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DIFFERENCES IN MENTAL HEALTH AND SEXUAL OUTCOMES BASED ON TYPE OF NONCONSENSUAL SEXUAL PENETRATION

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Abstract

Little is known based on the stratification and localization of penetration type of rape: oral, vaginal, and/or anal. The current study examined associations between type of rape and mental and sexual health symptoms in 865 community women. All penetration types were positively associated with negative mental and sexual health symptoms. Oral and/or anal rape accounted for additional variance in anxiety, depression, some trauma-related symptoms, and dysfunctional sexual behavior than the association with vaginal rape alone. Findings suggest that penetration type can be an important facet of a rape experience and may be useful to assess in research and clinical settings.

Keywords

rape; sexual health; mental health

Rape, or nonconsensual sexual penetration, is prevalent among women with rates between 13% and 25% (Rozee & Koss, 2001; Plichta & Falik, 2001). Outcomes of rape can include serious negative mental health consequences including symptoms of depression and posttraumatic stress; and sexual health outcomes including problems with sexual functioning (e.g., Ullman, 2007). However, little is known empirically about whether different types of nonconsensual penetration – oral, vaginal, and/or anal – are associated with mental and sexual health outcomes. Instead, sexual assault research has generally included all types of nonconsensual penetration under the same umbrella term: rape. This creates a knowledge gap limiting our capacity to comprehensively describe any systematic correspondence

between assault topography and victim sequelae, particularly mental and sexual health outcomes. The current study addresses this knowledge gap by examining the differential associations between mental and sexual health and the different types of penetration experienced in rape. Elucidating variations in health outcomes based on penetration type has potentially important clinical implications for managing victim recovery.

Defining Rape

Historically, rape definitions only included vaginal rape, omitting nonconsensual oral and anal rape. For instance, in 1927, the Federal Bureau of Investigation (FBI) defined rape as including only the male penile penetration of a female vagina and forcible rape (U.S. Department of Justice, 2012). After nearly a century, on January 1, 2013, the revised definition of rape was introduced to include “penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim” (FBI, 2013). The expanded definition has important implications for legal proceedings, rape prevalence reporting, research investigations, and clinical interventions and prevention programming.

Although the FBI definition of rape has been only recently updated to acknowledge the range of sexual behaviors involved, research on rape has included oral and anal penetration in its definition for decades (Koss, Gidycz, & Wisniewski, 1987; Tjaden & Thoennes, 1998). Despite the inclusion of the three different types of penetration in the assessments of nonconsensual sexual experiences (Koss & Gidycz, 1985), specification of penetration type has not commonly been considered in research examining rape prevalence, predictors, correlates, and outcomes. To our knowledge, only one study considered penetration type. Epstein, Saunders, & Kilpatrick, (1997) investigated differential effects on PTSD symptoms based on type of penetration in childhood sexual abuse. No research to date has examined this among women who have experienced adolescent or adult rape. In light of the recently expanded FBI definition of rape combined with the knowledge gaps about potential differential outcomes, research on the association between penetration types and mental and sexual health outcomes is more than warranted at this juncture.

An important caveat is that rape of any type constitutes a crime and a distressing experience; thus, conduct of this research cannot be construed as minimizing any such experiences, regardless of penetration type. However, given the dearth of research, it is essential to explore the possibility that there are varying mental and sexual health outcomes that are associated with type of nonconsensual sexual penetration.

Mental and Sexual Health

Previous research on rape – with penetration type unspecified – indicates that important mental health outcomes to consider are depression, anxiety, and posttraumatic stress symptoms. Generally, women with a history of rape report higher symptomology in these domains than those without such histories (e.g., Kilpatrick, Edmunds & Seymour, 1992; Rothbaum, Foa, & Riggs, 1992; Ullman et al., 2007). In light of the aforementioned knowledge gaps, it is unclear what differences may exist based on penetration type. Epstein

et al. (1997) examined penetration types in childhood and found that anal and oral rape were associated with more traumatic stress symptomology than vaginal rape. Therefore, it would be expected that a similar finding could exist among differential types of adolescent/adult rape.

There are also differential short-term and long-term sexual health outcomes based on type of penetration in regards to sexually transmitted infection risk, sexual injuries, bodily injury and pregnancy. Previous literature indicates that anal penetration results in higher sexually transmitted infection risk than vaginal and oral penetration, and vaginal penetration results in higher risk than oral penetration in regards to sexually transmitted infections (Bowyer & Dalton, 1997; Hilden, Schei, & Sidenius, 2005). Additionally, genitoanal injuries differ based on penetration type. For instance, vaginal injuries from rape frequently consist of minor tears, bruises, scratches, and grazes (Bowyer & Dalton, 1997). While anal rape consists of similar injuries, the injuries are much more common and more severe (Bowyer & Dalton, 1997). In Hilden, Schei, and Sidenius's (2005) study, anal rape victims experienced genitoanal injury over half of the time (53%). However, only 31% of vaginal rape victims in the same study experienced genitoanal injury. Oral rape was not examined. Anal rape has been suggested to be more violent than any other type of rape (Dietz, Hazelwood, & Warren, 1990) and one study found that two thirds (67%) of the anal rape victims had also been beaten during the rape while 28% of vaginal rape victims experienced similar violence during their rape (Neuwirth & Eher, 2003). Thus, it is possible that anal rape, whether it includes other forms of penetration or not, is a qualitatively different experience than rape without anal penetration. Sugar, Fine, & Eckert (2004) looked at the differences in physical injury for oral, anal, and vaginal rape. The results of their study showed that use of a weapon resulted in greater general bodily injury for women who experienced oral and/or anal rape. General bodily injury occurred more than twice as often (52%) as genitoanal injury (20%) and was strongly and independently associated with assaults that included oral and/or anal penetration (Sugar, Fine, & Eckert, 2004). Although there is research on sexually transmitted infection risk and injuries associated with penetration types, there is no current research examining the associations between nonconsensual penetrative types on sexual health outcomes including negative effect on sex life, sexual concerns, and dysfunctional sexual behavior.

Current Study

The present study examines associations between three types of penetrative rape (i.e., vaginal, oral and anal) and mental health and sexual health symptoms. Consistent with previous research on women with a history of childhood sexual abuse suggesting that anal and oral rape are associated with a higher likelihood of posttraumatic symptoms (Epstein et al., 1997), it is expected that women with anal- or oral- rape histories will have more negative mental and sexual health consequences compared to those without such histories in adolescence/adulthood. It is also hypothesized that women with a vaginal rape history will have more negative mental and sexual health consequences compared to those without such histories. The consequences assessed were anxiety, depression, posttraumatic symptoms (intrusive experiences and defensive avoidance), negative effects on sex life, sexual concerns, and dysfunctional sexual behavior.

METHODS

Participants

A total of 888 women participated in the study. Participants were recruited through online and physical advertisements in an urban community to participate in a larger study on male-female social interactions and were screened over the phone for eligibility. Data for the current study were taken from a cross-sectional survey portion of the study. To participate in the study, individuals needed to (a) be female, (b) be between the ages of 21 and 30, (c) report heavy episodic drinking and sexual risk activity, (d) and report no problem drinking and no medical contraindications to consuming alcohol. Out of the 888 potential participants, 4 participants decided to discontinue prior to completing the protocol, 1 participants' data was lost due to a power outage, and 7 participants did not have valid data for the larger study (failed study manipulation checks or were given incorrect experimental procedures). Additionally, for the current study participants were excluded if they did not respond to questionnaires regarding sexual assault history (11 participants), yielding a total of 865 participants.

The women were ages 21–30 ($M = 24.79$, $SD = 2.68$) years. The majority of the sample self-identified as Caucasian (68.1%), whereas 7.6% self-identified as African American/Black, 6.4% as Asian/Pacific Islander, .8% as Native American/Alaska Native, and 16% as Multiracial or other. Employment was reported by 56.8%, and most of the women (81.4%) had at least some college education or higher. Full- or part-time student status was reported by 35.6%, and the majority (73.5%) reported a yearly income of \$40,999 or below. On average, participants consumed 13.38 drinks per week ($SD = 8.49$).

Measures

Adolescent/Adult Rape Experiences—To assess types of penetrative rape experiences in adolescence/adulthood, participants completed the revised Sexual Experiences Survey (SES-R; Koss et al., 2007). The SES-R is a behaviorally specific assessment of sexual assault experiences and includes experiences perpetrated by verbal coercion (“Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn’t want to” or “Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn’t want to”), incapacitation (“Taking advantage of me when I was too drunk or out of it to stop what was happening”), threats of physical force (“Threatening to physically harm me or someone close to me”), and physical force (“Using force, for example holding me down with their body weight, pinning my arms, or having a weapon”). For the purpose of this study, we examined experiences of nonconsensual oral penetration (“Someone had oral sex with me or made me have oral sex with them without my consent...”) dichotomized into yes (1) or no (0), nonconsensual vaginal penetration dichotomized (“A man put his penis into my vagina, or someone inserted fingers or objects without my consent...”) into yes (1) or no (0), and nonconsensual anal penetration (“A man put his penis into my butt, or someone inserted fingers or objects without my consent...”) dichotomized into yes (1) or no (0). Categories were not mutually exclusive (i.e., women could have experienced multiple types of rape).

Mental Health Measures

Anxiety symptoms: The Brief Symptom Inventory, (BSI; Asner-Self, Schreiber, & Marotta, 2006; BSI-18, Derogatis, 2001) was used to measure anxiety symptoms in the last seven days. Participants were asked to indicate whether they experienced “nervousness/shakiness” and “spells of terror/panic,” among other symptoms. Answer choices ranged on a 5 point scale (1 = *not at all*; 2 = *a little bit*; 3 = *moderately*; 4 = *quite a bit*; and 5 = *extremely*. Inter-item reliability was excellent (α = .86).

Depressive symptoms: The Brief Symptom Inventory, (BSI; Asner-Self, Schreiber, & Marotta, 2006; Derogatis, 2001) was used to measure depression symptoms in the last seven days. Participants were asked whether they were “feeling lonely” and “hopeless about the future,” among other symptoms. Answer choices ranged on a 5 point scale (1 = *not at all*; 2 = *a little bit*; 3 = *moderately*; 4 = *quite a bit*; and 5 = *extremely*. Inter-item reliability was excellent (α = .81).

Intrusive Experiences: The intrusive experiences subscale of the Trauma Symptom Inventory (TSI; Briere, 1995) was used to measure intrusive trauma symptoms experienced within the last six months. Participants were asked whether they had intrusive experiences including “flashbacks” and “nightmares/bad dreams,” among other symptoms. Answer choices ranged on a 3-point scale (1 = *never*; 3 = *often*). Inter-item reliability was excellent (α = .87).

Defensive Avoidance: The defensive avoidance subscale of the Trauma Symptom Inventory (TSI; Briere, 1995) was used to measure avoidance-related trauma symptoms experienced within the last six months. Participants were asked if they had experienced defensive avoidance including “pushing painful memories out” and “staying away from people/ places,” among other symptoms. Answer choices ranged on a 3-point scale (1 = *never*; 3 = *often*). Inter-item reliability was excellent (α = .90).

Sexual Health Measures

Sexual Concerns: The sexual concerns subscale of the Trauma Symptom Inventory (TSI; Briere, 1995) was used to measure concerns about sexual activity experienced within the last six months. Participants were asked whether they had any sexual concerns including experiencing “confusing feelings about sex” and “problems in sex relations,” among other concerns. Answer choices ranged on a 3-point scale (1 = *never*; 3 = *often*). Inter-item reliability was excellent (α = .82).

Dysfunctional Sexual Behavior: The dysfunctional sexual behavior subscale of the Trauma Symptom Inventory (TSI; Briere, 1995) was used to measure dysfunctional sexual behavior experienced within the last six months. Participants were asked whether they had experienced dysfunctional sexual behavior including having “sex to feel powerful/ important” and “sex to get love/attention,” among other behaviors. Answer choices ranged on a 3-point scale (1 = *never*; 3 = *often*). Inter-item reliability was excellent (α = .83).

Negative Effects on Sex Life: Participants were asked whether, overall, they had experienced negative effects on their sex life as a result of their sexual assault experience. Answer choices ranged on a 7 point scale (1 = *have not negatively affected my sexual relationships* and 7 = *have negatively affected my sexual relationships a lot*).

RESULTS

Descriptive statistics and correlations among mental and sexual health variables are shown in Table 1. A series of regression models was used to examine mental (see Table 2) and sexual (see Table 3) health outcomes based on the location of penetration during nonconsensual sex (oral, vaginal, and anal). For each regression, vaginal sex was entered in the first step, oral sex in the second step, and anal sex in the third step. This order was chosen to determine if oral and/or anal sex accounted for the variance in the outcome beyond variance accounted for by vaginal sex.

A total of 109 (12.6%) women experienced anal rape, 416 (48.1%) experienced vaginal rape, 318 (36.8%) experienced oral rape, and 368 (42.5%) experienced no types of rape. Two hundred and fifteen (24.9%) of women experienced one type of rape, 218 (25.2%) experienced two types, and 64 (7.4%) experienced all three types.

Mental Health

Four separate regressions were conducted to assess the association between penetration type and mental health outcomes (see Table 2). The first examined anxiety symptoms as an outcome. Vaginal rape was significantly associated with anxiety symptoms at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change with oral rape being significantly associated with anxiety and vaginal rape no longer being associated with anxiety symptoms. Adding anal rape to the model in Step 3 yielded a significant R^2 change with anal rape being significantly associated with anxiety and oral and vaginal rape no longer being associated with anxiety symptoms.

The second regression examined depressive symptoms. Vaginal rape was significantly associated with depressive symptoms at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change but neither oral nor vaginal rape was significantly associated with depressive symptoms. Adding anal rape to the model in Step 3 yielded a significant R^2 change with anal and oral rape being significantly associated with depressive symptoms, but vaginal rape was not significantly associated with depressive symptoms.

The third regression examined intrusive experiences. Vaginal rape was significantly associated with intrusive experiences at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change with both oral and vaginal rape being significantly associated with intrusive experiences. Adding anal rape to the model in Step 3 yielded a significant R^2 change with vaginal and anal rape being significantly associated with intrusive experiences but oral rape no longer being associated with intrusive experiences.

The fourth regression examined defensive avoidance. Vaginal rape was significantly associated with defensive avoidance at Step 1. Adding oral rape to the model in Step 2

yielded a significant R^2 change with oral rape being significantly associated with defensive avoidance but vaginal rape was no longer associated with defensive avoidance. Adding anal rape in Step 3 yielded a significant R^2 change with both oral and anal rape being significantly associated with defensive avoidance and vaginal rape no longer being significantly associated with defensive avoidance.

Sexual Health

Four separate regressions were conducted to assess the association between penetration type and sexual health outcomes (see Table 3). The first regression examined associations with negative effects on sex life. Vaginal rape was significantly associated with negative effects on sex life at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change with both vaginal and oral rape being significantly associated with negative effects on sex life. Adding anal rape in Step 3 yielded a significant R^2 change with vaginal, oral, and anal rape being significantly associated with negative effects on sex life.

The second regression examined sexual concerns. Vaginal rape was significantly associated with sexual concerns at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change with vaginal and oral rape being significantly associated with sexual concerns. Adding anal rape to the model in Step 3 yielded a significant R^2 change with vaginal, oral, and anal rape being significantly associated with sexual concerns.

The third regression examined dysfunctional sexual behavior. Vaginal rape was significantly associated with dysfunctional sexual behavior at Step 1. Adding oral rape to the model in Step 2 yielded a significant R^2 change with vaginal and oral rape being significantly associated with dysfunctional sexual behavior. Adding anal rape to the model in Step 3 yielded a significant R^2 change with oral and anal rape being significantly associated with dysfunctional sexual behavior and vaginal rape being no longer significantly associated with dysfunctional sexual behavior.

DISCUSSION

To our knowledge, this is the first study examining oral, anal, and vaginal penetration as distinct experiences of rape for adolescent and/or adult sexual assault. Results indicated that women who had experienced vaginal rape also reported worse mental and sexual health outcomes than did those without vaginal rape histories. Additionally, hierarchical regressions suggest that the association between vaginal rape and worsened symptomology was often weakened when including anal and oral rape, suggesting that different types of penetration are an important area to examine when looking at mental and sexual health symptoms associated with rape. Previous research has examined all penetrative types together as an experience of rape; however, the results from the current study indicate that there is additional variance accounted for by anal rape in mental and sexual health outcomes than when just assessing vaginal rape alone.

When examined alone, vaginal rape was positively associated with anxiety symptoms, depressive symptoms, intrusive experiences, defensive avoidance, negative effects on sex life, sexual concerns, and dysfunctional sexual behavior. However, consistent with findings

on childhood sexual abuse (Epstein, Saunders & Kilpatrick, 1997), inclusion of non-vaginal rape experiences accounted for additional variance in sequelae. Individuals who experienced oral rape reported higher anxiety symptoms, intrusive experiences, defensive avoidance, negative effects on sex life, sexual concerns, and dysfunctional behavior compared to those who did not have a history of oral rape. Additionally, the inclusion of oral rape to the hierarchical regression yielded a significant change for all outcomes examined. Interestingly, the addition of oral rape to the association between vaginal rape and depressive symptoms reduced the effect of vaginal rape on anxiety and depressive symptoms and the association was no longer significant.

Overall, oral rape was associated with negative mental and sexual health outcomes compared to no history of oral rape. Previous research examining those with a history of childhood sexual abuse (Epstein, Saunders & Kilpatrick, 1997) found that oral childhood sexual abuse was associated with the development of traumatic stress symptoms, and our findings suggest that adolescent/adult oral rape is associated with posttraumatic symptoms including both intrusive experiences and defensive avoidance symptoms. Understanding why oral rape is associated with negative mental and sexual health outcomes beyond the association between vaginal rape and associated symptomology is challenging. One possible explanation is that oral sex is not always defined as “sex” (Sanders & Reinisch, 1999). Because oral sex is not always labeled as sex, nonconsensual oral sex may also not be labeled rape. Additionally, if oral sex is not considered “sex” by many, it is possible that victims may feel that their experiences cannot be validly classified as rape and thus will not be taken seriously by the larger community. Social support is vital to the healing process and may play a role in psychological adjustment. Therefore, it is possible that victims may not feel validated and supported after their oral rape experiences.

An examination of the associations between anal rape beyond those of oral and vaginal rape indicated that anal rape was significantly associated with all examined outcomes including anxiety symptoms, depressive symptoms, intrusive experiences, defensive avoidance, negative effects on sex life, sexual concerns, and dysfunctional sexual behavior. Anal rape accounted for more of the variance than vaginal rape, yielding a nonsignificant association with vaginal rape, among defensive avoidance and dysfunctional sexual behavior. Anal penetration may result in worse post-rape sequelae for a variety of reasons. One potential explanation may be related to the finding that nearly half of women who engage in consensual anal sex report negative experiences (Rogala & Tydén, 2003). In a recent nationally representative sample, it was found that 72% of women reported pain during anal sex (Herbenick, Schick, Sanders, Reece, & Fortenberry, 2015). If consensual anal sex is regarded as a negative experience for many women (although certainly not the case for many consenting women), it is not surprising that anal rape is associated with more negative outcomes than other nonconsensual penetration experiences.

Additionally, anal sex is further stigmatized given that it is considered outside the realm of “acceptable” sex in some populations, perhaps resulting in less social support for victims of anal rape (Ullman et al., 2007). As a result, victims of anal sex may face challenging cultural barriers, which may exacerbate adverse health outcomes. In contrast to other modes of penetration, anal penetration is often depicted as aggressive and violent in pornography. It is

possible that this is emulated in nonconsensual contexts leaving victims to feel humiliation. Additionally, anal sex may be associated with more negative health outcomes due to the risk of injury that is associated with anal sex. Previous research highlights that anal sex practices, whether consensual or non-consensual, may be riskier for transmission of STIs or physical injury than other penetrative types. Further, anal rape is associated with more violence than vaginal or oral rape, which may result in an increase in negative mental and sexual health outcomes (Anderson & Swainson, 2001). Alternatively, because anal rape may be considered to be more deviant, it is possible that a woman who has experienced that particular type of sexual victimization may be given more social support than those who have experienced “less extreme” forms of sexual victimization.

It is interesting that the associations between vaginal rape and some negative mental and sexual health symptomology were nonsignificant after accounting for oral and/or anal rape. Compared to other penetrative types, this sexual behavior, when consensual, potentially has the least stigma attached to it and is considered within the realm of “normal” sexuality. Thus, it is possible that when victims are vaginally raped, they are able to classify their assault and reach extant networks of support. The definition of rape has only recently been changed to include other penetrative types and thus, vaginal is the penetration type most often associated with rape. It is possible that individuals interpret most health messages to relate to vaginal penetration since information on it is more widespread. This is not to say that vaginal rape is not associated with negative mental and sexual health symptoms; in fact, we found that when examined by itself these associations were significant. However, our exploratory analyses indicate that it is important to understand all penetrative types and to understand that any type or a variety of penetrative types may be employed during rape, potentially leading to differential outcomes.

LIMITATIONS AND FUTURE RESEARCH

There are several limitations to the current study. First, our analyses do not allow for the examination of understanding if the different penetrative types of rape occurred on one occasion or on multiple occasions. Descriptive analyses indicate that number of penetrative types was variable with approximately one-fourth of women experiencing one type of rape and one-third experiencing more than one type of rape. This was primarily an issue of the limitations of the assessment tool for sexual assault. For example, if a victim experiences both anal and vaginal rape during a single event, it may result in different mental and sexual health outcomes than those of a victim who experienced an anal rape, and then three months later, experienced an oral rape. If this distinction is made during assessment, it would be possible to determine more accurately the mental and sexual health outcomes related to multiple penetration types. Therefore, more precise assessment tools should be developed to better understand re-victimization.

This study did not assess mental and sexual health outcomes based on genitoanal injury for each penetration type. It is possible that genitoanal injury plays a role in the relationships between penetration type and health outcomes, and future research should examine this as a potential mechanism through which rape affects mental and sexual health symptoms. Additionally, to the extent that injuries involved in rape may differ based on the perpetrator,

perpetrator intentions may result in different experiences and thus health outcomes for victims. It is important to note that varying mental and sexual health outcomes may be influenced by the relationship between the victim and perpetrator (e.g., stranger vs. partner) and future research should examine relationship to perpetrator and related outcomes. Finally, the data from this study were cross-sectional. Therefore, temporal ordering of events cannot be determined with absolute certainty and it is possible that the mental and sexual health concerns preceded the sexual victimization experiences. Future research should examine different penetrative types within a prospective design.

CONCLUSION

Distinguishing the mental and sexual health outcomes based on penetration type is important for further understanding experiences of rape victims. As prior research has indicated, penetration types vary in physical injury rates, stigma, and invasiveness, and thus, potentially varying mental and sexual health outcomes. It is possible that differences based on type of penetration could be influenced by social responses and/or physical harm during the rape, and future research should examine these possibilities. The findings from the current exploratory study show a glimpse of the mental and sexual health outcomes associated with each type of rape, which can help guide future research to additional significant findings on this topic. Clinicians could use this information to help provide the best care and treatment methods to victims of oral, vaginal, and anal rape by encouraging clinicians to assess penetrative type.

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Biographies

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Hanna T. Pinsky is graduating the University of Massachusetts, Amherst in the fall of 2015 with a dual degree in Psychology and Public Health. She has a passion for research and hopes to pursue an advanced degree. Her research interests are in the field of clinical psychology and sexual health. She has worked as a research assistant on a randomized control trial investigating sexual assault risk and alcohol use reduction intervention, as well as a member of a social psychology lab investigating implicit stereotypes and prejudices. She has worked with veteran and prison populations.

Molly E. Shepard

Molly Shepard is currently a clinical psychology doctoral student at Palo Alto University in California. Her research interests are in the field of forensic psychology and criminal justice. Specifically, she is interested in the treatment of Sexually Violent Predators and psychopaths. She is currently a research assistant on two studies looking at police training

and Post-Traumatic Stress Disorder malingering. She was previously a research assistant on a randomized control trial investigating sexual assault risk and alcohol use reduction intervention. She has also served on the domestic violence Victim Support Team through the Seattle Police Department.

Elizabeth R. Bird

Elizabeth R. Bird is a clinical psychology doctoral student at the University of Washington. Her research focuses on women's sexual health with a focus on sexual victimization and sequelae including the unique and combined experiences of alcohol use problems and sexual difficulties.

Amanda K. Gilmore

Amanda Gilmore received her M.S. and Ph.D. in Clinical Psychology from the University of Washington and completed her pre-doctoral internship in Clinical Psychology at the VA Puget Sound Health Care System, Seattle Division. She is currently a postdoctoral fellow at the National Crime Victims Research and Treatment Center at the Medical University of South Carolina. Her research interests focus on the etiology and reduction/prevention of sexual assault and sexual health problems related to substance use.

Jeannette Norris

Jeanette Norris, Ph.D. is a senior research scientist at the University of Washington Alcohol and Drug Abuse Institute. She has conducted NIH-funded research on alcohol and women's issues for more than 25 years. Her current research interests include relationships among alcohol consumption and child sexual abuse, adult sexual assault victimization and perpetration, and consensual sexual decision making. Dr. Norris conducts both experimental and survey research and is interested in alcohol's learned expectancy and pharmacological effects.

Kelly Cue Davis

Kelly Cue Davis, PhD is a Research Associate Professor in the School of Social Work at the University of Washington. Her research utilizes mixed methods approaches to investigate the roles of alcohol and other drugs in sexual aggression, sexual victimization, and sexual risk in young adults.

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William H. George, Ph.D. is a Professor of Psychology, and Adjunct Professor of American Ethnic Studies at the University of Washington. His research focuses mainly on understanding the role of alcohol, cultural factors and victimization history on sexuality: sexual perception and disinhibition, sexual coercion and assault, HIV-related sexual risk-taking. Much of Dr. George's research and that of his students has been funded the National Institute of Alcohol Abuse and Alcoholism.

References

- Anderson I, Swainson V. Perceived motivation for rape: Gender differences in beliefs about female and male rape. *Current Research In Social Psychology*. 2001; 6(8):107–123.
- Asner-Self KK, Schreiber JB, Marotta SA. A cross-cultural analysis of the brief symptom inventory-18. *Cultural Diversity and Ethnic Minority Psychology*. 2006; 12:367–375. DOI: 10.1037/1099-9809.12.2.367 [PubMed: 16719583]
- Briere J. Trauma Symptom Inventory: Profession Manual. PAR: Psychological Assessment Resources, Inc; Lutz, FL: 1995.
- Bowyer L, Dalton ME. Female victims of rape and their genital injuries. *British Journal of Obstetrics and Gynaecology*. 1997; 104:617–620.
- Derogatis LR. Brief Symptom Inventory 18: Administration, scoring and procedures manual. Minneapolis, MN: NCS Pearson Inc; 2001.
- Dietz PE, Hazelwood RR, Warren J. The sexually sadistic criminal and his offenses. *Bulletin of the American Academy of Psychiatry & the Law*. 1990; 18:163–178. [PubMed: 2372577]
- Epstein JN, Saunders BE, Kilpatrick DG. Predicting PTSD in women with a history of childhood rape. *Journal of Traumatic Stress*. 1997; 10(4):573–588. DOI: 10.1023/A:1024841718677 [PubMed: 9391942]
- Herbenick D, Schick V, Sanders SA, Reece M, Fortenberry JD. Pain experienced during vaginal and anal intercourse with other- sex partners: Findings from a nationally representative probability study in the United States. *Journal of Sexual Medicine*. 2015; 12:1040–1051. DOI: 10.1111/jsm.12841 [PubMed: 25648245]
- Hilden M, Schei B, Sidenius K. Genitoanal injury in adult female victims of sexual assault. *Forensic Science International*. 2005; 154(2/3):200–205. DOI: 10.1016/j.forsciint.2004.10.010 [PubMed: 16182966]
- Kilpatrick DG, Edmunds CN, Seymour AK. Rape in America: A report to the nation. Vol. 41. Arlington, VA: National Victim Center; 1992.
- Koss MP, Abbey A, Campbell R, Cook S, Norris J, Testa M, ... White J. Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology Of Women Quarterly*. 2007; 31(4):357–370. DOI: 10.1111/j.1471-6402.2007.00385.x
- Koss MP, Gidycz CA, Wisniewski N. The scope of rape: incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *Journal of Consulting & Clinical Psychology*. 1987; 55:162–170. [PubMed: 3494755]
- Koss MP, Gidycz CA. Sexual experiences survey: Reliability and validity. *Journal of Consulting and Clinical Psychology*. 1985; 53(3):422–423. DOI: 10.1037/0022-006X.53.3.422 [PubMed: 3874219]
- Neuwirth W, Eher R. What Differentiates Anal Rapists From Vaginal Rapists? *International Journal Of Offender Therapy & Comparative Criminology*. 2003; 47(4):482–488. [PubMed: 12971187]
- Plichta S, Falik M. Prevalence of violence and its implications for women's health. *Women's Health Issues*. 2001; 11(3):244–258. [PubMed: 11336864]
- Rogala C, Tydén T. Does pornography influence young women's sexual behavior? *Women's Health Issues*. 2003; 13(1):39–43. DOI: 10.1016/S1049-3867(02)00174-3 [PubMed: 12598058]
- Rothbaum B, Foa EB, Riggs DS, Murdock T, Walsh W, Rothbaum BO, ... Walsh WW. Posttraumatic Stress Disorder Diagnosis and Severity. *Journal Of Traumatic Stress*. 1992; 5:455–475.
- Rozee PD, Koss MP. Rape: a century of resistance. *Psychology of Women Quarterly*. 2001; 25(4):295–311.
- Sanders SA, Reinisch JM. Would you say you “had sex” if.... *Journal of the American Medical Association*. 1999; 281(3):275–277. DOI: 10.1001/jama.281.3.275 [PubMed: 9918484]
- Sugar NF, Fine DN, Eckert LO. Physical injury after sexual assault: Findings of a large case series. *American Journal of Obstetrics and Gynecology*. 2004; 190:71–6. [PubMed: 14749638]
- Tjaden P, Thoennes N. Department of Justice, W. e., & Centers for Disease Control and Prevention (DHHS/PHS), A. A. Prevalence, Incidence, and Consequences of Violence against Women: Findings from the National Violence against Women Survey. *Research in Brief*. 1998

- Ullman SE, Filipas HH, Townsend SM, Starzynski LL. Psychosocial correlates of PTSD symptom severity in sexual assault survivors. *Journal Of Traumatic Stress*. 2007; 20(5):821–831. DOI: 10.1002/jts.20290 [PubMed: 17955534]
- U.S. Department of Justice. Attorney General Eric Holder Announces Revisions to the Uniform Crime Report's Definition of Rape: Data Reported on Rape Will Better Reflect State Criminal Codes, Victim Experiences. National Press Releases. 2012. Jan 6, Retrieved from <http://www.fbi.gov/news/pressrel/press-releases/attorney-general-eric-holder-announces-revisions-to-the-uniform-crime-reports-definition-of-rape>

Table 1

Descriptive Statistics of Variables

Measure	M(SD) or %	1	2	3	4	5	6	7	8	9	10
1. Vaginal Rape	48.1%	-									
2. Oral Rape	36.8%	.471**	-								
3. Anal Rape	42.5%	.255**	.216**	-							
4. Depressive Symptoms	0.82 (.77)	.092**	.125**	.150**	-						
5. Anxiety Symptoms	0.52 (0.61)	.115**	.122**	.171**	.681**	-					
6. Intrusive Experiences	1.63 (0.47)	.195**	.150**	.167**	.362**	.351**	-				
7. Defensive Avoidance	1.88 (0.57)	.133**	.183**	.145**	.361**	.342**	.675**	-			
8. Negative Sex Effects	3.09 (1.86)	.348**	.275**	.221**	.151**	.201**	.362**	.343**	-		
9. Sexual Concerns	1.47 (0.41)	.184**	.227**	.163**	.388**	.395**	.372**	.362**	.392**	-	
10. Dysfunctional Sex	1.59 (0.43)	.173**	.204**	.195**	.271**	.254**	.320**	.368**	.261**	.563**	-

Note:

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

Table 2
Hierarchical Regression Models: Associations between Vaginal, Oral, and Anal Rape and Mental Health Outcomes

	Anxiety Symptoms			Depressive Symptoms			Intrusive Experiences			Defensive Avoidance		
	<i>B</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>t</i>	<i>p</i>
<u>Step 1</u>												
Vaginal	.115	3.401	.001	.092	2.717	.007	.195	5.850	.000	.133	3.956	.000
	$R^2 = .012, p = .001$			$R^2 = .007, p = .007$			$R^2 = .037, p = .000$			$R^2 = .017, p = .000$		
<u>Step 2</u>												
Vaginal	.074	1.933	.054	.043	1.116	.265	.160	4.247	.000	.061	1.598	.110
Oral	.087	2.285	.023	.105	.061	.105	.074	1.967	.049	.155	4.087	.000
	$R^2 \text{ change} = .006, p = .023$			$R^2 \text{ change} = .009, p = .006$			$R^2 \text{ change} = .004, p = .049$			$R^2 \text{ change} = .019, p = .000$		
<u>Step 3</u>												
Vaginal	.045	1.182	.238	.018	.461	.645	.137	3.592	.000	.040	1.046	.296
Oral	.070	1.824	.069	.089	2.334	.020	.060	1.578	.115	.142	3.741	.000
Anal	.144	4.145	.000	.126	3.624	.000	.119	3.452	.001	.104	3.005	.003
	$R^2 \text{ change} = .019, p = .000$			$R^2 \text{ change} = .015, p = .000$			$R^2 \text{ change} = .013, p = .001$			$R^2 \text{ change} = .010, p = .003$		

Hierarchical Regression Models: Associations between Vaginal, Oral, and Anal Rape and Sexual Health Outcomes

Table 3

Negative Effect on Sex Life			Sexual Concerns			Dysfunctional Sexual Behavior			
<i>B</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>t</i>	<i>p</i>	
<i>Step 1</i>									
Vaginal	.348	9.478	.000	.184	5.494	.000	.173	5.174	.000
	$R^2 = .120, p = .000$		$R^2 = .033, p = .000$			$R^2 = .029, p = .000$			
<i>Step 2</i>									
Vaginal	.289	7.589	.000	.099	2.645	.008	.099	2.636	.009
Oral	.182	4.765	.000	.180	4.811	.000	.158	4.191	.000
	$R^2\text{change} = .030, p = .000$		$R^2\text{change} = .025, p = .000$			$R^2\text{change} = .019, p = .000$			
<i>Step 3</i>									
Vaginal	.268	7.050	.000	.078	2.061	.040	.070	1.856	.064
Oral	.167	4.408	.000	.167	4.453	.000	.140	3.721	.000
Anal	.151	4.146	.000	.107	3.122	.002	.147	4.296	.000
	$R^2\text{change} = .022, p = .000$		$R^2\text{change} = .011, p = .002$			$R^2\text{change} = .020, p = .000$			