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Attitudes towards sexual coercion by Polish high school students: links with risky sexual scripts, pornography use, and religiosity

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ABSTRACT

The link between cognitive scripts for consensual sexual interactions and attitudes towards sexual coercion was studied in 524 Polish high school students. We proposed that risky sexual scripts, containing risk elements linked to sexual aggression, would be associated with attitudes condoning sexual coercion. Pornography use and religiosity were included as predictors of participants' risky sexual scripts and attitudes towards sexual coercion. Risky sexual scripts were linked to attitudes condoning sexual coercion. Pornography use was indirectly linked to attitudes condoning sexual coercion via risky sexual scripts. Religiosity showed a positive direct link with attitudes towards sexual coercion, but a negative indirect link through risky sexual scripts. The results are discussed regarding the significance of risky sexual scripts, pornography use, and religiosity in understanding attitudes towards sexual coercion as well as their implications for preventing sexually aggressive behaviour.

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A large body of literature reveals that sexual aggression is a serious problem among young people (Chan, Straus, Brownridge, Tiwari, & Leung, 2008; Hines, 2007; see Krahé, Tomaszewska, Kuyper, & Vanwesenbeeck, 2014, for a review of European studies). Although Krahé et al. (2014) identified only two studies in Poland that provided data on sexual aggression perpetration among young people, their findings suggest that this country is no exception. In a representative sample of 17- and 18-year-old Polish youth asked about six forced sexual activities (taking clothes off, touching, making someone masturbate, forced sexual intercourse, forced oral, or anal sex), 21.2% of male and 4.0% of female participants reported having committed at least one of these acts against a peer (Izdebski, 2012). In a study with university students, 41.6% of male and 39.0% of female respondents reported having engaged in so-called minor sexual coercion (e.g. insisting on sexual activity without the use of physical force), and 4.0% of male and 6.0% of female respondents reported severe acts of sexual aggression (hitting, holding down, or threatening to use force; Doroszewicz & Forbes, 2008). In a more recent study, 11.7% of male and 6.5% of female university students reported having committed at least one act of sexual aggression since the age of 15 (Tomaszewska & Krahé, in press).

Sexual coercion is defined as making other persons engage in sexual contact against their will. As is true for sexual attitudes and behaviours in general, sexual coercion is embedded in a network of attitudes and normative beliefs that make this form of behaviour appear acceptable. Goodchilds, Zellman, Johnson, and Giarrusso (1988) asked their 16–18 year-old participants under what

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circumstances they would accept of the use of force by a boy towards a girl to make her engage in sexual intercourse. In response to this general question, 72% of the sample stated that the use of force was not acceptable under any circumstances. After they were provided with a list of specific circumstances (e.g. “she’s had sexual intercourse with other guys” or “she lets him touch her above the waist”), the percentage of those who completely rejected the use of force as unacceptable was reduced to 34%, with a significant difference between males (24%) and females (44%). Although a study with college students by Cook (1995) found lower rates of approval of the use or threat of force, even after potential justifications were provided, 24% of participants showed some approval of sexual coercion under certain circumstances.

Several studies have shown that positive attitudes towards the use of verbal pressure (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001) or the threat or use of physical force (Sipsma, Isabel, Cerrato, & Everaerd, 2000) to coerce another person into sexual activity are associated with sexually aggressive behaviour. This research points to the significance of attitudes about the acceptability of sexual aggression in providing the normative basis for sexually aggressive behaviour and highlights the need to understand how attitudes condoning sexual aggression are formed.

Given the high rates of sexual aggression identified in the evidence from Poland available to date (Doroszewicz & Forbes, 2008; Izdebski, 2012; Tomaszewska & Krahé, in press), analysing attitudes towards sexual coercion is seen as a critical task to elucidate the attitudinal context of young people’s sexually coercive behaviour in this country. In the present research, we draw on the construct of *sexual scripts* to conceptualise the association between cognitive representations of sexual encounters and attitudes towards sexual coercion. Furthermore, we examine two pervasive cultural influences, pornography and religion, that are proposed to shape sexual scripts and thereby show indirect links with attitudes towards sexual coercion. In the present research, scripts for consensual sex are considered as “risky” to the extent that they contain established risk factors for sexual aggression, as discussed below.

Sexual scripts are conceptualised as cognitive representations of prototypical actions and features of sexual interactions (Metts & Spitzberg, 1996). Acquired in the course of socialisation, they are informed by cultural norms and socially shared gender roles (Eaton & Rose, 2012; Simon & Gagnon, 1986). In the field of aggression, Huesmann (1998) has proposed a theoretical account linking aggressive scripts to aggressive behaviour, explaining how the repeated activation of aggressive scripts contributes to the consolidation of aggressive behaviour. Aggressive scripts contain both descriptive elements and normative evaluations, defined as “cognitions about the appropriateness of aggressive behavior” (Huesmann, 1998, p. 91), which are essential for the activation of cognitive scripts and their translation into behaviour.

Applying this theorising to the understanding of sexual coercion, we argue that attitudes condoning sexual coercion may be linked to the contents of an individual’s sexual script for consensual sexual interactions. In particular, we propose that individuals are more likely to hold attitudes that condone sexual coercion under certain circumstances if their sexual scripts contain risk elements linked to sexual aggression (e.g. drinking alcohol when having sex and the ambiguous communication of sexual intentions), and who accept these elements as normative. As discussed in more detail below, previous research has demonstrated the impact of sexual scripts on sexual aggression. In the present research, we sought to demonstrate that the script-based model of sexual coercion can also be fruitfully applied to understanding young people’s attitudes towards sexual coercion in Poland and extend our theorising by examining two cultural variables thought to be relevant for the formation of sexual scripts: pornography and religion. These two variables were selected because they convey sexuality-related norms that may influence sexual scripts, which are acquired in the course of socialisation (Simon & Gagnon, 1986). Catholicism is a highly influential cultural force in Poland (Boguszewski, 2008; Public Opinion Research Center [Centrum Badania Opinii Społecznej], 2015) and presents clear scripts and norms about sexual behaviour. Pornography is also a pervasive, if competing, cultural influence among young people in Poland, portraying images of sexuality that may contribute to the formation of risky sexual scripts. Voluntary exposure to pornography

was reported by about 78% of Polish youth aged between 17 and 18 (Izdebski, 2012). Furthermore, in a study on internet use behaviour of even younger adolescents (between 14 and 17) from seven European countries (Germany, Greece, Iceland, Netherlands, Poland, Romania, and Spain), 67% of the Polish adolescents reported having consumed pornographic media in the last year (Tsitsika et al., 2013). Therefore, both pornography and religion may be considered sources of influence that shape young Poles' sexual scripts and thereby indirectly predict attitudes condoning sexual coercion.

The conceptual model resulting from these considerations and examined in the present study is shown in Figure 1. Evidence supporting the proposed relationships between the constructs included in the model is discussed in the next sections.

Risky sexual scripts and attitudes towards sexual coercion

Several studies have linked adolescents' and young adults' scripts for consensual sexual interactions to attitudes towards sexual coercion and to sexual aggression perpetration. In particular, the extent to which established behavioural risk factors for sexual aggression are part of the cognitive script for consensual sex was shown to predict the likelihood of engaging in sexually aggressive behaviour (D'Abreu & Krahe, 2014; Krahe, Bieneck, & Scheinberger-Olwig, 2007). One such behavioural risk factor is the *use of alcohol* in sexual interactions. Alcohol use has been established as a risk factor for sexual aggression perpetration at a distal level, such as general/habitual drinking patterns (e.g. Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006) and at a proximal level, such as drinking on a date and in sexual situations (e.g. Abbey, Parkhill, Clinton-Sherrod, & Zawacki, 2007; Abbey et al., 2001). An experimental study by Noel, Maisto, Johnson, and Jackson (2009) showed that participants who were under the influence of alcohol were more accepting of sexual aggression than non-intoxicated controls. A second behavioural risk factor is the *ambiguous communication* of sexual intentions. Such ambiguous communication may take the form of saying "no" despite being willing to engage in sex with the other person, which has been related to men's sexual aggression (Krahe, Scheinberger-Olwig, & Kolpin, 2000; Loh, Gidycz, Lobo, & Luthra, 2005). Another form of ambiguous communication consists in consenting to sexual contact that is actually not wanted (O'Sullivan & Allgeier, 1998), which was also found to be associated with sexual aggression perpetration (Krahe et al., 2000). A further behavioural risk factor for sexual aggression is the *readiness to engage in casual sexual contacts*. According to the *confluence model* by Malamuth, Linz, Heavey, Barnes, and Acker (1995), "impersonal sex" (IS) is one of two pathways of men's sexual aggression towards women. The IS pathway is characterised by a non-committal, game-playing orientation towards sexual relations (Vega & Malamuth, 2007).

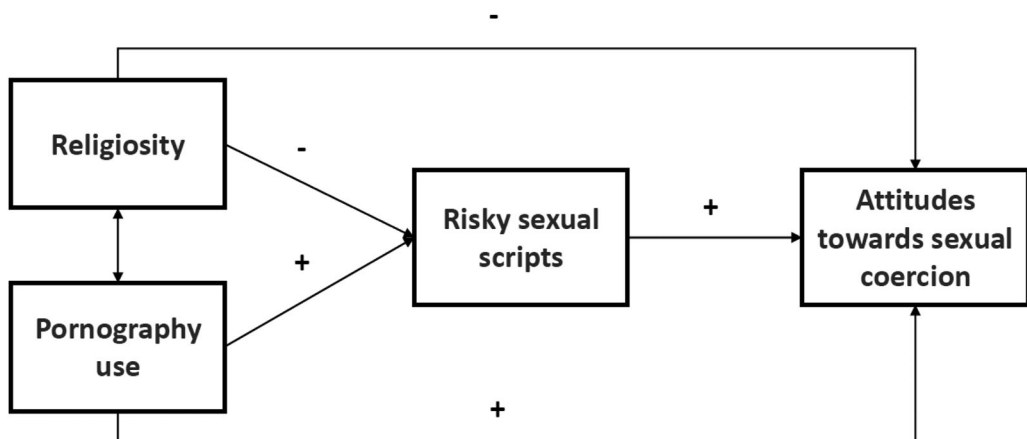


Figure 1. Conceptual model of the predictors of attitudes towards sexual coercion.

The association of risky sexual scripts with attitudes condoning sexual aggression has been demonstrated in cross-sectional studies with German and Polish adolescents (Krahé & Tomaszewska-Jedrysiak, 2011; Krahé et al., 2007), and longitudinal evidence from Germany and Brazil has identified risky sexual scripts as predictors of sexual aggression (D'Abreu & Krahé, 2014; Krahé et al., 2007). As noted above, scripts have both descriptive components, defined in terms of the characteristic features belonging to the script, and normative components, defined in terms of the positive evaluation of those features (Huesmann, 1998). Therefore, both descriptive and normative aspects of sexual scripts were assessed in the present study. Based on the logic of expectancy-value models, for example, the attitude concept by Fishbein and Ajzen (1975), we assumed a multiplicative relationship between the extent to which a particular feature is seen as characteristic of a situation (the expectancy component) and the extent to which it is accepted as normative (the value component). Thus, regarding certain features as strongly characteristic of a sexual encounter is proposed to predict the attitudes condoning sexual coercion only to the extent that they are positively evaluated.

Links of pornography use with risky sexual scripts and attitudes towards sexual coercion

A large body of international studies has documented that pornography is widely used among young people (see Flood, 2009, for a review). The link between pornography use and risky sexual scripts is based on the conceptualisation that sexual scripts are socially constructed (Simon & Gagnon, 1986). Images and contents of pornographic media may affect how individuals see, evaluate, and enact sexuality, thus shaping their sexual scripts (Štulhofer, Buško, & Landripet, 2010). Peter and Valkenburg have shown cross-sectionally (2007) and longitudinally (2009) that Dutch male and female adolescents who used pornography frequently more strongly endorsed the view of women as sex objects. In a study from the United States, pornography use in early adolescence predicted more permissive sexual attitudes and more stereotypical gender roles two years later (Brown & L'Engle, 2009). In addition, features considered to be risk elements in participants' sexual scripts are often presented in pornography, for example, actors' initial refusal of sex followed by apparent enjoyment of the sexual activity (Vannier, Currie, & O'Sullivan, 2014) or the use of alcohol as a strategy of exploitation (Cowan, Lee, Levy, & Snyder, 1988).

Several studies have demonstrated a link between pornography use and attitudes supporting violence towards women. In their meta-analysis, Hald, Malamuth, and Yuen (2010) found a positive association between pornography use and attitudes supporting violence towards women, not only for violent ($r = .24$), but also for non-violent pornography ($r = .13$). Pornography that depicts women as promiscuous or as sex objects (Peter & Valkenburg, 2009), or as being dominated or even degraded by men (Dines, 2010) may promote attitudes supporting violence due to "sexual callousness" in beliefs and behaviour. Moreover, content analyses have identified portrayals of sexual aggression in pornography (Bridges, Wosnitzer, Scharer, Sun, & Liberman, 2010; Gossett & Byrne, 2002), which may serve to normalise sexual coercion.

Links of religiosity with risky sexual scripts and attitudes towards sexual coercion

The relationship between religiosity, risky sexual scripts, and attitudes towards sexual coercion may be considered within the broader context of the relationship between religiosity and sexuality. Wallace and Williams (1997) postulated that religion plays an important role in understanding sexual behaviour and should be considered as a socialising influence. In their review of 10 longitudinal studies conducted between 1980 and 2000 with adolescents in the United States, Rostosky, Wilcox, Wright, and Randall (2004) found evidence that having a stronger religious affiliation and attending religious services regularly predicted a delayed onset of sexual activity. The link was more consistent for females than for males. A more recent review also found a negative, but weak link between religiosity and sexual activity (Hernandez, Mahoney, & Pargament, 2014). A

longitudinal study from Norway showed that affiliation with a Christian religion, belief in God, and frequent church attendance, measured at the age of 16, was associated with later sexual debut and fewer sexual partners at the ages of 21 and 28 (Pedersen, 2014). Studies with young adults from other European countries, such as Croatia (Štulhofer, Šoh, Jelaska, Baćak, & Landripet, 2011) or Poland (Izdebski & Ostrowska, 2003; Wróblewska, Strzelecki, & Matysiak, 2003), have also confirmed the negative, yet weak link between religiosity and sexual activity.

Since no studies were found that specifically examined the relationship between religiosity and attitudes towards sexual coercion, tentative conclusions may be derived from studies on intimate partner violence (sexual and nonsexual) or attitudes towards intimate partner violence. Consistent with the proposition that religiosity may promote special values related to love and care towards a partner (Scanzoni & Arnett, 1987), studies have demonstrated a negative link between religiosity and attitudes towards interpersonal violence. Men who regularly attended religious services were less likely to abuse their female partners than non-religious men, after controlling for potential third variables (Ellison & Anderson, 2001; Ellison, Trinitapoli, Anderson, & Johnson, 2007). Furthermore, Berkel, Vandiver, and Bahner (2004) demonstrated that university students in the United States who scored higher on a measure of attitudes towards spiritual actions (helping others in need) expressed more sympathy for a battered woman. People with stronger spiritual beliefs were found to treat others with greater respect and dignity (Armstrong, 1996) and to have less egocentric sexual needs (McClain, 1978), which should make them less accepting of the use of force. Based on these findings, we proposed that greater religious commitment may be linked to greater attentiveness to a partner's sexual needs and boundaries, as reflected in a negative association between religiosity and attitudes condoning of sexual coercion.

The current study

The aim of this study was to examine the links between cognitive representations of consensual sex and attitudes towards sexual coercion in a sample of Polish high school students. We proposed that risky sexual scripts, that is scripts that contain risk elements linked to sexual aggression, would be associated with attitudes more condoning of the use of coercion in sexual encounters and examined the role of pornography use and religiosity as contributory factors to both risky sexual scripts and attitudes condoning sexual coercion.

Based on our conceptual model presented in [Figure 1](#), six hypotheses were examined. Hypothesis 1 predicted that risky sexual scripts would be linked to attitudes more condoning of sexual coercion. Hypothesis 2 predicted a direct positive link between pornography use and attitudes condoning sexual coercion. Since religious values emphasise human dignity and mutual respect, in Hypothesis 3 we anticipated that religiosity would be linked to attitudes less condoning of sexual coercion. Since much pornographic material presents a view of sexuality that contains behaviours linked to the risk of sexual aggression, such as promoting impersonal sex or using ambiguous sexual communication, in Hypothesis 4 we expected that more frequent pornography use would be positively correlated with risky sexual scripts. Given that religiosity has been associated with restrictive prescriptions regarding sexuality, Hypothesis 5 predicted that religiosity would be negatively linked to risky sexual scripts. Finally, in Hypothesis 6, we expected that pornography use and religiosity would predict attitudes condoning sexual coercion indirectly via more risky (pornography) and less risky (religiosity) sexual scripts.

Method

Participants

A total of 531 students in the final year of high school from Zielona Góra, a university city in the West of Poland with about 140,000 inhabitants, participated in the study. They were in 29 different classes

at four different schools. Six participants were excluded from the analyses because of missing responses. One participant who self-identified as homosexual was excluded because the measures referred to heterosexual interactions only. Thus, the final sample consisted of 524 high school students (50.4% female), of whom 98.7% had Polish and 1.3% had another nationality. Most participants (97.7%) were aged between 18 and 20 years, with a mean of $M = 19.4$ years ($SD = 0.87$) for males and $M = 19.1$ years ($SD = 0.77$) for females, $t(508) = 3.99, p < .001$. Almost all participants (97.9%) aspired to complete university entrance qualification. In terms of religious background, 80.2% were Roman Catholics, 15.4% had no religious affiliation, and 4.5% indicated other religions. The majority of participants reported sexual experiences below the level of sexual intercourse (e.g. kissing, sexual touching), with a significantly higher rate of female (93.9%) than male (84.7%) participants, $\chi^2(1, N = 517) = 11.47, p < .01$. A total of 68.1% of male and 69.5% of female participants reported coital experience, with a mean age at first intercourse of $M = 17.1$ years ($SD = 1.2$). There was no gender difference on this variable, $t(340) = -0.38, p = .71$. More female (84.4%) than male (74.2%) participants reported currently being in a relationship or having been in a relationship in the past $\chi^2(1, N = 522) = 8.15, p < .01$. Male participants reported more sexual partners ($M = 2.76, SD = 2.42$) than did females ($M = 1.93, SD = 1.42$), $t(248) = 3.78, p < .001$.

Procedure

Both the Ethics Committee at the authors' university and the Bioethics Commission of the University of Zielona Góra in Poland approved the study. Additional permission was obtained from the head teachers of the participating schools. Moreover, written consent to participate in the study was obtained from the students. Participants completed the questionnaires individually during class time. They were informed about the objectives of the study, that participation was voluntary, and that they would be able to terminate participation at any time without giving reasons. They were invited to take part in a raffle to win a cinema voucher worth about 15 zloty (approximately \$4,20 USD) in return for participation. The questionnaire took about 30 minutes to complete.

Measures

All measures in this study had originally been developed in German. For the purposes of the present study, they were translated from German into Polish, using state-of-the-art back translation methods (Brislin, 1970). The measures in Polish are available from the first author.

Attitudes towards sexual coercion

A measure developed by Krahé et al. (2007) based on Goodchilds et al. (1988) was used to assess participants' attitudes towards the use of physical force to make a girl engage in unwanted sexual intercourse. The instruction was presented as follows:

Imagine a boy wants to have sexual intercourse with a girl, but the girl says "no". Under what circumstances would you find it understandable that the boy uses or threatens to use physical force (e.g. hurt her, hold her down) to make her have sex with him?

A total of 14 justifications for the use of the physical force were presented (e.g. "She said yes at first but then changed her mind", "he is drunk or stoned"). The text of all items is presented in Table 1. Responses were made on a scale ranging from 1 (*absolutely not*) to 5 (*absolutely yes*). Responses were averaged into a total score based on a high internal consistency of $\alpha = .96$, with higher scores indicating attitudes more condoning of sexual coercion.

Table 1. Attitudes towards sexual coercion: means and percentages of participants with responses greater than “Absolutely Not”.

Imagine a boy wants to have sexual intercourse with a girl, but the girl says “no”. Under what circumstances would you find it understandable that the boy uses or threatens to use physical force (e.g. hurt her, hold her down) to make her have sex with him? I would find it understandable, if ...		Men (n = 245)			Women (n = 260)		
		Mean	SD	% > 1	Mean	SD	% > 1
1	He is so aroused that he cannot stop himself any more.	1.43	(0.92)	23.6	1.42	(0.88)	22.1
2	He bought her drink or something before.	1.40	(0.80)	26.2	1.28	(0.72)	18.6
3	She is drunk or stoned.	1.45	(0.87)	26.6	1.47	(1.00)	21.7
4	He is drunk or stoned.	1.64	(1.00)	36.3	1.67	(1.07)	32.3
5	She has slept with him before.	1.78	(1.08)	42.6	1.81	(1.11)	42.6
6	She has slept with other boys before.	1.62	(0.99)	37.1	1.51	(0.97)	28.1
7	She has kissed him before.	1.58	(0.92)	36.5	1.52	(0.90)	31.2
8	She has allowed him to touch her breasts before.	1.78	(1.11)	41.7	1.70	(1.01)	40.8
9	She said yes at first but then changed her mind.	1.81	(1.11)	43.2	1.79	(1.05)	45.6
10	They have been in a relationship for some time.	1.72	(1.08)	39.6	1.74	(1.16)	37.3
11	She led him on.	1.80	(1.12)	42.3	1.65	(1.04)	33.8
12	She first got him aroused.	1.90	(1.22)	43.8	1.85	(1.14)	43.7
13	He believes she only plays coy and really wants to have sex as well.	1.85	(1.14)	43.6	1.62	(0.94)	37.6
14	He wants to show to his mates that he can score with a girl.	1.40	(0.83)	23.8**	1.31	(0.90)	13.7**

Note: Responses ranged from 1 (*absolutely not*) to 5 (*absolutely yes*).

Gender differences in means tested in a MANOVA, gender differences in frequencies tested via chi-square tests with a corrected p level of .05/14. ** $p = .003$.

Risky sexual scripts

A scenario-based measure was used to elicit the characteristic features of participants' scripts for consensual sexual encounters (Krahé et al., 2007; Krahé & Tomaszewska-Jedrysiak, 2011). The scenario addressed the descriptive component of the risk elements in sexual scripts, that is, the extent to which there were part of the script. It was presented as follows:

You spend the evening with a boy/girl. In the course of the evening, you sleep together for the first time. You are NOT asked to describe one particular situation you have experienced in the past. Rather, we would like to know what you imagine a situation like this would normally look like for you.

Different versions were created for male and female participants, referring to a partner of the opposite sex.

Participants were presented with a list of features related to the scenario and asked to indicate to what extent each feature applied to the presented situation. The following characteristics referring to the risk of sexual aggression were analysed: (1) Length of acquaintanceship before the sexual encounter and features reflecting noncommittal sex (four items; e.g. “How long have the two of you known each other before?”, reverse scored); (2) alcohol and drug consumption and the degree of intoxication of both partners (six items; “How likely is it that alcohol is consumed by the you/by the boy/girl?”); and (3) ambiguous communication of sexual intentions (four items, e.g. “How likely is it that you first say ‘no’ even though you also want to have sex with him/her?”; reverse coded). Participants responded to the likelihood items on a five-point scale ranging from 1 (*very unlikely*) to 5 (*very likely*). For length of acquaintanceship, the response scale ranged from 1 (*not at all*) to 5 (*a few months or longer*). For the items on alcohol intoxication, the response scale ranged from 1 (*not at all*) to 5 (*totally*). The full item list is presented in the Appendix. An overall risk score was computed across the 14 items, based on a good internal consistency of $\alpha = .78$, with higher scores indicating more risky scripts. A Confirmatory Factor Analysis (CFA) confirmed that the risk features represented a single underlying dimension. The model in which all items were specified to load on a single factor showed an acceptable fit with the data after allowing items addressing the same facet (e.g. the two items on alcohol use by self and partner) to correlate, CFI = .94; RMSEA = .054 CI [.044, .064]; $\chi^2(66, N = 524) = 166.02, p < .001, SRMR = .055$.

A separate 12-item scale measured the normative or evaluative component of the risk elements in sexual scripts (Krahé et al., 2007; Krahé & Tomaszewska-Jedrysiak, 2011). Two items referred to alcohol

and drug consumption in the context of sexual interactions (example item: “Drinking alcohol when meeting a girl and having sex with her is part of the game”), four items referred to the ambiguous communication of sexual intentions (example item: “It is part of the game for a girl to say no at first when a boy wants to have sex with her even though she wants it too”), and six items referred to the approval of casual sex (example item: “It is ok for a boy to have sex with a girl on their first night out”). Responses were made on a five-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The complete list of items is presented in the [Appendix](#). A total score across the 12 items was created based on a good internal consistency of $\alpha = .88$, with higher scores indicating a more positive evaluation of the risk elements. The items of the norms measure also loaded on a single factor, as confirmed in a CFA allowing items addressing the same facet (e.g. the two items on alcohol use by self and partner) to correlate, CFI = .95; RMSEA = .070 CI [.059, .082]; $\chi^2(44, N = 524) = 158.35, p < .001$; SRMR = .056).

As noted above, scripts were conceptualised according to the logic of expectancy-value models to consist of a multiplicative combination of descriptive and normative components, reflected in our script and norms measures. Unlike the standard approach in calculating expectancy-value scores, we were unable to compute the product term at the item level because there was no one-to-one correspondence between the script items and the items measuring the normative acceptance of the script features. Therefore, we calculated an overall score of risky sexual scripts by multiplying the total score across the 14 script items by the total score across the 12 normative items. The measure had a theoretical range of 1–25. Participants who indicated that the different script features were not part of their sexual scripts and who did not evaluate these features positively scored at the low end of the measure of risky sexual scripts; participants who considered the features to be part of their scripts and evaluated them positively scored at the high of the risky sexual script measure. The calculation of the product term based on the scale values rather than the individual items was corroborated by the fact that CFAs on both measures showed that the items represented a single underlying construct.

Pornography use

A modified version of the scale constructed by Krahé (2011) was used to measure exposure to pornographic content on TV, the Internet and in magazines. Participants received the following instruction: “In this part of the questionnaire, we would like to know if you have ever seen films or photos with sexual content: Have you ever seen (1) sex photos (2) images of sexual intercourse, (3) images of other sexual acts, for example, oral sex, masturbation, and (4) films in which the man and the woman engaged in sexual activities that they both wanted.” Four additional questions asked about the context in which the sexual activities were presented. These items were designed to match the risk elements in sexual scripts (e.g.: “Have you ever watched scenes showing sexual intercourse (1) where the woman and the man did not know each other at all? (2) the woman first said “no” but was then happy to have sex with the man; (3) the woman and/or the man were drinking alcohol; and (4) the woman and/or man were taking drugs.” Responses were made on a five-point scale ranging from 1 (*never*) to 5 (*very often*). A mean score of pornography use was computed across the eight items based on a good internal consistency of $\alpha = .79$, with higher scores indicating more frequent pornography use. The full item list is presented in the [Appendix](#).

Religiosity

Religiosity was measured by two items. The first item measured frequency of church-going: “How often do you go to church?”, with responses made on a scale from 1 (*1–2 times per week or more often*) to 5 (*never*) (reverse coded). The second item, “How deep is your religious faith?” (Mahoney, 1980), had a response scale from 1 (*not at all intense*) to 5 (*very intense*). An overall religiosity score was computed by averaging responses across the two items ($r = .66$), and higher scores indicated greater religious commitment.

Sexual experience background

Six items referred to participants' sexual and relational experience background: experience of a steady relationship, sexual experience below the level of full sexual intercourse, coital experience, age at first sexual intercourse, number of sexual casual partners, and number of steady sexual partners. Only the coital experience variable was used in the analysis.

Plan of data analysis

A multivariate analysis of variance (MANOVA) was conducted to examine differences in relation to gender and coital experience on all variables included in the hypotheses. The model presented in [Figure 1](#) was tested with Mplus 7.1, employing Maximum Likelihood Robust (MLR) estimators, which is more robust for handling non-response in non-normally distributed data than regular Full Information Maximum Likelihood (FIML), as it corrects for deviation from multivariate normality by employing robust standard errors and an adjusted chi-square. The two-level structure of the data (students nested in classes) was accounted for by specifying the "type = complex" model command in Mplus. The statistical significance of the indirect effects was tested by estimating confidence intervals for the indirect effects with the bootstrapping method (Mackinnon, Lockwood, & Williams, 2004) using the R version 3.0.3. Multi-group models for males and females and for participants with and without coital experiences were specified. Models in which the paths for the two gender and coital experience groups were constrained to be equal were compared to unconstrained models in which the paths were allowed to vary between the groups, using the chi-square difference test (Geiser, 2012).

Results

Descriptive results and correlations

Attitudes towards sexual coercion

Only 39.5% of male and 35.7% of female participants had a mean score of 1, indicating that they responded to all justifications with "absolutely no". The gender difference was not significant ($\chi^2(1, N = 521) = 0.80, p = .37$). At the level of the single items, the remaining participants showed at least some understanding for the use of sexual coercion under certain circumstances, as shown in [Table 1](#). As indicated by chi-square tests, there was only one justification that was endorsed more by male (23.8%) than by female (13.7%) participants, namely "he wants to show to his mates that he can score with a girl" ($\chi^2(1, N = 523) = 8.86, p = .003$). Gender differences on all remaining items were non-significant. No significant differences at the item level were found in relation to coital experience. A MANOVA with gender and coital experience as factors and the 14 items as dependent variables yielded non-significant multivariate effects for gender ($F(14, 488) = 1.70, p = .053, \eta^2 = .046$), for coital experience ($F(14, 488) = 0.80, p = .675, \eta^2 = .022$) as well as for the multivariate interaction ($F(14, 488) = 1.21, p = .336, \eta^2 = .031$).

Differences by gender and coital experience on the model variables and bivariate correlations

A MANOVA was conducted with gender and coital experience as factors and risky sexual scripts, pornography use, religiosity, and the aggregated score of attitudes towards sexual coercion as dependent variables. The analysis yielded significant multivariate effects of gender, $F(4, 505) = 29.59, p < .001, \eta^2 = .190$, and coital experience $F(4, 505) = 3.05, p < .05, \eta^2 = .024$. The multivariate interaction between gender and coital experience was not significant, $F(4, 505) = 2.13, p = .076, \eta^2 = .017$. The mean scores on the dependent measures in the total sample were $M = 4.99$ ($SD = 2.71$) for risky sexual scripts, $M = 3.09$ ($SD = 0.69$) for pornography use, $M = 2.40$ ($SD = 1.21$) for religiosity, and $M = 1.64$ ($SD = .84$) for attitudes towards sexual coercion. The means and standard deviations

separated by gender and coital experience are shown in Table 2. Male and female participants differed on all variables except their attitudes towards sexual coercion. Male participants had higher scores in their risky sexual scripts and reported more frequent pornography use. Female participants scored higher on the measure of religiosity. Sexually experienced participants reported more risky scripts, used pornography more frequently, and were less religious ($p = .052$), but they did not differ from those without coital experience in their attitudes towards sexual coercion.

Table 3 presents the zero-order correlations between the model variables, broken down by gender and coital experience. In both gender groups, risky sexual scripts correlated positively with all other variables, except for religiosity in women. The bivariate correlation between pornography use and attitudes towards sexual coercion was non-significant. In both males and females, attitudes condoning sexual coercion were positively correlated with religiosity. For men but not for women, religiosity correlated negatively with pornography use. Regardless of coital experience, risky sexual scripts were positively correlated with pornography use and attitudes condoning sexual coercion, but negatively with religiosity. Additionally, religiosity was positively associated with attitudes condoning sexual coercion. In both groups, pornography use and religiosity were unrelated. Pornography use correlated positively with the attitudes condoning sexual coercion only in participants with coital experience.

Predicting risky sexual scripts and attitudes towards sexual coercion

Because the variables included in the path model differed by gender and coital experience, multi-group models for males and females and for participants with and without coital experience were specified to test the hypotheses. The multi-group model for gender in which all paths were constrained to be equal for males and females showed a good fit with the data (CFI = 1.00; TLI = .99; RMSEA = .02, 95% CI [.00, .08]; $\chi^2(df = 6, N = 523) = 6.454, p > .10$; SRMR = .04). This model was tested against an unconstrained model in which all paths were allowed to vary between the male and female gender groups, using the χ^2 difference test (Geiser, 2012). The unconstrained model did not show a significantly better fit, (χ^2 diff = 6.454, $df = 6, p = .374$), indicating that the pathways of the model held for both gender groups. A second model was estimated using coital experience

Table 2. Mean scores as a function of gender and coital experience.

Variable	N items	Range	Gender		Coital experience	
			Men ($n = 252$) M (SD)	Women ($n = 260$) M (SD)	Yes ($n = 352$) M (SD)	No ($n = 160$) M (SD)
1 Risky sexual scripts ¹	26	1–25	6.26*** (2.87)	3.76*** (1.84)	5.14* (2.82)	4.67* (2.44)
2 Pornography use	8	1–5	3.22*** (0.69)	2.97*** (0.67)	3.14* (0.69)	2.99* (0.67)
3 Religiosity	2	1–5	2.15*** (1.24)	2.64*** (1.13)	2.33 ⁺ (1.16)	2.54 ⁺ (1.30)
4 Attitudes towards sex. coercion	14	1–5	1.68 (0.87)	1.60 (0.81)	1.66 (0.88)	1.58 (0.74)

Note: ¹Multiplicative score of the descriptive ($n = 14$) and normative ($n = 12$) components of sexual scripts.

⁺ $p = .052$, * $p < .05$, *** $p < .001$.

Table 3. Zero-order correlations of the model variables by gender and coital experience.

Variable	Gender				Coital experience			
	1	2	3	4	1	2	3	4
1 Risky sexual scripts	–	.23**	–.17**	.31**	–	.29**	–.16**	.25**
2 Pornography use	.27**	–	–.15*	.05	.28**	–	–.06	.12*
3 Religiosity	–.12	.03	–	.21**	–.34**	–.11	–	.19**
4 Attitudes towards sex. coercion	.18**	.09	.15*	–	.25**	–.06	.17*	–

Note: Gender: Correlations above the diagonal refer to men, below the diagonal to women. Coital experience: Correlations above the diagonal refer to participants with coital experience, below the diagonal to participants without coital experience.

* $p < .05$, ** $p < .01$.

as the grouping variable. The constrained model had a good fit (CFI = .99; TLI = .99; RMSEA = .03, 95% CI [.00, .09]; $\chi^2(df = 6, N = 515) = 6.989, p > .10$; SRMR = .03) and did not fit significantly worse than the unconstrained model in which the paths were allowed to vary between the experienced and inexperienced groups (χ^2 diff = 6.989, $df = 6, p = .321$).

Because the multi-group analyses did not suggest significant differences in the proposed associations due to gender and coital experience, the model in which gender and coital experience were included as covariates was adopted as the final model. This model, shown in Figure 2, was saturated, and therefore no fit indices are available. In line with Hypothesis 1, risky sexual scripts were positively linked to attitudes condoning sexual coercion ($\beta = .32, p < .001$). The more pronounced and accepted the risk elements of sexual aggression were in participants' scripts for consensual sex, the more they thought that sexual coercion was understandable under certain circumstances. The direct path from pornography use to attitudes towards sexual coercion was non-significant ($\beta = .01$), failing to support Hypothesis 2. Contrary to Hypothesis 3, the more religious participants were, the more condoning they were of sexual coercion ($\beta = .23, p < .001$). Consistent with Hypothesis 4, the more frequently participants used pornography, the more risky their sexual scripts, ($\beta = .20, p < .01$). As predicted in Hypothesis 5, the more religious participants were, the less risky their sexual scripts ($\beta = -.11, p < .01$). Finally, in line with Hypothesis 6, we found a positive indirect association between pornography use and attitudes condoning sexual coercion, operating through participants' risky sexual scripts ($\beta = .06, 95\% \text{ CI } [.04, .10]$). The predicted negative indirect effect of religiosity was also confirmed ($\beta = -.04, 95\% \text{ CI } [-.07, -.01]$).

Discussion

This study investigated the link between Polish high school students' sexual scripts for consensual sexual interactions and their attitudes towards sexual coercion. Pornography and religion were studied as potential sources of influence on the contents of sexual scripts. Demonstrating that certain features of the cognitive scripts for consensual sex are associated with positive attitudes towards sexual coercion may inform the development of sexual education programmes and evidence-based interventions to prevent sexual aggression.

Overall, female and male participants, regardless of their coital experience, generally did not approve the use of sexual coercion. However, only about 40% completely rejected all of the

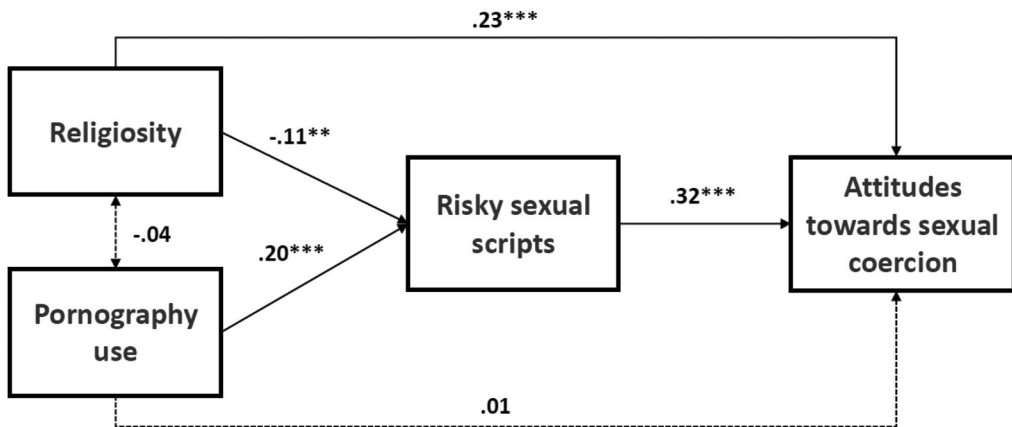


Figure 2. Standardised path coefficients for the prediction of attitudes towards sexual coercion. Note: *** $p < .001$; ** $p < .01$, saturated model; $N = 515$. MLR estimator. Indirect effects: Pornography use \rightarrow Risky sexual scripts \rightarrow Attitudes towards sexual coercion: $\beta = .06, 95\% \text{ CI } [.04, .10]$; Religiosity \rightarrow Risky sexual script \rightarrow Attitudes towards sexual coercion: $\beta = -.04, 95\% \text{ CI } [-.07, -.01]$. Controlled for gender and coital experiences as well as for the fact that students were nested in classes (class as a cluster variable).

justifications, which indicates that a considerable proportion of the participants condoned, albeit at a low level, the use of sexual coercion under certain circumstances. Previous research also indicated that the use of coercion in sexual interactions with women is not generally considered acceptable by young people. For example, in the study by Krahé, Bieneck, and Scheinberger-Olwig (2004), 16.7% of males, and 19.3% of females did not find the use of force acceptable under any circumstances. The somewhat higher rates of rejection of sexual coercion in the present study could be due to the fact that participants in our study were older (19.3 years vs. 16.5 years in study of Krahé et al., 2004). As some authors have suggested (e.g. Cook, 1995), attitudes towards sexual coercion may be affected by developmental change and decrease with age.

Consistent with previous research (Krahé et al., 2007), we found a significant association between risky sexual scripts and attitudes condoning sexual coercion. The more pronounced risk elements for sexual aggression were in their scripts for consensual sexual interactions, the more likely participants were to find the use of sexual coercion acceptable under certain circumstances. In addition to these cross-sectional associations, Krahé et al. (2007) found that risky sexual scripts prospectively predicted the acceptance of sexual aggression measured 12 months later, corroborating the importance of sexual scripts in shaping attitudes condoning sexual coercion. Furthermore, in line with Huesmann's (1998) script theory, we conceptualised sexual scripts as containing both descriptive and normative components, adding to a better understanding of sexual scripts as cognitive schemas influenced by social norms and personal experiences.

Contrary to our predictions and to previous studies (e.g. Hald et al., 2010), we did not find a direct link between pornography use and attitudes towards sexual coercion. This may be due to the fact that we did not specifically measure violent pornography use but asked about the use of sexually explicit material generally. In past research, the link between general pornography use and attitudes supporting violence against women was somewhat weaker than the link for violent pornography (Hald et al., 2010). A study with German adolescents also found that acceptance of sexual aggression was significantly associated with the use of violent but not non-violent pornography (Krahé, 2011). Future research should assess both non-violent and violent pornography use to further investigate the specific contents of pornography in promoting positive attitudes towards sexual coercion.

However, pornography use was indirectly linked to attitudes condoning sexual coercion through its association with risky sexual scripts. This finding is consistent with a longitudinal study from Brazil in which pornography use was an indirect prospective predictor of sexually aggressive behaviour through its impact on risky sexual scripts (D'Abreu & Krahé, 2014). In that study, the direct link from pornography use to sexual aggression assessed six months later was also non-significant. The present findings support the theoretical conceptualisation of pornography as a potential source of information for the contents of sexual scripts. They are in line with prospective studies suggesting that the scripting process may be influenced through observed images, norms, and behaviour patterns presented in pornographic media (Tokunaga, Wright, & McKinley, 2015).

Our findings are especially relevant in light of the fact that almost all participants reported having used pornographic media at least once. Due to the strong influence of the Catholic church in Poland and its opposition to any form of premarital sexual activity, sexual education for young people is lacking, as noted by Polish sexologists (Dec, 2012; Waszyńska, Groth, & Kowalczyk, 2013). Therefore, pornography may be particularly influential in informing young people's sexual scripts, as there are few other sources of information that might provide alternative representations of sexual relationships.

Religiosity was linked to attitudes towards sexual coercion both directly and indirectly through its link with cognitive scripts; yet, the direction of the association differed. The indirect link indicates that participants' greater religious commitment was negatively related to attitudes condoning sexual coercion via less risky sexual scripts. As scripts are influenced by social norms (e.g. Frith, 2009), the normative influence of religiosity may be reflected in more conservative and less risky sexual scripts, which were linked to attitudes less condoning of sexual coercion. Previous studies have demonstrated that more religious youth are less likely to engage in risky sexual behaviour

(e.g. Izdebski & Ostrowska, 2003; Štulhofer et al., 2011) as well as in other risky behaviours such as alcohol use and smoking (e.g. Ostaszewski, Rustecka-Krawczyk, & Wójcik, 2009), suggesting that religiosity may serve a protective function against antisocial behaviour in general.

However, such a direct negative link between religiosity and attitudes condoning of sexual coercion was not found in our data. On the contrary, we found that participants were more condoning of sexual coercion the more religious they were. Since religiosity is a multifaceted construct, it is possible that additional variables not included in our model, such as the acceptance of traditional gender roles and the perceived requirement for a woman to conform to male expectations about sexuality, may lie behind the positive association. For example, several studies have shown that Christians hold more traditional gender roles (e.g. Bryant, 2006). Endorsing the traditional female role is in keeping with Roman Catholicism and may promote sexist attitudes (Mikołajczak, 2009; Pietrzak & Mikołajczak, 2011). Other research has shown that Christians are more accepting of rape myths that legitimise the use of sexual coercion by shifting blame to the victim and trivialising sexual violence against women (Giovannelli & Jackson, 2013). In future research, gender roles and rape myth acceptance should be considered as additional mediators in the link between religiosity and attitudes towards sexual coercion.

Limitations and future directions

The present study has several limitations. First, the correlational nature of the data precludes conclusions about causal relations between the investigated variables. To examine the temporal sequence of pornography use, religiosity, risky sexual scripts and attitudes towards sexual coercion, and to provide insight into their reciprocal relations over time, future research should employ longitudinal designs. Second, as the analyses are based on a convenience sample of Polish high school students, the results cannot be applied to Polish youth more generally. Third, the present study examined attitudes about sexual coercion, which needs to be related to a behavioural measure of sexual aggression to support the guiding role of attitudes condoning sexual coercion as an antecedent of sexual aggression. Fourth, our measure of religiosity was based on only two items. Since the construct of religiosity is multidimensional and both positive and negative links between religiosity and attitudes related to sexual coercion are possible, future research needs to consider more facets of religiosity. Fifth, the investigation of pornography use should be extended to include measures of violent pornography and assess the extent to which participants consider pornography as realistic and informative in guiding their own sexual behaviour (Peter & Valkenburg, 2010).

Despite these limitations, our study may contribute new insights into Polish adolescents' attitudes towards sexual coercion and the role of risky sexual scripts in predicting these attitudes. The findings are consistent with evidence from other countries, such as Germany and Brazil, highlighting the critical role of cognitive representations of consensual sex for understanding sexual coercion and its supporting attitudes. Furthermore, this study suggests that both pornography use and religious beliefs are related to the contents of risky sexual scripts. The evidence that risky sexual scripts were associated with attitudes towards sexual coercion may be used in intervention programmes aimed at changing scripts for consensual sexual encounters. For example, Dworkin, Beckford, and Ehrhardt (2007) have argued that changing some typical sequences of actions in sexual scripts, such as changing the time point of condom introduction or the character of sexual encounters from male-dominated to more female-oriented, seems to be promising in terms of HIV/STD prevention. Addressing the risky elements of young people's cognitive representations of consensual sexual encounters and challenging the belief that sexual coercion may be acceptable under certain circumstances could be used as a good practice approach in sexual aggression prevention programmes. Furthermore, strengthening young people's ability to critically appraise the view of sexual relations conveyed by pornographic media may be used in primary prevention and sexual education programmes.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix

Measure of risky sexual scripts

You spend the evening with a boy/girl. In the course of the evening, you sleep together for the first time. You are NOT asked to describe one particular situation you have experienced in the past. Rather, we would like to know what you imagine a situation like this would normally look like for you.

Descriptive component (Version for boys)

Casual sex

1. Had you met just the two of you before that evening? (1 = never; 5 = many times)
2. How long have the two of you known each other before? (1 = not at all; 5 = a few months or more)
3. What are your ideas about how you will go on from here?^a
... no steady relationship with the girl.
4. What are the girl's ideas about how you will go on from here?^a
... no steady relationship with you.

Alcohol and drug consumption

- 5.-6. How likely is it that alcohol is consumed^a
... by you
... by the girl
- 7.-8. How likely is it that drugs are consumed^a
... by you
... by the girl
- 9.-10. How drunk/stoned (1 = not at all; 5 = totally)
... are you
... is the girl

Ambiguous communication of sexual intentions^a

If you start making sexual advances:

11. How likely is it that the girl first says "no" even though she also wants to have sex with you?
12. How likely is it that the girl says "yes" even though she does not want to have sex with you?

If the *girl* starts making sexual advances

13. How likely is it that you first say "no" even though you also want to have sex with her?
14. How likely is it that you first say "yes" even though you do not want to have sex with her?

Normative component^b

1. It is ok for a girl to have sex with a boy whom she does not yet know very well.
2. For a boy, drinking alcohol when meeting a girl and having sex with her is part of the game.
3. It is part of the game for a girl to say no at first when a boy wants to have sex with her even though she wants it too.
4. It is ok for a girl to have sex with a boy on their first night out.
5. It is ok for a girl to have sex with a boy even though she does not want a steady relationship with him.
6. It is ok for a boy to have sex with a girl even though he does not really want to.
7. It is ok for a boy to have sex with a girl whom he does not know very well yet.
8. It is ok for a boy to have sex with a girl on their first night out.
9. For a girl, drinking alcohol when meeting a boy and having sex with him is part of the game.
10. It is part of the game for a boy to say no at first when a girl wants to have sex with him even though he wants it too.
11. It is ok for a girl to have sex with a boy even though she does not really want to.
12. It is ok for a boy to have sex with a girl even though he does not want a steady relationship with her.

Pornography use^c

1. Have you ever seen sex photos (e.g. in magazines or on the Internet)?
2. Have you ever seen images of sexual intercourse (on TV, on videos, or on the Internet)?
3. Have you ever seen images of other sexual acts (e.g. oral sex, masturbation (in magazines, on TV, or on the Internet)?
4. Have you ever watched films in which the man and the woman engaged in sexual activities that they both wanted?
5. Was it a situation in which the two did not know each other before?
6. Was it a situation in which the woman first said "no" but was then happy to have sex with the man?
7. Was it a situation in which the woman and/or man were drinking alcohol?
8. Was it a situation in which the woman and/or man were taking drugs?

The items of the Attitudes towards sexual coercion scale are listed in Table 1.

^aResponses ranged from 1 = *very unlikely* to 5 = *very likely*.

^bResponses ranged from 1 = *totally disagree* to 5 = *totally agree*.

^cResponses ranged from 1 = *never* to 5 = *very often*.