

College of William and Mary

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Fall 2013

Integrating religiosity and pornography use into the prediction of bystander efficacy and willingness to prevent sexual assault.

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Integrating Religiosity and Pornography Use into the Prediction of Bystander Efficacy and Willingness to Prevent Sexual Assault

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This study examined relationships between intrinsic and extrinsic religiosity, reasons for using Internet pornography, frequency of using Internet pornography during the last year, and the degree to which participants believed they were both confident in their efficacy and were willing to intervene to help prevent a sexual assault from occurring. Students volunteered to take an online survey as one of several options for course credit in a research participation system in a School of Education at a midwestern public university. Men's extrinsic religiosity was positively correlated with their use of Internet pornography and negatively correlated with willingness to intervene as a bystander. Men's intrinsic religiosity was negatively correlated with how many reasons they had for using pornography and negatively correlated with their use of pornography. Women's extrinsic religiosity negatively correlated with their bystander efficacy. Women's intrinsic religiosity was negatively correlated with their reasons for using pornography and their use of pornography. Women's use of pornography was negatively correlated with bystander efficacy. A regression revealed that three religiosity variables and two pornography variables predicted 19% of the variance in women's bystander efficacy.

college women have experienced rape or attempted rape at some point in their lives (Fisher, Cullen, & Turner, 2006). By the time they turn 18, one in six males have experienced sexual abuse (Dube, Anda, Whitfield, et al., 2005). Scholarship in the field of psychology has identified the willingness and efficacy of bystanders to intervene in a potential sexual assault situation as primary targets for programmatic interventions. Research psychologists have also increasingly noted how pornography use predicts both perpetrator behavior and bystander involvement (Banyard, 2008). Meanwhile, theologians have identified religiosity as contributing toward pro-social behavior and moderating the effects of harmful influences, such as pornography (Baltazar, Helm, McBride, Hopkins, & Stevens, 2010). Integrating the scholarship in these interrelated areas is an important step in understanding how to decrease sexual violence.

Encouraging bystander intervention is the prevailing prevention approach used on college campuses for sexual assault education, with a wide variety of programs demonstrating attitude and behavior changes (Katz, Heisterkamp, & Fleming, 2011; McMahon & Banyard, 2012). Experimental and correlational research has shown that use of Internet and other types of pornography is associated with a variety of sexually violent behavior (Kington, Malamuth, Fedoroff, & Marshall, 2009). Initial research suggests that religiosity

Sexual violence is an issue that impacts the lives of many. Research has consistently shown that one in four

has a protective role in the harms associated with Internet pornography use (Baltazar et al., 2010), yet how religiosity variables interact to predict bystander intervention is an unexplored issue. Research has found that the use of pornography, particularly violent pornography, suppresses bystander intervention in both male and female college student populations (Foubert, Brosi, & Bannon, 2011; Brosi, Foubert, Bannon, & Yandell, 2011). The purpose of the present study is to clarify how both internal and external religiosities are related to pornography use and to explore whether bystander efficacy and intent to intervene in a potential sexual assault situation is predicted by religiosity and pornography use.

Research using a variety of experimental and correlational methods has shown pornography use to be harmful to both male and female users (Kingston et al., 2009; Carroll et al., 2008). A meta-analysis found that men's use of pornography is strongly associated with acceptance of sexual violence (Hald, Malamuth, & Yuen, 2010). In addition, a comprehensive literature review of over 50 experimental studies found that men who frequently use pornography are more likely to commit rape and other forms of sexual aggression (Malamuth, Addison, & Koss, 2000).

Traditionally considered a strictly male phenomenon, the once pronounced gender gap found in pornography consumption has quickly diminished (Carroll et al., 2008; Yoder, Virdin, & Amin, 2005). Some attribute the increased use by women to widespread accessibility and greater anonymity permitted through the Internet (Fisher & Barak, 2001). Women who view pornography have been found to blame rape victims more, assign less responsibility to male perpetrators of rape, and to have stronger beliefs that they should accept sexual victimization (Davis, Norris, George, Martell, & Heiman, 2006; Norris, Davis, George, Martell, & Heiman, 2004). Notably, Bridges, Wosnitzer, Scherrer, Sun, & Liberman (2010) show that when women in popular mainstream pornographic movies experience physical aggression by a male, 95% of the time they respond with either a response of pleasure or no response at all. Given that the content of pornography today reinforces the script that women do not resist when hit during a sexual encounter (Bridges et al., 2010), it stands to reason that exposure to pornography sends the message that women enjoy physical aggression during sex. If women internalize these messages that women enjoy violence, it raises a barrier for potential intervention to help another woman who is at current risk of sexual assault (McMahon & Banyard, 2012). It also may preclude men from

helping women if they internalize the script that women enjoy being hit.

Nearly one-half of college women describe pornography viewing as an acceptable expression of sexuality, one-third now use pornography, and one-sixth describe a level of pornography use that rises to a level of an addiction (Carroll et al., 2008; Yoder, Virdin, & Amin, 2005). These trends are consistent with the efforts of the pornography industry to expand to the female audience by developing more materials with women in mind (Dines, 2011).

Research about religious involvement has shown that it is a protective factor for various maladaptive behaviors including criminal activity, drug use, and alcoholism (Geppert, Bogenschutz, & Miller, 2007). The protective nature of the relationship between religiosity and participation in a range of maladaptive behaviors is still under exploration. Meanwhile, moral development researchers and theologians have identified religiosity as contributing toward pro-social behavior and moderating the effects of harmful influences, such as pornography (Baltazar et al., 2010; Hardy & Carlo, 2005).

One way in which Christian theologians suggest that religiosity mitigates maladaptive behavior is by the complete reliance upon God rather than the self, as a behavioral guide. For example, twentieth century theologian Dietrich Bonhoeffer argued that a) only God knows the difference between right and wrong, b) people must know God, then learn what is right or wrong by relying on his grace to learn his will, and c) by relying completely on God's grace, people will be able to do His will (Bonhoeffer, 1955). Thus a pathway to good action is drawn through the grace of God by submitting to His will when God becomes known. In this case, the path can lead to avoiding pornography use.

Stack, Wasserman, and Kern (2004) indicate that in the realm of pornography usage, infrequent church attendance is one of the strongest predictors of Internet pornography use. Thus, those who attend frequently are less likely to use pornography. Other significant predictors of pornography use include being male, being in an unhappy marriage, being politically liberal, having ever committed adultery, having ever used a prostituted woman, and having a high degree of knowledge of personal computers.

An initial study involving measures of religiosity and Internet pornography found some relationships between the two variables (Abell, Steenberg & Boinin, 2006). The researchers recommended that future studies focus more specifically on intrinsic and extrinsic religiosity and that women's use should be assessed in

addition to limiting studies to men at Christian colleges as they had.

A more recent study assessed the connections between men's and women's intrinsic and extrinsic religiosity and use of Internet pornography at a conservative Christian institution (Baltazar et al., 2010). About half of their participants purposefully visited an Internet porn site in their lifetime; most of whom did so at home and late at night. Two thirds of men and one in five women did so. The most common problem participants reported from this use was worsening their relationship with God (43% of men, 20% of women) followed by a problematic increase in their own sexual behavior including masturbation and sexual intercourse (45 of men, 20% of women).

Baltazar et al. (2010) reported no significant correlation between intrinsic and extrinsic religiosity and lifetime visits to an Internet porn site. However, there was a small, significant negative correlation for men who viewed Internet porn for at least an hour in the last week and religiosity. More specifically, men's recent Internet pornography use significantly correlated with both extrinsic religiosity ($r = -.18$) and intrinsic religiosity ($r = -.13$). No such relationships existed for women's use of pornography. Analyses in the Baltazar et al. study were limited to correlation coefficients, and are limited in their generalizability to similar institutions. Given that the decision to use pornography is a complex decision, most research involving pornography now involves statistical models that more closely match that complexity (Kingston et al., 2009; Hald, Malamuth, & Yuen, 2010). The present study sought to understand the complex relationship among these and other variables through both bivariate and more complex regression methods.

Specifically, we sought to determine whether men's and women's religiosity, Internet pornography use, and motivation to use pornography would predict their bystander efficacy and willingness to intervene in a potential rape situation. We hypothesized that Internet pornography use would negatively correlate with religiosity for both men and women. Previous research at a Christian institution found small negative correlations for men and no correlations for women (Baltazar et al., 2010). With our population from a secular institution, we anticipated a greater range of religious belief among participants and predicted significant negative correlations given substantially more opportunities for students to choose to use pornography.

We also hypothesized that blocks of religiosity and pornography variables would contribute unique variance in predicting bystander willingness and efficacy

for participants in our study. We predicted these relationships based on prior research that pornography use leads to lower levels of bystander intervention (Brosi, Foubert, Bannon & Yandell, 2011; Foubert, Brosi, & Bannon, 2011) and related research that religiosity motivates pro-social behavior (Hardy & Carlo, 2005). However, the specific relationship between religiosity, pornography, and bystander intervention is unknown. Thus, we sought to address this gap in the literature.

After conducting some initial analyses to determine the factor structure of a published scale we used to measure motivation to use pornography, we computed bivariate correlations and four regressions. Two regressions were computed for men and two for women. In each regression, religious orthodoxy, extrinsic religiosity, and intrinsic religiosity were entered as a block into the regression followed by a block consisting of the factor analyzed scale of motivation to use pornography and the participant's total annual Internet pornography use score. Outcome variables for the regressions were either bystander efficacy or bystander willingness to intervene in a sexual assault situation.

Method

Participants

Participants were undergraduate and graduate students at a large midwestern public university. Of an original 262 surveys collected, 8 were discarded as the participants did not provide any data and 4 surveys were removed because they answered the same question two opposite ways during our survey. The remaining sample of participants consisted of 74 (30%) male and 173 (70%) female participants. The sample included 15 (6%) first-year students, 32 (13%) sophomore students, 77 (31%) junior students, 57 (23%) senior students, and 69 (28%) graduate students. Participants reported their race as 185 (75%) White, 25 (10%) African American, 20 (8%) Native American, 7 (3%) Hispanic/Latino, and 5 (2%) Asian/Asian American. Participants' mean age was 23.6 ($SD = 6.14$), and ages ranged from 18 to 53.

Materials

Participants completed the Religious Orientation Scale, the Bystander Efficacy Scale, the Bystander Willingness to Help Scale, the Exposure to Internet Pornography Questionnaire, the Reasons for Consuming Internet Pornography Scale, and a brief demographic questionnaire. The details of each instrument are provided in the following paragraphs.

Religious Orientation Scale. The religious orientation scale contained three subscales: Intrinsic religiosity, extrinsic religiosity, and doctrinal orthodoxy (Allport & Ross, 1967; Burris, 1999a; Burris, 1999b). Extrinsic orientation is a measure of utilitarian motives for religious behavior, such as attending church to achieve social standing in the community and to pray in order to be happy. An intrinsic orientation is characterized by living out one's religion by attending church, reading about one's faith, joining Bible study groups, and keeping one's religious beliefs central to a whole approach to life. Doctrinal orthodoxy measures the degree to which participants subscribe to specific Christian beliefs like God created the universe, that one must accept Jesus Christ as Lord and Savior to be saved from sin, and the belief that Jesus is the Messiah. Each scale contains between nine to 12 items and is measured on a 5-point Likert scale. Alpha reliability studies of the ROS Intrinsic scale have been reported in the mid .80s; the extrinsic scale in the .70s. Test-retest reliability has been reported at .84 for Intrinsic, and .78 for Extrinsic. Some evidence is reported for the validity of the intrinsic and extrinsic religiosity scale through correlations with measures of related constructs.

Bystander Efficacy Scale. Perceived ability to intervene as a bystander was measured by the bystander efficacy scale, developed by Banyard, Plante, and Moynihan (2005). This measure asks participants to indicate whether they believe that they could do each of 18 bystander behaviors and if so denote their confidence in performing this bystander behavior. Participants rate items on a scale of 1 to 100 percent, indicating their percent confidence that they believe that they know how to intervene in the scenario described. Strong criterion and construct validity data are reported by Banyard (2008). The alpha in this study was .91.

Bystander Willingness to Help Scale. The Willingness to Help Scale was developed by Banyard, Plante, and Moynihan (2005) and measures participants' degree of likelihood of engaging in 12 bystander behaviors on a 7-point scale, ranging from *not at all willing to intervene* to *very willing to intervene*. Items came from research literature and from discussions with advocates and professionals working in the field of sexual violence. Strong criterion and construct validity are reported by Banyard (2008). An alpha of .85 was found in the present study.

Exposure to Internet Pornography Questionnaire. Respondents' use of Internet pornography was

measured with the Frable, Johnson, and Kellman's (1997) Exposure to Internet Pornography Questionnaire (EIPQ). Respondents indicated how many times in the past year they had been exposed to each of 22 different items of Internet pornography. Responses were then recoded to a seven-point ordinal scale (1 = zero times; 2 = one to two times; 3 = three to five times; 4 = six to ten times; 5 = eleven to fifty times; 6 = fifty-one to one hundred times; 7 = more than 100 times). A total Internet pornography consumption score was calculated by summing the z-score transformations. An alpha of .90 was found in the present study. The design of the EIPQ included a division of items into hard-core and soft-core pornographic items. An example of a soft-core item on this scale is: "Viewed pictures featuring softcore material, such as lingerie or swimsuits?" A hardcore item is: "Seen pictures depicting heterosexual oral-genital intercourse?"

Reasons for Consuming Internet Pornography Scale (RCIP). Respondents' reasons for consuming Internet pornography was measured with Frable, Johnson, & Kellman's (1997) Reasons for Consuming Internet Pornography Scale. Respondents endorsed 17 items on a five-point scale from *strongly agree* to *strongly disagree*. Six subscales were created by summing the z-score transformations of these items. Subscales included "to make sex more interesting," "to relieve sexual tension," "to turn on a sexual partner," "for sexual thrills," "to enjoy a social event," and "to learn about sex." An alpha of .95 was found in the present study.

A factor analysis was computed in the present study for the RCIP using principal axis factoring. A single factor with an eigenvalue of 4.26 resulted, explaining 71% of the variance in motivation to use pornography. All other eigenvalues were .67 or lower. Bartlett's Test of Sphericity was computed with a Chi-square of 801.26 and 15 degrees of freedom ($p < .000$). A Kaiser-Meyer-Olkin Measure of sampling adequacy yielded a value of .881. All six subscales loaded on the extracted factor (1 = .93, 2 = .75, 3 = .79, 4 = .89, 5 = .67, 6 = .80).

An item analysis was then computed for the RCIP scale. The internal consistency of the scale as measured by Cronbach's alpha was .92. Item to total correlations ranged from .64 to .88. Alpha would remain at .92 or would drop if any subscale was removed from the overall scale, therefore all subscales were maintained for future analyses.

Missing Data. Schafer and Graham (2002) note that ipsative mean imputation (IMI) is a satisfactory

method for treating missing data. IMI can be used in situations where there are multiple items that comprise a one-dimensional scale. If a respondent has partial missing data for such a scale, then the missing items can be replaced by the mean of the respondent's non-missing items. In this study a respondent was a candidate for IMI if the missing items accounted for less than 10% of the items on a given scale.

Procedure

Participants were recruited through a human subjects pool of students who were taking courses in the College of Education during the Spring, Summer, and Fall 2011 semesters. A total of 262 surveys were collected through volunteers who signed up for course credit. The study was set up in a survey format using the online site, Survey Monkey. This company employs multiple layers of security to ensure data privacy and security, including daily independent audits of security measures, firewall, and disk redundancy. The Survey Monkey account was password protected as an additional protection; only one researcher had access to the account. Data were deleted off of the remote server after being downloaded. No personally identifying information was requested. Once data collection was complete, we downloaded responses onto a password-protected computer.

Results

Descriptive Statistics

Internet pornography use was reported by 76% of men in the last year, 61% used hardcore Internet pornography in the last year, with 56% using hardcore Internet pornography in the last month. During the

last year, 65% of the women viewed Internet pornography, 42% viewed hardcore Internet pornography, with 21% viewing hardcore Internet pornography during the last month.

Correlations

Correlation coefficients were computed for each variable. Given the gendered nature of so many of the variables in our study, we focus our comments on correlation results by gender (See Tables 1 and 2). Not surprisingly, there were moderate to high correlations between intrinsic religiosity and doctrinal orthodoxy, bystander efficacy and willingness, and reasons to use pornography and frequency of pornography use. These relationships existed for both men and women.

The more reasons men had to use pornography the more likely they were to report extrinsic religiosity ($r = .26, p < .05$), yet these variables were uncorrelated for women. A marginally significant negative correlation existed between men's intrinsic religiosity and their reasons for using pornography ($r = -.23, p = .06$). Men also had a willingness to intervene as a bystander that was negatively correlated with extrinsic religiosity ($r = -.25, p < .05$), and a marginally significant negative correlation between use of Internet pornography and intrinsic religiosity ($r = -.22, p = .06$).

Women's intrinsic religiosity was negatively correlated with their motivation to use pornography ($r = -.19, p < .05$). In addition, women's actual use of Internet pornography had a significant negative correlation with their intrinsic religiosity ($r = -.30, p < .05$). Women's use of pornography was also negatively correlated with bystander efficacy ($r = -.18, p < .05$), as was extrinsic religiosity ($r = -.15, p < .05$). Bystander efficacy was also negatively correlated with women's motivation to use pornography ($r = -.26, p < .05$).

TABLE 1

Correlations Among Variables for Women

Scales	1	2	3	4	5	6	7
1. Reasons	1	-.26*	-.10	.16	-.19*	-.18	.54*
2. Efficacy		1	.56*	-.10	-.02	-.09	-.18*
3. Willingness			1	-.05	.13	.13	-.07
4. Extrinsic				1	.03	.01	-.05
5. Intrinsic					1	.81*	-.29*
6. Orthodoxy						1	-.17*
7. Pornography							1

* = significant at the .05 level.

TABLE 2
Correlations Among Variables for Men

Scales	1	2	3	4	5	6	7
1. Reasons	1	.01	-.13	.26*	-.23 ⁺	-.10	.44*
2. Efficacy		1	.66*	.05	.12	.10	.02
3. Willingness			1	-.25*	-.05	-.01	.18
4. Extrinsic				1	.04	.03	-.07
5. Intrinsic					1	.82*	-.22 ⁺
6. Orthodoxy						1	-.09
7. Pornography							1

* = significant at the .05 level.

⁺ = $p = .06$

TABLE 3
Hierarchical Multiple Regression Analysis Predicting Bystander Efficacy for Women

Variable	β	
	Model 1	Model 2
Orthodoxy	-.43**	-.38*
Extrinsic	-.29**	-.27**
Intrinsic	.51**	.39*
Reasons		-.13
Porn Use		-.15
R	.372	.439
R^2	.138	.193
F	5.71***	5.02***
ΔR^2		.055

* = significant at the .05 level.

** = significant at the .01 level.

*** = significant at the .001 level.

Regressions

Separate regressions were computed for men and women given the gender differences in prior research on pornography use (Baltaza et al., 2010; Foubert, Brosi, & Bannon, 2011; Brosi et al., 2011). A hierarchical regression procedure was computed with women's bystander efficacy as the dependent variable. The first block of variables entered into the regression equation consisting of religious orthodoxy, extrinsic religiosity, and intrinsic religiosity. The second block of variables included motivation to use pornography and annual Internet pornography use. The first block yielded an R of .372, and an R^2 of .14, $F(3, 107) = 5.71, p < .001$.

The second block added significant predictive value to the regression equation, $F(5, 105) = 5.02, p < .000$, yielding an overall R of .439, and an R^2 of .19. Thus, religiosity and pornography variables accounted for 19% of the variance in bystander efficacy for women.

Hierarchical regressions were computed using the same blocks of variables for women's bystander willingness to intervene and for men's bystander efficacy and men's bystander willingness to intervene. These three regressions did not yield significant findings.

Finally, a t -test showed that bystander efficacy scores for men ($M = 79.5, SD = 20.9$) and women ($M = 81.0, SD = 14.5$) were statistically equivalent. Yet, the variability in scores was vastly different. In addition to the different standard deviations, the standard error of the mean was 1.1 for women, for men it was 2.4. Levine's Test for equality of variances was also significant $F(1, 244) = 8.31, p < .01$. These findings point to a lack of uniformity among men's sense of whether they believe they could be effective in intervening to prevent sexual assault. Indeed, many men report strong efficacy; others report hardly any efficacy to intervene at all.

Discussion

Our hypothesis that negative correlations would exist between Internet pornography use and religiosity for both men and women was confirmed. In both cases, a significant negative correlation between intrinsic religiosity and Internet pornography use emerged. This finding confirms prior research on men and extends the finding to women (Baltazar et al., 2010).

When examining other correlations, representing between 3 and 9% of the variance, what stands out most is their pattern rather than any individual rela-

tionship. When one examines significant correlations for men, one can see that their extrinsic religiosity is associated with higher rates of pornography use and less willingness to intervene to prevent sexual assault. On the other hand, intrinsic religiosity was associated with fewer reasons for using pornography and less frequent use of Internet pornography. One can rightfully conclude from these findings that men who go to church in the hopes of achieving social standing or making themselves happy are also more likely to be self-centered in their use of pornography, and are more likely to avoid helping someone who might be sexually assaulted. By contrast, men who attend church to live out their faith, read the Bible, and keep their religious beliefs central to their lives cite fewer reasons to view pornography and use it less frequently.

We found that women's use of pornography was associated with a lower sense of efficacy to intervene in a sexual assault situation. In addition, lower efficacy was correlated with higher extrinsic religiosity. Lower efficacy was also correlated with more reasons to consume Internet pornography. Higher intrinsic religiosity was associated with both fewer reasons to use pornography and less use of pornography. It seems from women's results that, as in the case of men, intrinsic religiosity has a protective effect for reasons to use pornography and frequency of its use. While pornography use was associated with men's willingness to intervene to prevent rape, with women, the effect was on how effective they thought they would be in various situations where a rape might occur. Thus, pornography seemed to undermine women's confidence that they could intervene in the first place. Furthermore, the deleterious effects of an extrinsic religious orientation were uncovered here as well, given its relationship with lower efficacy to intervene to help prevent a sexual assault.

We found partial support for our hypothesis that blocks of religiosity and pornography variables would predict bystander intervention. Using a multiple regression, our study found that religiosity and pornography use predicted bystander efficacy for women. Specifically, a block of religiosity measures and a block of pornography measures entered into a regression predicted 19% of the variance in how effective women believe they would be in intervening to help prevent a sexual assault. However, when regressions were computed to determine whether these blocks of variables predict whether women are willing to intervene or whether the same combinations predict the outcome variables for men, the relationships were not significant. Given the very high variability in men's bystander efficacy scores, demonstrated by a significant Levine's

test, stronger influences beyond the variables measured in this study are likely affecting men's bystander efficacy. Some men seem extremely prepared to intervene; others indicate low efficacy. Exploring this relationship in future research is a promising area for generating new knowledge. For example, a study might look into the qualitative differences between men who feel they are effective at intervening and those who do not.

When examining bivariate correlations, results suggest that intrinsic religiosity has a small but significant weakening effect on the impulse to use pornography, while extrinsic religiosity is associated with slightly greater use for both men and women. With women, results suggest that there is something about their use of pornography and how that intersects with their religiosity that may inhibit their ability to believe that they know what to do to intervene in a sexual assault situation more so than their peers. This effect could be because the pornography they have viewed so often combines both sex and aggression where women react with pleasure or not at all (Bridges et al., 2010). Women's confidence in their ability to identify what is rape and whether they could intervene is likely affected by repeated exposure to Internet pornography. Such exposure appears to alter women's understanding of how to intervene in situations that could turn into rape—perhaps simply because of the blurred boundary resulting from the inclusion of violence in sexual acts they view. Future research should clarify the precise role that watching pornography has on these women and should explore how religiosity might mitigate the impact on bystander efficacy. One might also consider how altruism, a construct often related to religiosity and spirituality, intersects with bystander efficacy and pornography.

On a bivariate level, it is noteworthy that men who conceptualize religion as a means of achieving social status and using it to make them happy are also less willing to intervene to prevent a sexual assault. When studying religiosity variables on a more complex level through regression, we note that the lack of predictive significance of blocks of religiosity and pornography use variables for men's willingness, and particularly their bystander efficacy may have been due to the extremely wide variability in men's bystander efficacy scores. There are clearly some men who are confident in their effectiveness to intervene to prevent rape and some who are not. In this study, their religiosity, motivation and frequency of use of Internet pornography did not appear related to their bystander efficacy.

Our results had key differences when compared to a recent study about religiosity and Internet pornogra-

phy use among students at a conservative Christian campus (Baltazar et al., 2010). For men, both studies found small negative correlations between intrinsic religiosity and a measure of recent frequency of pornography use. However, Baltazar et al. also found pornography use to have a weak, negative correlation with men's extrinsic religiosity; the present study found no such relationship. For women, the present study found that use of Internet pornography was negatively correlated with their intrinsic religiosity. No such relationship was found with the participants in Baltazar et al.'s (2010) study. It appears that institution type has an important impact on the variables we measured.

A compelling question for future research would be to isolate the environmental influences of a conservative Christian campus relative to a public institution and the specific influential religious beliefs of students at either location in order to determine what variables have the greatest impact on pornography use, bystander intervention, and a variety of other outcomes. A critical environmental difference between institutions is the use of pornography filters on every computer on campus and concurrent policies and social mores that strongly discourage pornography use at the institution studied by Baltazar et al. (2010). In the present study, students can access pornography as they see fit unencumbered by policies against its viewing and in a postmodern university culture (Arnold, 2010; Bloland, 2005) that does not discourage its use and in many cases encourages its use as socially acceptable (Brickell, 2012). In addition, there may have been under reporting of pornography use in the Baltazar et al. (2010) study given that use was a code of conduct violation on that campus.

Our study began to uncover the specifics of religiosity variables that are associated with pornography use and its related behaviors, such as intervening to help someone who might be sexually assaulted. Given that the variance we accounted for was under 10%, there are clearly other variables that account for why people use pornography. As of this writing there is scant literature on what motivates people to use pornography, aside from a very limited number of studies that have begun to investigate the reasons people use pornography (Frale, Johnson, & Kellman, 1997; Stack, Wasserman, & Kern, 2004). Initial research findings suggest that people who use pornography likely attend church less frequently, are male, are liberal, and have committed adultery (Stack, Wasserman, & Kern, 2004). However, one would not have to work too hard to discover many exceptions to these generalizations. Research on what results from the use of pornography is plentiful and im-

portant (Davis et al., 2006; Hald, Malamuth, & Yuen, 2010; Kingston et al., 2009). If the harms of pornography are to be fully understood and combatted on college campuses, in society, and in the Church, more research is needed to better understand why both men and women are using pornography so that educators, clinicians, clergy, and researchers can do a better job of addressing its root causes.

Limitations

This study was limited by the nature of the sample we studied. Participants volunteered to participate in an online survey through a research participation system for course credit. All participants were taking undergraduate or graduate classes in a College of Education. Though students took many electives outside of the College of Education, the entire university population was not eligible for participation. Given that we used participants from a College of Education subject pool, it is not surprising that we had more women than men in our study. Thus, our design had more power for women than it did for men. This limitation should be taken into consideration. The study was also limited in that self-report measures were used. Participants may not have wished to reveal such personal information as their religious beliefs and use of pornography through an online computer system, despite assurances of anonymity.

The study is limited given that 75% of participants were Caucasian, caution should be exercised in generalizing these results to a population that is not White. The population for this study is also highly educated, with more than half having three or more years of higher education; thus it has limited generalizability to those with only a high school education or less. One must also keep in mind the use of Ipsative Mean Imputation for missing data for our surveys.

Future Research

Future research that examines pornography use on Christian college campuses should take extra measures to insure that participant responses are both confidential and anonymous. One way to do this would be to have a researcher from outside the institution collect the data with assurances from inside the institution to its students that data will not be used only by the researcher and will not be available to the university.

Now that intrinsic and extrinsic religiosities and its relationship to use of pornography has been studied at a religious and secular institution separately, it would be a worthwhile for future research to study these variables in the same study including populations from

Christian colleges and secular institutions. Such a sample would allow for direct comparisons between these populations, and would allow researchers to tease out the environmental impact of attending a Christian institution from the mere fact of having a Christian identity and attending either a religious or secular institution.

We also suggest that future research explore the tremendous variability we found in men's bystander efficacy scores. This variability may have impeded our efforts to determine how religiosity relates to men's bystander efficacy. At a minimum, the wide range in scores calls for further exploration.

Conclusion

Ultimately we found that a pattern of bivariate correlations emerged such that extrinsic religiosity is often associated with more Internet pornography use and that intrinsic religiosity is associated with less use. This pattern points to the critical nature of not just being involved in religious activity but why one is religiously engaged. We also found that both religiosity and pornography use are unique predictors of bystander efficacy in women. That they were not for men may well be due to such high levels of pornography use among men. It is clear that exploring the role of religiosity in pornography use and in the related area of sexual violence is a promising area for further investigation.

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