence, highest completed level of education, religiosity, and relationship status. Sexual orientation was assessed by the following statement: *'I consider my sexual orientation as'… (indicate on following scale)* (7 point scale: *1 = exclusively heterosexual, 2 = predominantly heterosexual, 3 = rather hetero-*
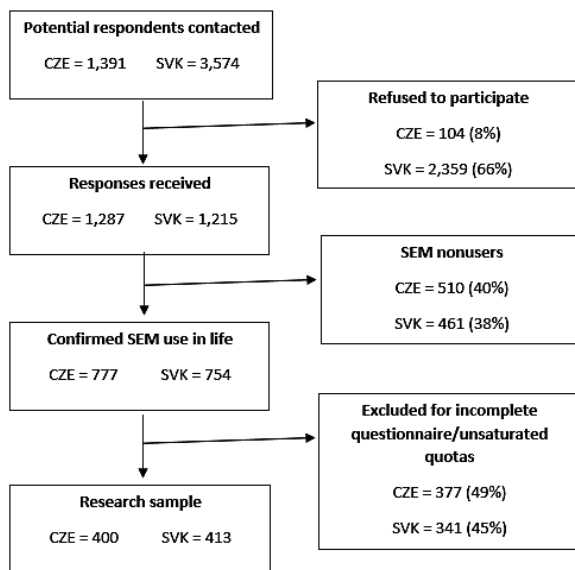
```
┌─────────────────────────────┐
│  Potential respondents contacted │
│   CZE = 1,391    SVK = 3,574     │
└─────────────────────────────┘
              │         ┌─────────────────────┐
              │────────▶│  Refused to participate │
              │         │   CZE = 104 (8%)        │
              ▼         │   SVK = 2,359 (66%)     │
┌─────────────────────────────┐└─────────────────────┘
│      Responses received      │
│   CZE = 1,287    SVK = 1,215     │
└─────────────────────────────┘
              │         ┌─────────────────────┐
              │────────▶│    SEM nonusers         │
              │         │   CZE = 510 (40%)       │
              ▼         │   SVK = 461 (38%)       │
┌─────────────────────────────┐└─────────────────────┘
│   Confirmed SEM use in life  │
│   CZE = 777     SVK = 754        │
└─────────────────────────────┘
              │         ┌──────────────────────────┐
              │────────▶│  Excluded for incomplete     │
              │         │  questionnaire/unsaturated   │
              │         │  quotas                      │
              ▼         │   CZE = 377 (49%)            │
┌─────────────────────────────┐│   SVK = 341 (45%)            │
│       Research sample        │└──────────────────────────┘
│   CZE = 400      SVK = 413       │
└─────────────────────────────┘
```

Figure 1 Selection of the study samples

sexual, 4 = bisexual, 5 = rather homosexual, 6 = predominantly homosexual, 7 = = exclusively homosexual).

Sexual behaviour

Participants provided information regarding (1) the frequency of vaginal intercourse in past 30 days [the number of occasions], (2) frequency of masturbation in past 30 days [the number of occasions], (3) age of first masturbation and penetrative intercourse, (4) sociosexual orientation measured by the revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008). Sociosexuality refers to the individual willingness to engage in uncommitted sexual relationships (Kinsey et al., 1948), which is correlated with more risky sexual behaviour (e.g. Lopez et al., 2021). The SOI-R contains nine items, with responses measured on 5-point scales, divided into three domains: Behaviour, e.g. '*With how many different partners have you had sex (sexual intercourse) with in the past year?*'; Attitude, e.g. '*I can imagine myself being comfortable and enjoying "casual" sex with different partners*'; Desire, e.g. '*How often do you have fantasies about having sex with someone you are not in a committed romantic relationship with?*' A total sociosexual orientation score can be obtained by summing all nine items. Higher scores indicate an unrestricted sociosexuality. Each of the three facets can have an indirect effect on the other two and on global sociosexuality. The available Czech data showed that the Cronbach's alphas were satisfactory: 0.848, 0.850, 0.753, 0.812 for the SOI-R Total, Behavior, Attitudes, and Desires, respectively (for more details see Bártová et al., 2020).

Measures related to sexually explicit media

Questions related to participants' own experience with SEM related to (1) the age of first exposure to videos, (2) frequency of video use at the time of first masturbation (5-point scale: *1 = Not at all, 5 = Always/* separate option '*I do not masturbate*').

The frequency of actively seeking SEM was determined using the question: '*How often have you searched for sexually explicit videos (erotic or pornographic)*?' (9-point scale, *1 = Less than once a year, 9 = More than once a day)*. Participants were then asked about specific search terms relating to 16 categories of sexually explicit content [in the past 6 months]: '*What contents of sexually explicit videos have you searched for in the last 6 months*"?' (0 = *No*, 1 = *Yes*). Categories of sexually explicit videos and their definitions corresponded to categories based on Hald and Štulhofer's study (2015) and a list of the most viewed porn categories in the Czech and Slovak Republics provided by a popular commercial website (PornHub.com).

Statistical Analysis

In both samples, we explored sociodemographic information, sociosexual orientation, and searches for sexually explicit videos. Data were tested for normality and homogeneity of variance. Country differences for sociodemographic information and sexual behaviour were analyzed by the Mann-Whitney U test (for ordinal and interval data) and Chi-square test (for nominal data). Specifically, the frequency of SEM sought was analyzed by the Mann-Whitney U test. Chi-square tests for independent samples were used to determine any differences between Czech and Slovak women in the specific content of SEM categories consumed. Linear regression (enter method) was used to investigate the predictive relationship between the frequency of sexually explicit video searches, sociodemographic information, and sociosexual orientation. Regression analyses were performed separately on data from the Czech and the Slovak sample due to the two-year gap between Czech and Slovak data collection and the different drop-outs in each sample, which might bias the results. Null responses were assumed to be missing at random (< 1%); listwise exclusion was applied to both regression models. P values < .05 were considered statistically significant, however, all tests were conducted using Bonferroni-adjusted alpha levels of .0016 per test (.05/31). Significant between-group differences were explored and qualified by calculating effect sizes using eta-squared (cut-offs were $\eta^2 \sim 0.1$ for small, and $\eta^2 \sim 0.6$ for medium effect size) and Cramér's *V* coefficient (the actual thresholds for small, medium and large depend on the value of df* (Cohen, 1988). All analyses were conducted with IBM SPSS Statistics version 23 (SPSS Inc, Chicago, IL, USA).

RESULTS

Sociodemographic factors

There were significant differences between Czech and Slovak women in several sociodemographic and sociosexual orientation subscales (see Table 1). On average, the sample of Slovak women was nearly five years younger than the sample of Czech women. Approximately one-third of Czech women resided in cities with over 100,000 inhabitants, while most Slovak women lived in smaller towns. Slovak women were also found to have a higher level of education and greater religiosity than a comparable sample of Czech women. There was no significant difference between the two samples of women in relation to sexual orientation, being in a relationship, age at first exposure to pornography, mean frequency of penetrative intercourse [in the past 30 days], or total score on the sociosexual inventory scale. Slovak women, on average experienced their first masturbation at a younger age and masturbated more often in the past 30 days than Czech women. On the other hand, Czech women experienced their first vaginal intercourse a little bit sooner. The magnitude of these differences was small to moderate (η^2 range: 0.001 - 0.047, Cramer's *V* range: 0.05 – 0.47, see Table 1).

Table 1 Characteristics of sociodemographic and sexual behaviours in the Czech and Slovak sample

Variable	Czech women (N=400)	Slovak women (N=413)	Mean Differences (M-W /χ2 test)	Effect size
Age (in years)[a]	45.9 (16)	40 (14.6)	Z = -5.303*	η^2 = .035
Size of place of residence (%)			Z = -1.649	η^2 =.003
> 100,000	23.0	12.1		
20,000–99,999	22.0	28.5		
5,000 – 19,999	18.2	20.1		
1,000 – 4,999	18.5	23.7		
< 1,000	18.3	15.5		
Education (%)			Z = -6.464*	η^2 = .047
elementary	20.6	7.9		
vocational	28.0	20.8		
secondary	35.5	42.2		
post-secondary	4.1	8.2		
Bc.	2.8	3.4		
MS.	8.0	17.2		
Higher	1.0	0.2		
Relationship (%)			χ^2 = 5.854, df = 1	V = .085
Yes	73.5	80.6		
Religion (%)			χ^2 = 178.909*, df = 1	V = .469
Yes	36.5	82.6		
Sexual orientation (%)			χ^2 = 1.645, df = 2	V = .045
heterosexual	94.5	95.2		
bisexual	3.5	2.6		
homosexual	2.0	2.2		
Frequency of SEM sought (median)	3	3	Z = -.714	η^2 = .001
Age at first vaginal intercourse (in years)[a]	17.2 (3.49)	17.7 (4.41)	Z = -3.816*	η^2 = .018
Age at first masturbation (in years)[a b]	15.1 (9.2)	13.1 (7.9)	Z = -3.068*	η^2 = .012
Age at first exposure to pornography	21.8 (10.1)	20.0 (7.6)	Z = -1.485	η^2 = .003
Frequency of vaginal intercourse in the past 30 days (number)[a]	8.3 (11.4)	9.7 (11.4)	Z = -2.303	η^2 = .006
Frequency of masturbation in the past 30 days (number)[a c]	6.2 (11)	6.6 (9)	Z = 3.595*	η^2 = .018
SOI-R (Total score) [a]	21.0 (6.3)	19.9 (4.8)	Z = -2.606	η^2 = .008

Note. Missing values excluded; [a] Mean value (SD); [b] n = 385; [c] n = 307; * Significance at the 0.05 significance level after Bonferroni correction for 31 simultaneous comparisons

SEM searches: frequency and prevalence

There were no significant differences in the frequency of searches for sexually explicit videos between Czech (Mdn = 3) and Slovak women (Mdn = 3), Z = -.714, p =. 48, η^2 = .001. Descriptive statistics are shown in the Figure 2.
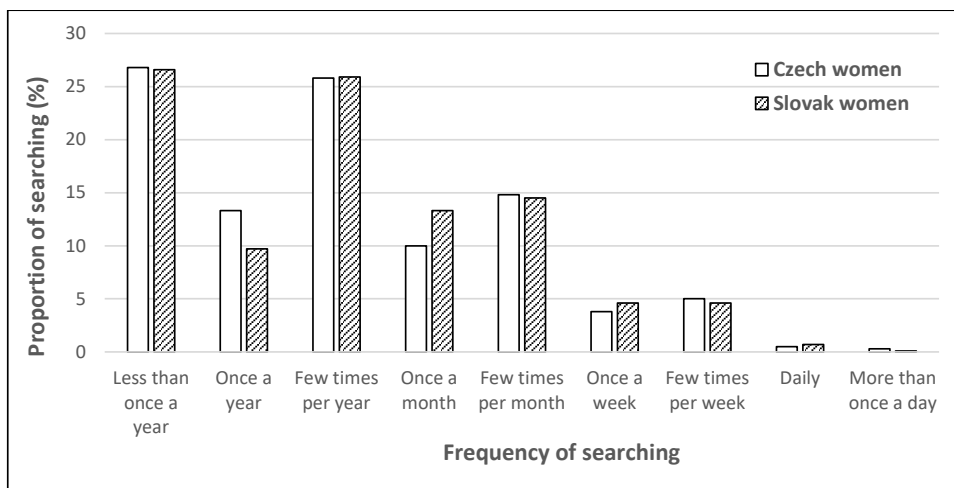

Figure 2 The frequency of SEM sought by Czech and Slovak women

The prevalence of sexually explicit video categories sought by Czech and Slovak women is shown in Table 2. No significant differences were found between samples in searching for particular sexually explicit content. In both samples, content depicting mainstream sexual activities (usual heterosexual activities: CZE = 47.8% vs. SVK = 43.6%; sexual foreplay: 38.3% vs. 38.7%), group sex (38.3% vs. 33.7%), and female homosexual activity (33.1% vs. 29.3%) were most prevalent. There was also a relatively high prevalence of BDSM (18.8% vs. 17.1%), rape (6.3% vs. 5.3%), and incestuous content (2.8% vs. 2.9%) sought.

Predictors of SEM searches

Multiple linear regression analysis was performed on each sample separately (Table 3) to determine variables associated with the frequency of sexually explicit videos sought. Sociodemographic data (age, size of place of residence, level of education, religion, and relationship status), variables related to sexual behaviour (frequency of masturbation and penetrative intercourse [in past 30 days], SOI-R score), and lifetime experience with sexually explicit videos (age of first exposure and age of first time masturbating with the aid of sexually explicit videos) were entered into the model as predictors. The dependent variable was the overall frequency of sexually explicit videos sought.

The model related to the frequency of seeking sexually explicit videos, as reported by Czech women, was found to be a significant fit ($F_{(10, 389)}$ = 16.07, p < .001) with predictors explaining 27.4% of the variance. Age was found to be a significant negative predictor in the sense that younger women searched for sexually explicit videos more frequently (β = -.04, 95% CI: [-.05, -.02], p < .001). Sociosexual orientation scores (β = .09, 95% CI: [.06, .11], p < .001) and frequency of masturbation (β = .03, 95% CI: [.01, .04], p < .01) both positively predicted the frequency of searching for sexually

Table 2 The prevalence of SEM categories searched by Czech and Slovak women in the past six months

Contents of SEM	Czech women		Slovak women			
	%*	RANK	%*	RANK	X^2	Cramer's V
Usual heterosexual activities	47.8	1	43.6	1	1.42	.04
Sexual Foreplay, Seduction	38.3	2	38.7	2	.021	.01
Group sex	38.3	3	33.7	3	1.86	.05
Female kissing and touching	16.8	4	14.3	5	.94	.03
Homosexual sex (female)	16.3	5	15.0	4	.24	.02
BDSM – dominant men	11.0	6	9.0	6	.94	.03
BDSM – dominant women	7.8	7	6.1	7	.91	.03
Naked people showing genitals	7.0	8	6.1	8	.30	.02
Homosexual sex (male)	7.0	9	4.1	10	3.23	.06
Rape theme	6.3	10	5.3	9	.32	.02
Incest theme	2.8	11	2.9	11	.02	.01
Naked people without sexual activity	2.3	12	1.9	12	.10	.01
Fetish	2.0	13	1.0	14	1.49	.04
Sexual interaction with animal	1.8	14	1.9	13	.04	.01
Sex involving urine and faeces	1.8	15	1.0	15	.93	.03
Sexual activities with children	0.3	16	0.2	16	.00	.00

Note. Missing values excluded; *Binary value; X^2 value for Chi-square test

explicit videos in the sense that higher SOI-R scores, and more frequent masturbation predicted more frequent searches of sexually explicit videos.

Modelling of the frequency of searching for sexually explicit videos, as reported by Slovak women, also revealed a significant fit ($F_{(10, 265)}$ = 10.05, p < .001), explaining 24.8% of the total variance. The pattern was identical to the Czech sample in that age was a significant negative predictor, indicating that younger Slovak women searched for sexually explicit videos more frequently (β = -.04, 95% CI: [-.05, -.02], p < .001). More frequent searching for sexually explicit videos was also associated with higher SOI-R scores (β = .1, 95% CI: [.06, .14], p < .001) and more frequent masturbation (β = .06, 95% CI: [.04, .08], p < .001).

DISCUSSION

The current study investigated the prevalence of searches for SEM in the format of videos in stratified random samples of Czech and Slovak women. Although we found differences in the demographic profiles of the two samples, there were no significant differences between Czech and Slovak women in the categories of SEM sought. Mainstream heterosexual behaviour and heterosexual foreplay were the most frequently searched categories. Nonetheless, a small percentage of SEM sought themes

Table 3 Results for the linear regression model predicting the frequency of searching for SEM in Czech and Slovak women

Variable	Czech women			Slovak women		
	β	95% CI	p	β	95% CI	p
Age (years)	-.035	(-.048/-.022)	< .001*	-.035	(-.052/-.018)	< .001*
Size of place of residence (scale)	-.029	(-.137/.079)	.595	-.015	(-.166/.135)	.841
Education (scale)	-.013	(-.120/.095)	.817	.051	(-.076/.179)	.429
Religion [b]	.014	(-.311/.340)	.931	-.016	(-.513/.481)	.950
Relationship [b]	-.194	(-.566/.177)	-.305	-.031	(-.528/.466)	.902
Frequency of vaginal inter-course in the past 30 days (number)	-.009	(-.024/.007)	.296	-.007	(-.025/.011)	.456
Frequency of masturbation in the past 30 days (number)	.025	(.009/.041)	.002*	.061	(.038/.084)	< .001*
SOI-R (scale)	.087	(.061/.114)	< .001*	.099	(.058/.139)	< .001*
Age at first contact with pornography (years)	-.002	(-.022/.017)	.805	.030	(-.001/.060)	.061
Use of pornography at the time of first masturbations [b]	-.045	(-.254/.164)	.670	-.095	(-.506/.316)	.650

Note. Missing values excluded listwise. [a] 95% confidence interval for B; [b] binary variable (0 = no, 1 = yes); dependent variable: Frequency of SEM sought (1 = less than once a year, 2 = once a year, 3 = a few times a year, 4 = once a month, 5 = a few times per month, 6 = once a week, 7 = a few times per week, 8 = daily, 9 = more than once per day).
* Significance at the 0.05 significance level after Bonferroni correction for 31 simultaneous comparisons

such as rape and presentations of incest reported. Further similarities between the two samples were revealed by separate regression analyses used to predict the overall frequency of SEM searches. It turned out that while age is negatively associated with searching for SEM, masturbation and sociosexual orientation positively predict the frequency of searching for SEM. The samples of SEM users in each case reliably reflect differences in the composition of Czech and Slovak populations (Czech statistical office, 2014; Statistical office of the Slovak Republic, 2011). Reported lifetime prevalence of SEM video viewing was 60.4% in the Czech Republic and 62% in the Slovak Republic, which is within the range reported by previous studies in different countries (27-80%; Frish et al., 2019; Hald, 2006; Janghorbani et al., 2003; Malki et al., 2021; Štulfoher et al., 2021). The broad range of lifetime prevalence reported by previous studies could be due to different social and cultural environments. Higher prevalence of SEM consumption is typical of countries with less conservative sexual attitudes, fewer restrictions, and more positive public opinions towards SEM (Linz & Malamuth, 1993). A previous survey in the Czech Republic reported a lower prevalence of pornography consumption (see Weiss & Zvěřina, 2014), but it probably included a greater proportion of elderly individuals who grew up and lived during a time where all forms of pornography were strictly prohibited. Czech surveys have repeatedly shown that attitudes toward pornography have become increasingly liberal (e.g. Weiss & Zvěřina, 2012). For the Slovak Republic, no similar data is available.

Our finding of no difference in the prevalence of sexually explicit video searches between the two samples is perhaps unsurprising given that the Czech and Slovak Republics share similar historical backgrounds. There is, however, a marked difference in religiosity between the two countries: Slovak culture is strongly influenced by Christian values. Almost 62% of Slovaks consider themselves Roman Catholic (Statistical office of the Slovak Republic, 2011), compared to just 10.8% of Czech citizens (Czech statistical office, 2014). A relationship between religious belief and pornography consumption has been previously reported (e.g. Ahrold et al., 2011; Beckwith & Morrow, 2005) but although the present study included sociodemographic factors in modelling the predictors of SEM searches, it found no relationship with religiosity in either sample.

The type of SEM content sought was consistent between samples: most frequently sought is material depicting heterosexual displays (foreplay, couple sex, oral sex) and homosexual activities (female sexual intercourse, female kissing, and touching). Several studies found that both heterosexual and homosexual women were more likely than men to fantasize about sexual activities with same-sex partners (Binter et al., 2012; Hsu et al., 1994). These findings are often explained by greater sexual fluidity in women (Diamond, 2007).

We also found that a proportion of participants sought content depicting BDSM and rape themes. The prevalence of unusual or paraphilic sexual interests within the two samples is congruent with previous literature. Women's sexual fantasies often contain elements of submission (e.g. Hawley & Hensley, 2009) or domination (e.g. Joyal et al., 2015). For instance, the study by Joyal and Carpentier (2017) found that 32.9% of Canadian women show interest in BDSM practices. A national study of sexual behaviour in the Czech Republic found that 11% of women had some experience of BDSM and 23% expressed interest in trying it (Weiss & Zvěřina, 2014). Furthermore, in women, the prevalence of sexual fantasies about rape themes is purported to range between 31– 67% (Critelli & Bivona, 2008; Joyal et al., 2015). It should be noted that 'rape fantasies' are not associated with being a vulnerable sexual object but rather with being an attractive woman who wants to be coerced into having sex (Bivona & Critelli, 2009).

Results from the Czech and Slovak samples consistently showed that younger age, higher frequency of masturbation, and higher SOI-R scores predicted a higher frequency of SEM searches. Such relationship between age and higher frequency of SEM use has been reported previously (McKee, 2007; Wright et al., 2013). Peak use of SEM in adolescence can be explained by a higher level of sexual curiosity or reproductive hormones (Udry et al., 1986). Moreover, while SEM can serve as a form of excitement and entertainment (Sabina et al., 2008), it is also recognised as being a source of sexual information for adolescents (Li & Davey, 1996; Löfgren-Mårtenson & Månsson, 2009).

The relationship between the frequency of masturbation and SEM use could be cyclical. Women who masturbate more often may seek stimulation through SEM, and women who consume more SEM are likely to masturbate more frequently (see Leitenberg & Henning, 1995). It is likely that masturbation frequency and SEM use are related to sexual attitudes. Total scores on the SOI-R scale included questions relating to sexual behaviour and desire, which is why higher scores could be viewed as reflecting a higher general level of sexual drive. However, first experiences of sexual reward can be a critical point for developing future sexual preferences (see Pfaus et al., 2012). SEM use can develop through formative experiences of masturbating with SEM. Women with a higher tendency to explore sexual diversity may thus seek SEM and masturbate more often at an earlier age.

Limitations

We are aware of several methodological shortcomings of our study. First of all, the prevalence rate is a direct result of the methodology. The main methodological concern is the representativeness of our internet-based samples and generalization of results based on that samples to the population as a whole. Generalizability of our results is furthermore limited to women who consume sexually explicit materials and have Internet access. Additionally, our study is restricted to women who were willing to participate, and the results may thus be biased by self-selection. For example, the lower response rate evident in the Slovak sample might be due to their fear of lower anonymity of participants, who had to provide their personal information to the agency before completing the sex-related questionnaire and may have been therefore less willing to answer sensitive questions about their sex life. On the other hand, several other studies on sexual behaviour had a similar response rate (e.g. Koletić et al., 2021; Malki et al., 2021; Štulhofer et al., 2021).

It should be noted that we did not measure other formats of SEM, such as images, texts, or audio materials. Female SEM users are substantially more likely than male users to read erotic texts (e.g. Kohut et al., 2017), whereas paraphilic themes (e.g. rape, sexual violence) are presented more often than in videos (e.g. Barron & Kimmel, 2000). Future studies should therefore include other SEM formats. The questionnaire did not include any detailed definition of sexually explicit videos, although recent evidence shows that self-definitions of SEM are probably socially constructed, and different individuals may understand the term differently (Willoughby & Busby, 2016). General data about the influence of SEM use should also be explored in their connection to various other factors. For instance, we did not explore attitudes toward sex, personality type, relationship quality, etc.

Moreover, the length of time (e.g. frequency of use in the past six months) may account for differences from similar studies that focused on different time intervals (over lifetime, in the past 12 months, etc.). This variation is another limitation in reporting how many people use SEM and how often. The two-year gap in data collection might also bias our results. For example, using smartphones, tablets, and other hand-held devices might impact how SEM is used.

CONCLUSION

The present study provides an important insight into the use of SEM by women in the Czech and Slovak Republics. Although both countries have experienced strict anti-pornography laws under the former Communist regime, our study found a high prevalence of SEM use by women. SEM is becoming an integral part of daily sexual life. Scholars as well as clinicians ought to be aware of factors related to SEM use in both men and women. Such information is crucial for development of sufficient sexual education about contemporary preferred pornography content. Moreover, these findings could provide public health providers with up-to-date information about women's pornography use and thus help develop adequate treatment strategies to increase the level of sexual well-being in women. In particular, more work needs to be done in light of the impact of SEM exposure at a younger age, emphasizing providing a more realistic representation of sexual relationships through education.

REFERENCES

Ahrold, T. K., Farmer, M., Trapnell, P. D., & Meston, C. M. (2011). The relationship among sexual attitudes, sexual fantasy, and religiosity. *Archives of Sexual Behavior*, *40*(3), 619-630. https://doi.org/10.1007/s10508-010-9621-4

Barron, M., & Kimmel, M. (2000). Sexual

violence in three pornographic media: Toward a sociological explanation. *Journal of Sex Research, 37*(2), 161-168. https://doi.org/10.1080/00224490009552033

Bártová, K., Štěrbová, Z., Varella, M. A. C., & Valentova, J. V. (2020). Femininity in men and masculinity in women is positively related to sociosexuality. *Personality and Individual Differences, 152*, 109575.

Beckwith, H. D., & Morrow, J. A. (2005). Sexual attitudes of college students: the impact of religiosity and spirituality. *College Student Journal, 39*(2), 357-366.

Binter, J., Leongoméz, J. D., Moyano, N., Valentova, J., Jouza, L., & Klapilova, K. (2012). Sex differences in the incidence of sexual fantasies focused on evolutionary relevant objects. *Anthropologie, 50*(1), 83-93.

Bivona, J., & Critelli, J. (2009). The nature of women's rape fantasies: An analysis of prevalence, frequency, and contents. *Journal of Sex Research, 46*(1), 33-45. https://doi.org/10.1080/00224490802624406

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Lawrence Erlbaum Associates.

Critelli, J. W., & Bivona. J. M. (2008). Women's erotic rape fantasies: An evaluation of theory and research. *Journal of Sex Research, 45*(1), 57-70. https://doi.org/10.1080/00224490701808191

Český statistický úřad (2013). *Databáze výsledků sčítání lidu, domů a bytů 2011: průřezové sčítání lidu, domů a bytů 2011 k 26. 3.2011.*

Český statistický úřad (2014). *Náboženská víra obyvatel.* https://www.czso.cz/csu/czso/nabozenska-vira-obyvatel-podle-vysledku-scitani-lidu-2011-61wegp46fl

Diamond, L. M. (2007). The evolution of plasticity in female-female desire. *Journal of Psychology and Human Sexuality, 18*(4), 245-274. https://doi.org/10.1300/J056v18n04_01

Diamond, M., Jozifkova, E., & Weiss, P. (2011). Pornography and sex crimes in the Czech Republic. *Archives of Sexual Behavior, 40*(5), 1037-1043. https://doi.org/10.1007/s10508-010-9696-y

Frisch, M., Moseholm, E., Andersson, M., Andresen, J. B., & Graugaard, C. (2017). Sex in Denmark. *Nøglefund fra Projekt SEXUS, 2018.* https://files.projektsexus.dk/2019-10-26_SEXUS-rapport_2017-2018.pdf

Harkness, E. L., Mullan, B. M., & Blaszczynski, A. (2015). Association between pornography use and sexual risk behaviors in adult consumers: A systematic review. *Cyberpsychology, Behavior and Social Networking, 18*(2), 59-71. https://doi.org/10.1089/cyber.2014.0343

Häggström-Nordin, E., Tydén, T., Hanson, U., & Larsson, M. (2009). Experiences of and attitudes towards pornography among a group of Swedish high school students. *The European Journal of Contraception & Reproductive Health Care, 14*(4), 277-284. https://doi.org/10.1080/13625180903028171

Hald, G. M. (2006). Gender differences in pornography consumption among young heterosexual Danish adults. *Archives of Sexual Behavior, 35*(5), 577-585. https://doi.org/10.1007/s10508-006-9064-0

Hald, G. M., & Mulya, T. W. (2013). Pornography consumption and non-marital sexual behaviour in a sample of young Indonesian university students. *Culture, Health & Sexuality, 15*(8), 981-996. https://doi.org/10.1080/13691058.2013.802013

Hald, G. M., & Štulhofer, A. (2015). What types of pornography do people use and do they cluster? Assessing types and categories of pornography consumption in a large-scale online sample. *The Journal of Sex Research, 53*(7), 849-859. https://doi.org/10.1080/00224499.2015.1065953

Hawley, P. H., & Hensley IV, W. A. (2009). Social dominance and forceful submission fantasies: Feminine pathology or power?. *Journal of Sex Research, 46*(6), 568-585. https://doi.org/10.1080/00224490902878985

Herbenick, D., Fu, T. C., Wright, P., Paul, B., Gradus, R., Bauer, J., & Jones, R. (2020). Diverse sexual behaviors and pornography use: Findings from a nationally representative probability survey of Americans aged 18 to 60 years. *The Journal of Sexual Medicine, 17*(4), 623-633.

Hsu, B., Kling, A., Kessler, C., Knapke, K., Diefenbach, P., & Elias, J. E. (1994). Gender differences in sexual fantasy and behavior in a college population: A ten-year replication. *Journal of Sex & Marital Therapy, 20*(2), 103-118. https://doi.org/10.1080/00926239408403421

Janghorbani, M., Lam, T. H., & The Youth Sexuality Study Task Force (2003). Sexual media use by young adults in Hong Kong: Prevalence and associated factors. *Archives of Sexual Behavior, 32*(6), 545-553. https://doi.org/10.1023/A:1026089511526

Joyal, C. C., & Carpentier, J. (2017). The prevalence of paraphilic interests and behaviors in the general population: A provincial survey. *The Journal of Sex Research, 54*(2), 161-171. https://doi.org/10.1080/00224499.2016.1139034

Joyal, C. C., Cossette, A., & Lapierre, V. (2015). What exactly is an unusual sexual fantasy? *Journal of Sexual Medicine, 12*, 328-340. https://doi.org/10.1111/jsm.12734

Kinsey, A., Pomeroy, W., & Martin, C. (1948).

Sexual behavior in the human male. Indiana University Press.

Kohut, T., Balzarini, R. N., Fisher, W. A., Grubbs, J. B., Campbell, L., & Prause, N. (2020). Surveying pornography use: A shaky science resting on poor measurement foundations. *The Journal of Sex Research, 57*(6), 722-742.

Kohut, T., Fisher, W. A., & Campbell, L. (2017). Perceived effects of pornography on the couple relationship: Initial findings of open-ended, participant-informed, "bottom-up" research. *Archives of Sexual Behavior, 46*(2), 585-602. https://doi.org/10.1007/s10508-016-0783-6

Koletić, G., Štulhofer, A., Hald, G. M., & Træen, B. (2021). Self-assessed effects of pornography use on personal sex life: Results from a large-scale study of Norwegian adults. *International Journal of Sexual Health, 33*(3), 342-356.

Lawrence, K., & Herold, E. (1988). Women's attitudes toward and experience with sexually explicit materials. *Journal of Sex Research, 24*, 161-169.

Leitenberg, H., & Henning, K. (1995). Sexual fantasy. *Psychological Bulletin, 117*, 469-496.

Lewin, B. (1997). Pornography: Attitudes and use. In B. Lewin (Ed.), Sex in Sweden: On the Swedish sexual life (pp. 252-263). The National Institute of Public Health.

Li, Q., & Davey, M. R. (1996). Pornography as a source of sex information for college students in fraternities and sororities. *Journal of Health Education, 27*(3), 165-169. https://doi.org/10.1080/10556699.1996.10603189

Linz, D., & Malamuth, N. (1993). *Pornography* (Vol. 5). Sage.

Löfgren-Mårtenson, L., & Månsson, S. (2010). Lust, love, and life: A qualitative study of swedish adolescents perceptions and experiences with pornography. *Journal of Sex Research, 47*(6), 568-579. https://doi.org/10.1080/00224490903151374

Lopez, S., Krems, J., Dunn, D., Warner, E., & Leffingwell, T. (2021). Short-term mating orientation as a predictor of alcohol use and risky sexual behavior. *Journal of American College Health, 71*(6), 1670-1675. https://doi.org/10.1080/07448481.2021.1947836

Martyniuk, U., Briken, P., Sehner, S., Richter-Appelt, H., & Dekker, A. (2015). Pornography use and sexual behavior among Polish and German university students. *Journal of Sex & Marital Therapy*, *42*(6), 494-514. https://doi.org/10.1080/0092623X.2015.1072119

McKee, A. (2007). The relationship between attitudes towards women, consumption of pornography, and other demographic variables in a survey of 1023 consumers of pornography.

International Journal of Sexual Health, 19(1), 31-45. doi: 10.1300/J514v19n01_05

Nelson, L. J., Padilla-Walker, L. M., & Carroll, J. S. (2010). "I believe it is wrong but I still do it": A comparison of religious young men who do versus do not use pornography. *Psychology of Religion and Spirituality, 2*(3), 136-147. https://doi.org/10.1037/a0019127

Malki, K., Rahm, C., Öberg, K. G., & Ueda, P. (2021). Frequency of pornography use and sexual health outcomes in Sweden: Analysis of a national probability survey. *The Journal of Sexual Medicine*, *18*(10), 1735-1751.

Morgan, E. M. (2011). Associations between young adults use of sexually explicit materials and their sexual preferences, behaviors, and satisfaction. *Journal of Sex Research, 48*(6), 520-530. https://doi.org/10.1080/00224499.2010.543960

Omori, K., Zhang, Y. B., Allen, M., Ota, H., & Imamura, M. (2011). Japanese college students' media exposure to sexually explicit materials, perceptions of women, and sexually permissive attitudes. *Journal of Intercultural Communication Research*, *40*(2), 93-110. https://doi.org/10.1080/17475759.2011.581031

Paul, B. (2009). Predicting internet pornography use and arousal: The role of individual difference variables. *Journal of Sex Research, 46*, 344-357. https://doi.org/10.1080/00224490902754152

Penke, L., & Asendorpf, J. B. (2008). Beyond global sociosexual orientations: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships. *Journal of Personality and Social Psychology, 95*(5), 1113-1135. https://doi.org/10.1037/0022-3514.95.5.1113

Peter, J., & Valkenburg, P. M. (2010). The use of sexually explicit internet material and its antecedents: A longitudinal comparison of adolescents and adults. *Archives of Sexual Behavior, 40*(5), 1015-1025. https://doi.org/10.1007/s10508-010-9644-x

Pfaus, J. G., Kippin, T. E., Coria-Avila, G. A., Gelez, H., Afonso, V. M., Ismail, N., & Parada, M. (2012). Who, what, where, when (and maybe even why)? How the experience of sexual reward connects sexual desire, preference, and performance. *Archives of Sexual Behavior,41*(1), 31-62. https://doi.org/10.1007/s10508-012-9935-5

Podolinská, T. Z., Tížik, M., & Majo, J. (2019). Religiosity in Slovakia: Structure, dynamics, and spatial diversification. *Central European Journal for Contemporary Religion, 3*(1), 1-33.

Romito, P., & Beltramini, L. (2011). Watching pornography: Gender differences, vio-

lence and victimization. *Violence Against Women, 17*(10), 1313-1326. https://doi.org/10.1177/1077801211424555

Sabina, C., Wolak, J., & Finkelhor, D. (2008). The nature and dynamics of Internet pornography exposure for youth. *Cyber Psychology and Behavior, 11*(6), 691-693. https://doi.org/10.1089/cpb.2007.0179

Shek, D. T., & Ma, C. M. (2012). Consumption of pornographic materials among early adolescents in Hong Kong: profiles and psychosocial correlates. *International Journal on Disability and Human Development, 11*(2), 143-150. https://doi.org/10.1515/ijd-hd-2012-0024

Short, M. B., Kasper, T. E., & Wetterneck, C. T. (2014). The relationship between religiosity and internet pornography use. *Journal of Religion and Health, 54*(2), 571-583. https://doi.org/10.1007/s10943-014-9849-8

Štatistický úrad Slovenskej republiky (2011). *Obyvateľstvo SR podľa náboženského vyznania.* https://slovak.statistics.sk/wps/wcm/connect/54eb0cba-ec99-4549-8a33c86eead59c1/Tab_14_Obyvatelstvo_SR_podla_nabozenskeho_vyznania_scitanie_2011_2001_1991.pdf?MOD=AJPERES&CVID=knLHnky&CVID=knLHnky

Štatistický úrad Slovenskej republiky (2011). *Sčítanie obyvateľov, domov a bytov 2011 o obyvateľoch, domácnostiach, bytoch a bývaní.* https://slovak.statistics.sk

Ševčíková, A., Šerek, J., Macháčková, H., & Šmahel, D. (2013). The extent matters: Exposure to sexual material among Czech adolescents. *Journal of Early Adolescence, 33*(8), 1048-1071. https://doi.org/10.1177/0272431613483004

Ševčíková, A., & Daneback, K. (2014). Online pornography use in adolescence: Age and gender differences. *European Journal of Developmental Psychology, 11*(6), 674-686. https://doi.org/10.1080/17405629.2014.926808

Štulhofer, A., Wiessner, C., Koletić, G., Pietras, L., & Briken, P. (2021). Religiosity, perceived effects of pornography use on personal sex life, and moral incongruence: Insights from the German Health and Sexuality Survey (GeSiD). *The Journal of Sex Research, 59*(6), 720-730. https://doi.org/10.1080/00224499.2021.19

Træen, B., Spitznogle, K., & Beverfjord, A. (2004). Attitudes and use of pornography in the Norwegian population 2002. *Journal of Sex Research, 41*(2), 193-200. https://doi.org/10.1080/00224490609552323

Træen, B., Nilsen, T. S., & Stigum, H. (2006). Use of pornography in traditional media and on the internet in Norway. *Journal of Sex Research, 43*(3), 245-254. https://doi.org/10.1080/00224490409552227

Udry, J. R., Talbert, L. M., & Morris, N. M. (1986). Biosocial foundations for adolescent female sexuality. *Demography, 23*(2), 217. https://doi.org/10.2307/2061617

Weinberg, M. S., Williams, C. J., Kleiner, S., & Irizarry, Y. (2010). Pornography, normalization, and empowerment. *Archives of Sexual Behavior, 39*(6), 1389-1401.

Weiss, P., & Zvěřina, J. (2012). Sexuální chování v ČR – Situace a trendy [Sexual behavior in CZ – The situation and trends]. Portál.

Weiss, P., & Zvěřina, J. (2014). Sexuální chování obyvatel v ČR V [Sexual behavior in CZ V]. Cegedim.

Willoughby, B. J., & Busby, D. M. (2016). In the eye of the beholder: Exploring variations in the perceptions of pornography. *The Journal of Sex Research, 53*(6), 678-688. https://doi.org/10.1080/00224499.2015.1013601

Wolak, J., Mitchell, K., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth internet users. *Pediatrics*, *119*(2), 247-257. https://doi.org/10.1542/peds.2006-1891

Wood, R. (2015). Sexual consumption within sexual labour: producing and consuming erotic texts and sexual commodities. *Porn Studies, 2*(2-3), 250-262. https://doi.org/10.1080/23268743.2015.1051308

Wright, P. J., Bae, S., & Funk, M. (2013). United States women and pornography through four decades: Exposure, attitudes, behaviors, individual differences. *Archives of Sexual Behavior, 42(*7), 1131-1144. https://doi.org/10.1007/s10508-013-0116-y

Wright, P. J., & Arroyo, A. (2013). Internet pornography and U.S. women's sexual behavior: Results from a national sample. *Mass Communication and Society, 16*(5), 617-638. https://doi.org/10.1080/15205436.2012.754045

Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: A national survey. *CyberPsychology & Behavior*, *8*(5), 473-486. https://doi.org/10.1089/cpb.2005.8.473